FINAL BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON SUPERFUND SITE
OLD BRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY

Submitted To:

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Prepared For:

BASF Corporation
Oak Ridge Parkway
Toms River, New Jersey

Prepared By:

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April 13, 2015

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Project No. 3651120035

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LIST OF ACRONYMS

ABS	Oral absorption factor
ADAF	Age-Dependent Adjustment Factor
AMEC	AMEC Environment & Infrastructure, Inc.
AOC	Administrative Order on Consent
ATSDR	Agency for Toxic Substances and Disease Registry
BASF	BASF Corporation
BGS	Below Ground Surface
BHHRA	Baseline Human Health Risk Assessment
CALEPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COI	Chemicals of Interest
COPCs	Chemicals of Potential Concern
CSF	Cancer Slope Factors
CSM	Conceptual Site Model
ELCR	excess lifetime cancer risk
EPC	Exposure Point Concentration
EA	Exposure Area
ft	feet
GWSL	Groundwater Screening Level
HI	Hazard Index
HEAST	Health Effects Assessment Summary Tables
HQ	Hazard Quotient
IASL	Indoor Air Screening Level
IRM	Interim Response Measure
IRIS	Integrated Risk Information System
UR	Inhalation unit risk
LOAEL	Lowest Observed Adverse Effect Level
µg/L	Micrograms per Liter
$\mu g/m^3$	Micrograms per Cubic Meter
mg/m^3	Milligrams per Cubic Meter
mg/kg	Milligrams per Kilogram
MACTEC	MACTEC Engineering & Consulting, Inc.
MF	Modifying Factor
MRLs	Minimal Risk Levels
NCEA	National Center for Environmental Assessment

NCP	National Oil and Hazardous Contingency Plan
NHL	Non-Hodgkin lymphoma
NJDEP	New Jersey Department of Environmental Protection
NOAEL	No Observed Adverse Effect Level
OU	Operable Unit
P&T	Pump and Treat
PAH	Polyaromatic Hydrocarbons
PARCC	Precision, Accuracy, Repeatability, Completeness, and Comparability
PCB	Polychlorinated Biphenyls
PPRTV	Provisional Peer Reviewed Toxicity Values
PRGs	Preliminary Remediation Goals
RAGS	Risk Assessment Guidance for Superfund
RAL	Rapid Action Level
RfC	Reference Concentrations
RfD	Reference Doses
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RME	Reasonable Maximum Exposure
RSL	Regional Screening Levels
SCSR	Site Characterization Summary Report
SGSL	Soil Gas Screening Levels
SOW	Statement of Work
SQL	sample quantitation limits
SRI	Supplemental Remedial Investigation
STSC	Superfund Technical Support Center
SVOC	Semivolatile Organic Compounds
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyls
PCE	Tetrachloroethylene
TCE	Trichloroethylene
TPH	Total petroleum hydrocarbons
UCL	Upper Confidence Limit
UF	Uncertainty Factor
URs	Unit Risk
USEPA	United States Environmental Protection Agency
UST	underground storage tank

VI	Vapor Intrusion
VISL	Vapor Intrusion Screening Criteria Levels
VOC	Volatile Organic Compounds

1.0 INTRODUCTION

AMEC Environment & Infrastructure, Inc. (AMEC) (formerly MACTEC Engineering & Consulting, Inc. (MACTEC)) has prepared this Final Baseline Human Health Risk Assessment (BHHRA) on behalf of BASF Corporation (BASF) for Operable Unit 1 (OU1) and Operable Unit 2 (OU2) of the CPS/Madison Superfund Site, located in Old Bridge Township, Middlesex County, New Jersey (**Figure 1-1**). OU1 includes groundwater and OU2 includes soils at the Former CPS Facility. The Former CPS Facility (the Property), which consists of the CPS Plant Parcel and the CPS Side Lot Parcel is a 35-acre property. The Madison Industries Facility is located adjacent to and west of the Former CPS Facility. Both properties comprise the CPS/Madison Superfund Site (**Figure 1-2**).

The purpose of this BHHRA is to characterize the potential health risk associated with potential exposure to impacted environmental media by receptors associated with current and foreseeable future land uses, in the absence of further remediation. This BHHRA addresses soils at Area 1 (the former tank farm – also called AEC-5), Area 2 (the former plant area – also called AEC-1)), and Area 3 (the side lot) of the CPS Facility (**Figure 1-3**), groundwater beneath and down gradient of the Site, groundwater/surface water interaction, and indoor air (potentially associated with vapor intrusion) at the former CPS Facility and the Madison Industries Facility. The BHHRA evaluates soils at the former CPS Property, the vapor intrusion pathway at the former CPS Property and the Madison Industries Property, and groundwater at the former CPS Property, the Madison industries Property, and the downgradient Runyon wellfield.

This BHHRA is required by the Administrative Order on Consent (AOC) entered into by Ciba Specialty Chemicals Corporation (Ciba; acquired by BASF in April 2009) and the United States Environmental Protection Agency (USEPA) Region 2 on October 5, 2005 (USEPA, 2005a), and the associated Statement of Work (SOW) (USEPA, 2005b). BASF is not responsible under the AOC for conducting Remedial Investigation/Feasibility Study (RI/FS) activities for metals in media other than groundwater. This BHHRA evaluates metals and constituents other than volatile organic compounds (VOCs) in Site media for the purpose of completely characterizing the risks associated with media impacted by CPS-related contaminants of potential concern and better understanding the remedial alternatives and/or opportunities to repurpose the property (or portions thereof).

1.1 Regulatory Context of Human Health Risk Assessment

BASF is conducting an RI/FS under an AOC and associated SOW as described above. The AOC and SOW were developed per the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The applicable regulatory requirement is the National Contingency Plan (NCP), 40 CFR Part 300.

The AOC and SOW identify requirements for OU1 (groundwater) and OU2 (soils at the former CPS Facility) and OU3 (soils at the Madison Industries Facility) [not included in this BHHRA]. This BHHRA specifically addresses the human health risks associated with OU1 and OU2.

A complete list of regulation, guidance and policy documents that have been relied upon to complete the BHHRA is included in the References List in Section 8.0 of this BHHRA. Specifically, the BHHRA is performed using USEPA CERCLA guidance for risk assessment, including, but not limited to the USEPA risk assessment guidance and directives listed below:

- Risk Assessment Guidance for Superfund (RAGS). Volume 1: Human Health Evaluation Manual (Parts A, D, E and F) (USEPA, 1989; 2001; 2004; 2009)
- Exposure Factors Handbook (USEPA, 1997a, 2011)
- Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, 2002a)
- Calculating Upper Confidence Limits (UCLs) for Exposure Point Concentrations (EPCs) at Hazardous Waste Sites (USEPA, 2002b)
- Human Health Toxicity Values in Superfund Risk Assessments (USEPA, 2003)
- Guidelines for Carcinogen Risk Assessment, Final (USEPA, 2005c)
- Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005d).
- USEPA Vapor Intrusion Screening Level Calculator, User's Guide (USEPA, 2013a)

1.2 Content of the Human Health Risk Assessment

The BHHRA is completed using a four-step process, consistent with the framework for risk assessment described in *RAGS* (USEPA, 1989). The four steps include Data Evaluation and Selection of Chemicals of Potential Concern (sometimes also referred to as Hazard Identification), Exposure Assessment, Toxicity Assessment, and Risk Characterization. Supporting documentation of the risk assessment methods, inputs, and results are provided in tables, figures, and appendices to the document. The organization of the BHHRA and content of each of the report sections is described below.

The remainder of Section 1.0 provides the Site description, remedial investigation summary, the conceptual site model (CSM) from a physical perspective and from a human health risk assessment perspective (nature and extent of contamination and fate and transport, identification of receptors, exposure media, and exposure pathways). **Tables 1-1** through **1-5** (Vapor Intrusion evaluation), **Attachment A** (analytical data tables), and **Attachment B** (contaminant distribution figures) support the discussion of the CSM. **Figure 1-1** provides the Site location, **Figure 1-2** provides the overall CPS/Madison Superfund Site layout, and **Figure 1-3** provides the CPS Facility (the Site) layout. **Table 1-6** provides 'RAGS Part D, Table 1', which is the 'road map' for the risk assessment and the basis for the grouping of analytical data described in Section 2.0 and the exposure assessment described in Section 3.0.

Section 2.0, Data Evaluation and Identification of Chemicals of Potential Concern summarizes and documents the evaluation of existing data and the development of the data sets used in the BHHRA and documents the selection of the chemical parameters that are evaluated in the BHHRA (Chemicals of Potential Concern (COPCs). The culmination of the data evaluation is the

identification of COPCs for each of the OU1 and OU2 media. The selection of COPCs is documented in tables and text. **Tables 2-1** through **2-4** present the COPC selection tables for the HHRA. **Attachment A** presents the analytical data considered in the BHHRA.

Section 3.0, Exposure Assessment, provides information documenting the human populations that could access or use the Site under current and possible future land use conditions, discusses how those populations could potentially be exposed to the COPCs in Site media, and quantifies how much exposure could occur (not required for this Pathway Analysis Report – to be included in the Draft BHHRA RAGS Part D Table 7s and 9s)). Specific components of the Exposure Assessment include descriptions of current and future land uses and receptors, exposure areas (EAs), exposure pathways, and exposure scenarios, and documentation of exposure point concentrations (EPCs) and exposure intake calculations (latter to be provided in the Draft BHHRA RAGS Part D Table 7s and 9s). **Tables 3-1 through 3-15** document the exposure point concentrations for media and scenarios evaluated. **Tables 3-16 through 3-20** document the exposure parameters utilized in the exposure assessment. **Attachment C** (groundwater/surface water interaction evaluation), **Attachment D** (vapor intrusion evaluation), and **Attachment E** (site photographs) support both the CSM discussion and the exposure assessment discussion. **Attachment F** provides supporting documentation for calculation of EPCs using USEPA Pro-UCL software.

Section 4.0, Toxicity Assessment, provides information concerning the toxicological attributes of COPCs and the dose-response relationships of the COPCs that are used to quantify health risks. **Tables 4-1 through 4-6** document the toxicity values utilized in the BHHRA.

Section 5.0, Risk Characterization presents the methodology used to calculate and summarize health risks, as well as the results and interpretation of the calculated risks. RAGS Part D Table 7s and RAGS Part D Table 9s will present the RAGS Part D tables that collectively provide the documentation of risk calculations. **Tables 5-1 and 5-2** summarize the calculated human health risks. RAGS Part D Table 7s and Table 9s included in **Attachments G and H** document the human health risk calculations.

Section 6.0 presents an uncertainty analysis, which provides an evaluation of the data evaluation, exposure assessment, toxicity assessment, and risk characterization variables, assumptions, and decisions that could or may have affected the results of the risk assessment.

Section 7.0 provides the summary and conclusions of the BHHRA. The results are presented in the context of CERCLA risk management criteria.

Section 8.0 documents references utilized in the preparation of the BHHRA.

1.3 Site Description

The former CPS Property consists of two parcels of land (as indicated on **Figure 1-2**) located on Old Water Works Road, Old Bridge Township, New Jersey and covers approximately 30 acres. The CPS Plant Parcel contained the plant production areas and the adjacent parcel that is a largely undeveloped side lot. The developed portion of the CPS Site is approximately 6.7 acres and the undeveloped portion is approximately 21.3 acres (Ciba, 2008). The CPS Site is further

subdivided into three sub areas (Area 1, Area 2, and Area 3), which represent the former tank farm area, the former plant area and the side lot, respectively (**Figure 1-3)** (BASF, 2011).

In December 2001, the CPS Chemical plant had ceased commercial operation and by November 2005 the structures associated with the plant operations had been demolished. Except for the former tank farm area, which is currently an unpaved water-filled depression, areas with soil, cement and paving remain intact, although some asphalt surfaces were damaged during demolition. The former CPS Plant parcel (Areas 1 and 2) is about 95% paved with asphalt or concrete. The CPS Side Lot area (Area 3) is 100% unpaved, and it is the location of the groundwater recharge basin as shown in **Figure 1-3** (BASF, 2011).

The only current use of the CPS property is operation and maintenance of a groundwater extraction and treatment system. There are two small pump houses and a treated groundwater discharge basin associated with this system. The property is improved with a currently unoccupied former lab/warehouse/office building located at the northwest corner of the CPS property. There is an open-air storage structure (roof only) located immediately south of that building. There is also a temporary field trailer on-site that is used by employees involved with operation and monitoring of the groundwater treatment system and investigation activities. Currently, there are no full-time employees at the property. (BASF, 2011)

The Interim Remedial Measure (IRM) treated groundwater discharge basin is located in the northern portion of the CPS property side lot. That basin is currently inaccessible due to an 8-foot (ft) chain link fence. A subsurface municipal sewer line traverses the property from the southwest to the northeast. Refer to **Figure 1-3** for the locations of these features.

The approximately 30-acre property as well as most of the surrounding area is zoned SD3, Specialized Development for industrial land use as part of the Township's long term development plan, and therefore it is unlikely that these areas will be used in the future for residential development. The former CPS Site was previously used for industrial purposes and although it is currently unused, it is likely that future use will be industrial.

There are no definitive foreseeable plans for the former CPS Site; however, if possible, BASF would like to put into productive use both Area 2 (the former plant area outside the former tank farm area) and Area 3 (the side lot). Areas 2 and 3 generally contain lower levels of contamination than does Area 1 (the former tank farm). Future use(s) of these areas will likely be industrial (BASF, 2011).

The CPS property is bordered to the north by Old Water Works Road, to the west by the Madison Industries property, the properties south and east of the Site are undeveloped and the closest residence is approximately ½ mile northeast of the property.

With regard to surface water, **Figure 1-3a** provides the stormwater conveyance structures across the CPS property. There are two primary drainage channels. One bisects the property from north to south. The other traverses the southern property line, and it connects the upland watershed with Prickett's Brook to the west. While this drainage feature has been referred to as Prickett's Brook, a stream segment is not included on the USGS topographic map (Figure 1-1, 1981) or the NJDEP GeoWeb GIS stream layer. Both features carry water only during significant storm

events and during high groundwater table conditions. Figure 1-3a also shows two areas of ponded water. The ponded water in Area 3 is associated with the groundwater P&T system (recharge basin). The ponded water in Area 1 is associated with an anthropogenic depression that resulted from demolition of the former tank farm (carries water during significant storm events and during high groundwater elevation conditions).

The brook is not used for recreational purposes on the Madison property nor in the downstream portion of the brook that flows through a wooded area between the Madison Industries property and Prickett's Pond. Prickett's Pond was created as a recharge basin for the Runyon well field and it is not used for recreational purposes. The Perth Amboy municipal water supply Runyon Supply Wells are located approximately 3,000 ft. southwest of the CPS property.

Madison Facility Property

The adjacent Madison Industries Facility property is 10 acres in size and remains an active chemical manufacturing facility. The property is paved, fenced, and has 24-hour security (ATSDR, 1998). The Remedial Investigation Report (BASF 2013) provides additional information concerning environmental impacts at that property.

Prickett's Brook and Pond, Tennent Pond, and the Runyon Well Field

The following description of the Prickett's Brook and Pond, Tennent Pond, and The Runyon Well Field, has been summarized from the ATSDR Public Health Assessment (ATSDR, 1998). The City of Perth Amboy well field, known as the Runyon Watershed, is located directly south-southwest and down gradient of the CPS/Madison Superfund Site. The Perth Amboy well field supplies the water mostly for the cities of Perth Amboy and South Amboy. The majority of the water serving Perth Amboy is drawn from the Old Bridge Sand aquifer near the southern end of Tennent Pond. Part of the Perth Amboy well field includes two recharge ponds, Tennent Pond and Prickett's Pond. These ponds were specifically created to enhance groundwater recharge to the supply wells. Local surface-water drains to the southwest across the study area: Prickett's Brook flows from the Madison Industries facility into Prickett's Pond. Prickett's Pond drains into Tennent Brook, which in turn, serves as a recharge basin for Tennent's Pond. Tennent's Brook then flows northwest, joins the South River, and empties into the Raritan River ultimately emptying into the Raritan Bay. Prickett's Brook acts as an eroding stream transporting and depositing suspended material into Prickett's Pond. (ATSDR, 1998).

1.4 Remedial Investigation Summary

A summary of the investigations and activities performed to generate the analytical data to support this HHRA are presented in the Remedial Investigation (RI) Report (BASF, 2013). The RI Report relied on analytical data generated during a Supplemental Remedial Investigation (SRI) which was performed pursuant to an October 5, 2005 AOC entered into by Ciba Specialty Chemical Corporation (Ciba) and the USEPA Region 2. The findings of the SRI were presented in the Site Characterization Summary Report (SCSR) (BASF, 2011). In 2012, BASF defined and completed final elements of the SRI work scope. Upon completion of that additional work, BASF concluded that the work performed had generated the data sufficient to complete the Risk Assessment tasks and initiate the FS portion of the project. Refer to Section 3.2 of the RI Report for a summary of the Remedial Investigation activities and findings (BASF, 2013).

1.5 Conceptual Site Model (CSM)

A CSM is used to describe the potential migration pathways through which Site-related contaminants may have been transported and/or trans-located from source or release areas at the Site to other environmental media where possible human and environmental exposure may occur. The potential human receptors and exposure pathways are discussed below in the context of the physical CSM. **Figure 1-4** presents Figure 16 excerpted from BASF (2013) and depicts a cross-sectional CSM for the CPS/ Madison Superfund Site. Sources, impacted media, migration pathways, receptors, and routes of exposure are discussed in the following sections. **Figure 1-5** presents this discussion summarized in a Human Health Risk Assessment Conceptual Site Model Figure.

1.5.1 Sources

At the CPS Facility, releases occurred within Area 1 (**Figure 1-3**) in the former tank farm area (called AEC-5 in previous reports) and in the former truck and railroad car loading area (called AEC-1 in previous reports). In the former Tank Farm area, activities related to solvent recycling and the storage and use of chemical raw materials likely resulted in releases to soil and subsequently to groundwater. As reported in the RI Report, "The VOCs detected in former tank farm area soils include: 1,2,4-trichlorobenzene; 1,4-dichlorobenzene; 1,2-dichlorobenzene; chlorobenzene; benzene; toluene; xylene; tetrachloroethene PCE); trichloroethene (TCE); methylene chloride; 1,1,2,2-tetrachloroethane and 1,2-dichloroethane. In addition, a few semivolatile organic compounds (SVOCs), including polynuclear aromatic hydrocarbon (PAH) compounds, were detected at low concentrations in shallow AEC-5 [Area 1] soils" (BASF, 2013). Delineation and sampling conducted during the SRI Phase 2 indicated that 1,4-dioxane had been released to groundwater in the vicinity of the former truck and railroad car loading area (BASF, 2013). The extent of this release was identified on Figure 13 of the RI Report, and the location of the former truck and railroad car loading areas is identified on **Figure 1-3.** As reported Section 3.2.8.1 of the RI Report, "1,4-dioxane was detected at 15 of the 23 locations within the sampling grid at concentrations up to 650 ug/L in the shallow groundwater samples. Deeper groundwater samples (14'-16') (see Appendix F6) showed much lower concentrations (non-detectable at 15 locations, maximum detection 170 ug/L). The maximum concentrations in the deeper samples were noted at the same locations where the shallow sample concentrations were highest. Based on the pattern of detections and range of concentrations, it appears that the 1,4-dioxane detected during the IRM Assessment sampling on the Madison Site originated in the AEC-1 area[1]." (BASF, 2013)

At the Madison Facility, located hydraulically downgradient of the CPS facility, operations have historically been associated with the manufacture of sulfates and chlorides of zinc and other select inorganic constituents. In addition to zinc, three other inorganic constituents (cadmium, copper and lead) have been associated with site operations. Manufactured products consist of edible forms of copper and zinc, used as nutritional supplements. In addition, cadmium and lead are acknowledged to be associated with past facility operations. Raw materials containing zinc, lead,

[1] former truck and railroad car loading area, see Figure 1-3.

and cadmium were historically stored in outside piles (no longer present) on the site. As reported in the RI Report, during the years between 1970 and 1979, a series of nine major storage tank spills (zinc sulfate and zinc chloride solutions) occurred with approximately 80,000 gallons of material lost. These major spills, combined with incidental spills, drips and leaks, have contributed to contamination of the underlying aquifer (BASF, 2013).

As reported in the RI Report, "The Evor Phillips Leasing Company property (EPLC Site), located northeast of the CPS/Madison Site, was leased to a variety of industrial operators between 1970 and late 1974. Activities conducted on the site during that timeframe reportedly included waste hauling/treatment/storage and disposal (including acid neutralization), precious metal reclamation, and waste-oil recovery. Two onsite treatment ponds formerly used for the neutralization of acidic and caustic wastewater were reportedly closed in 1975 with NJDEP approval." Drums and underground storage tanks (USTs) have been removed and impacted soils have been excavated and removed from the site. The locations of those removals are considered to be the former chemical release source areas at the EPLC Site. Groundwater at the EPLC Site has been impacted by several chlorinated VOCs as well as benzene, ethylbenzene, and xylenes (BASF, 2013). Groundwater interim remedial measures implemented under USEPA oversight resulted in marked decreases in groundwater VOC concentrations on the EPLC site and in downgradient areas. A final groundwater remedy is being designed which will address remaining VOC impacts related to EPLC. Based upon EPLC data, since about 2003, mass flux from the EPLC site has been negligible, and CPS/Madison data collection does not currently detect a significant contribution from EPLC.

1.5.2 Impacted Media and Potentially Receiving Media

1.5.2.1 Soil

The nature and extent of contamination at the Site has been presented and discussed thoroughly in numerous documents previously submitted to New Jersey Department of Environmental Protection (NJDEP) and USEPA, and most recently in the February 2013 Draft *Remedial Investigation Report, CPS/Madison Superfund Site, Old Bridge, Middlesex County, New Jersey EPA I.D. Number: NJD002141190 (BASF, 2013)* and the October 2011 *Site Characterization Summary Report, CPS/Madison Superfund Site, Old Bridge, Middlesex County, New Jersey* (BASF, 2011). The summary of site investigation activities and the findings of each sampling/analysis event are, therefore, not repeated here.

The former CPS Property has been delineated into three sub-areas based on historical land use and hydrology (**Figure 1-3**). Area 1 is where chemical processing operations occurred, and it is located hydraulically downgradient or side-gradient of both Areas 2 and 3. Area 2 is associated with support activities including laboratory and office space and storage facilities. Area 3 is undeveloped and has never been used for production activities. Sand and gravel excavation took place throughout this portion of the property prior to 1977. As a result, the area is flat-lying and poorly drained and devoid of trees.

Figure 1-6 identifies the RI soil sampling locations within Areas 1, 2, and 3. In **Attachment A**, **Tables A-1, A-2, and A-3** summarize the surface soil analytical data and present sample results for individual samples for Areas 1, 2, and 3. Each of those tables presents the frequency of

detection, range of reporting limits, range of detected concentrations, and the arithmetic mean concentration for all samples collected within 2 feet of the land surface. **Tables A-4, A-5, and A-6** present the same information for soil within 10 feet of land surface. **Table A-7** presents the soil analytical data in close proximity to the sewer line that runs through the property. The human health risk assessment has considered soils within the top 10 feet of the soil column as potentially accessible to human receptors. In addition, each of these tables presents all of the analytical data for the samples considered in the human health risk assessment for that particular exposure area.

The data summary indicates that 56 VOCs, 36 SVOCs, three polychlorinated biphenyls (Aroclor-1260, Aroclor-1248, and Aroclor-1254), and 23 inorganics/metals have been detected in at least one soil sample. The most frequently detected VOCs in soil (in decreasing order of number of detections) are toluene, acetone, xylenes, ethylbenzene, chlorobenzene, 1,2-dichlorobenzene, 1,4-dichlorobenzene, benzene, methylene chloride, 1,3-dichlorobenzene, 1,2,4-trichlorobenzene, 1,2-cis-dichloroethylene, trichloroethene, tetrachloroethylene, 1,2-dichloroethane, 1,1,2,2-tetrachloroethane, 1,2,3-trichlorobenzene, tetrachloroethane.. The most frequently detected SVOCs are bis(2-ethylhexyl)phthalate (BEHP), chrysene, fluoranthene, pyrene, phenanthrene, fluorene, benzo(b)fluoranthene, biphenyl, benzo(a) pyrene (B(a)P), biphenyl, benzo(a)anthracene, benzo(ghi)perylene, benzo(k) fluoranthene, indeno(1,2,3-cd)pyrene, naphthalene, 2-methylnaphthalene, and fluorene. The PAHs are commonly detected in soils in urban and suburban environments. Many inorganic and metal constituents were detected with high frequency in soil samples (aluminum, arsenic, barium, beryllium, cadmium, calcium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, vanadium, and zinc. Most of these constituents are naturally occurring and several (e.g., zinc, copper, cadmium, lead) may in part be attributable to historical Madison Industries operations.

1.5.2.2 Groundwater

The area of groundwater that is particularly relevant for the CPS/Madison Superfund Site includes the following: the Evor Philips Superfund site located to the northeast of the CPS site; the CPS Site; the Madison Site, and the Runyon Wellfield property (ground water supply for Perth-Amboy) to the southwest of the CPS and Madison Sites. **Figure 1-2** depicts the general locations of these sites. Overburden groundwater naturally flows generally in a northeast to southwest direction from the Evor Philips Site, through the CPS and Madison Sites, and toward the Runyon Wellfield property to the southwest.

As per the SOW (USEPA, 2005), BASF is responsible for conducting groundwater RI/FS activities only for contamination originating on the CPS and Madison sites. **Figure 1-7** provides the soil gas and indoor air sampling locations. **Figure 1-8** identifies the shallow groundwater sampling locations within the CPS Site. **Figure 1-9** identifies the groundwater sampling locations used to characterize CPS/Madison groundwater impact. **Attachment A Table A-8** summarizes the analytical data and presents sample results for individual characterization samples for groundwater (the plume). **Attachment A Tables A-9 through A-11** summarizes the analytical data and presents sample results for individual samples for shallow groundwater within Area 1, 2, and 3. Each of these tables presents all of the analytical data for the samples considered in the human health risk assessment for that particular exposure area (construction worker exposure to shallow groundwater).

The RI report also discusses groundwater impacts associated with the upgradient Evor-Philips Site and other potential sources of groundwater contamination. The following text describes the chemical impacts to groundwater associated with the sources at Evor-Philips, CPS, and Madison.

As described in the 2013 RI Report, CPS chemicals of interest (COIs) that result in an extensive groundwater distribution (outside the CPS source area) have been grouped and referred to as CPS groundwater COIs. The CPS groundwater COIs include: 1,2,4-trichlorobenzene; chlorobenzene; benzene; methylene chloride; 1,1,2,2-tetrachloroethane; 1,2-dichloroethane; 1,1-dichloroethene; tetrachloroethene; trichloroethene; cis-1,2-dichloroethene; vinyl chloride and 1,4-dioxane. Five compounds, are present only in the former tank farm area: 1,4-dichlorobenzene; 1,2-dichlorobenzene; toluene; 1,2-dichloropropane; 1,1,2-trichloroethane. Figures 25A through 28A of the RI Report (copies included in **Attachment B**) present the groundwater concentration distributions for 1,2,4-trichlorobenzene, chlorobenzene, benzene, and 1,4-dioxane, respectively.

As discussed in the 2013 RI Report, Madison Industries' operations have included use and onsite storage of materials containing cadmium, copper, lead and zinc. Madison industries is required to analyze these metals for their groundwater monitoring. Therefore, cadmium, copper, lead and zinc are referred to Madison COIs.

The Evor Philips Site plume constituents include 1,2-dichloroethane, trichloroethene, cis-1,2-dichloroethene, methylene chloride (the primary VOCs indicative of spatial extent of the Evor Philips-related plume), carbon tetrachloride, chloroform, 1,1,2,2-tetrachloroethane, tetrachloroethene, 1,1,1-trichloroethane, and vinyl chloride.

The City of Perth Amboy's municipal well field (Runyon Wellfield) is located approximately 3,000 feet south-southwest of the CPS Facility property. Since 1991 both the CPS and Madison properties have operated and maintained groundwater pumping and treatment interim remedial measures to protect the Runyon Wellfield from potential impacts from Evor Philips, CPS, and Madison COIs in groundwater.

Wells #5 and #6A are the only Runyon wells (see **Figure 1-9**) that have been affected by CPS COIs, and detected concentrations have been below the federal and NJ drinking water drinking water standards since September 1999, when benzene was detected at 1.2 micrograms per liter (µg/L) in Well #6A. Over the last ten years VOCs have been periodically detected in raw water samples at levels below applicable drinking water standards (both CPS COIs (chlorobenzene, benzene, 1,4-dichlorobenzene, 1,2-dichloroethane, cis-1,2-dichoroethene, toluene, and trichloroethene) and compounds not related to CPS (chloroform, chloromethane, methyl tert-butyl ether, and tert-butyl-alcohol)). Madison COIs (lead and zinc) have been detected in raw water samples from Wells #5 and #6A, but never at concentrations above drinking water standards.

Since 1991 flow of groundwater and associated CPS and Madison contaminants have been mitigated by interim remedial measures (pumping and treatment). Since 1996, both CPS and Madison have been operating local interim remedial measures (IRMs) to control site-related groundwater contamination at the respective property boundaries. Since 1999, EPLC has been operating a pump and treat (P&T) system to control its groundwater impacts. As reported in BASF (2013), there are two operating remediation wells at the Evor Philips Site, two operating remediation wells at the CPS Site, and ten operating remediation wells at the Madison Site. The

remediation wells at the CPS and Madison Sites "collectively intercept most of the groundwater flowing through source areas" on those two sites and the Runyon Wellfield is not significantly impacted.

1.5.2.3 Surface Water and Sediment

The hydrology and the nature and extent of contamination in Prickett's Brook, Prickett's Pond, and Tennant Pond are discussed in the RI Report (BASF, 2013). Prickett's Brook is an intermittent stream upstream and adjacent to the CPS and Madison Sites that supports water only during significant stormwater events and high groundwater table conditions. The report indicates the brook is a losing stream as it passes through the Madison Site and is a gaining stream (groundwater discharge) downstream of the Madison Site. There is groundwater discharge at the northern-most portion of Prickett's Pond. In the lower portions of Prickett's Pond and the downstream portion of Prickett's Brook there is groundwater recharge (stream loss). Given this information, there is a potential for migration of constituents in groundwater to surface water and sediment of Prickett's Brook and Prickett's Pond.

In order to evaluate the potential impact of impacted groundwater discharging to the surface water bodies and to evaluate the need for surface water/sediment sampling and analysis, a groundwater / surface water interaction study was implemented. This study involved the installation of temporary piezometers at 14 locations in Prickett's Brook and Pond, measurement of elevation of groundwater within the piezometers and the surface water adjacent to each piezometer (determination of vertical gradient), and collection of groundwater samples from each piezometer for chemical analysis (VOCs, SVOCs, and total and dissolved metals). A comparison of groundwater sample analytical results for VOCs and SVOCs to ecological and human health surface water screening criteria (trespasser dermal contact and incidental ingestion of surface water) was performed. The information from the RI Report groundwater/surface water interaction study is presented as **Attachment C** to this BHHRA. No groundwater VOC or SVOC (CPS COIs) concentrations in areas of discharging groundwater were above ecological or human health screening criteria based on a potential recreational scenario. Based on these data, and the CSM for contaminant transport (in particular that the source for VOC contamination is controlled by the IRMs), it was concluded that VOCs and SVOCs in discharging groundwater would be unlikely to produce adverse impacts to ecological or human receptors now or in the future and that sampling and analysis of surface water and sediment for CPS COIs is not necessary.

Analytical data from GW-SW-3, GW-SW-4, GW-SW-5, GW-SW-6, and GW-SW-7 (locations where groundwater was determined to upwell to surface water during the groundwater / surface water interaction study) were used to conservatively estimate surface water quality in the COPC screening performed in this BHHRA. Refer to Section 2.3 for a discussion of this evaluation.

1.5.2.4 Potential Vapor Intrusion Media (groundwater/soil vapor/indoor air)

The reported presence of VOCs in soil at and groundwater beneath the CPS and Madison properties indicates the potential for migration of vapors from soil and or groundwater to soil vapor into indoor air of occupied or potentially occupied buildings. Several activities have been conducted to evaluate the vapor intrusion pathway and potential impacts to soil vapor and indoor air. Those activities include:

- Vapor intrusion (VI) investigation at the CPS property in 2009 per NJDEP procedures and screening values;
- Vapor intrusion investigation at the Madison property in 2009 per NJDEP procedures and screening values;
- Updates to the evaluation of results for the 2009 CPS and Madison property VI investigations using updated 2013 NJDEP groundwater, soil vapor, and indoor air screening levels (NJDEP, 2013a);
- Updates to the evaluation of results for the 2009 CPS and Madison property VI investigations using 2013 USEPA Vapor Intrusion Screening Criteria Levels (VISLs) presented in the VISL Calculator (USEPA, 2013a) for a commercial scenario and the USEPA Region 2 VI Matrix approach;
- Screening of shallow groundwater data from Areas 1, 2, and 3 of the CPS property using USEPA VISL groundwater screening levels (GWSLs).
- Evaluate information from multiple lines of evidence concerning the need for any further evaluation of the VI pathway.

2009 Vapor Intrusion Investigation CPS Property and Subsequent Updates

VI investigations were conducted on the CPS property as described in the On-Site Vapor Intrusion Investigation Report (MACTEC, 2009a) which is included as Appendix E of BASF (2013) and as **Attachment D-1** to this risk assessment submittal). The CPS property ("On-Site") Vapor Intrusion Work Plan was approved by USEPA on June 3, 2009. The On-Site VI investigation involved the comparison of groundwater data to NJDEP vapor intrusion-based GWSLs, collection of soil vapor samples, comparison of the soil vapor results to NJDEP soil gas screening levels (SGSLs), and collection and analysis of indoor air samples (On-Property) as necessary.

The On-Site VI investigation (September 2009) included collection of co-located soil gas (Summa canisters) and indoor air (Summa canisters) samples within the unoccupied office, laboratory, and warehouse portions of the existing building at the CPS Site and submittal of samples for laboratory analyses of VOCs using Method TO-15. **Figure 1-7** presents the locations of the soil gas and indoor air samples. Three ambient air samples (two within the building on stairwell landings and one outdoors upwind of the building) were also collected and analyzed via Method TO-15. Indoor and outdoor air samples were collected on day one of the investigation. The sub-slab soil vapor probes were installed on day 2 and they were sampled on day 3 of the investigation. Sub-slab samples were collected from 6" double screened stainless steel vapor sampling implants, packed in sand, sealed with bentonite, and fitted with 3" aluminum flush mounts that were set in place with concrete. The implants were leak tested using helium prior to sampling.

As part of the On-Site VI Investigation, the 2009 data were evaluated with respect to the NJDEP SGSLs and Indoor Air Screening Levels (IASLs) (published in 2007) to determine the need for further investigation or action in accordance with NJDEP VI Guidance and Decision Matrix Flow Chart. Indoor air sample results were also evaluated with respect to the Rapid Action Levels (RALs) to determine the need for any immediate action. The report concluded the following: VOCs were not detected above the RALs in any of the indoor air samples and no VOCs were detected above applicable screening levels in both the sub-slab soil gas and indoor air samples. Some

VOCs were detected above NJDEP SGSLs in soil gas samples (i.e., chloroform, PCE, and benzene), but were not detected in indoor air samples, indicating that the VI pathway is not complete for these compounds. VOC concentrations in all indoor air samples were below the NJDEP IASLs, with the exception of the MTBE concentration in IA-01. This exceedance is likely associated with background or other sources, such as the gas powered equipment stored in this area of the warehouse. MTBE was not detected in the associated soil gas sample, indicating that this compound is not attributable to the VI pathway. A copy of this VI evaluation is included in **Attachment D-1**.

Based on the VI investigation findings and review of data with respect to NJDEP screening levels and VI Guidance/Decision Flow Chart, it was determined that there was no immediate adverse health risk or rapid response action required at the time. Based on the lack of correlation of soil gas and indoor air results, and potential contribution from other sources (i.e., gas powered equipment), no further action was recommended for the On-Site VI Investigation.

The BHHRA First Interim Deliverable included an update to the On-Site VI Investigation due to recent NJDEP updates to the Vapor Intrusion Guidance (NJDEP, 2013b) and the associated NJDEP March 2013 IASLs and SGSLs (NJDEP, 2013a). This comparison was presented as Table 2 in the BHHRA First Interim Deliverable and is included in **Attachment D-3**. The update to the On-Site VI investigation, consistent with the NJDEP VI Guidance, evaluated multiple lines of evidence to determine appropriate action for the VI pathway for the office, laboratory, and warehouse portions of the existing building. Based on the VI investigation findings and review of data with respect to NJDEP screening levels and VI Guidance/Decision Flow Chart, the conclusions documented in the 2009 VI investigation were confirmed; no VOCs were detected above applicable screening levels in both the sub-slab soil gas and indoor air samples. Chloroform was detected above the NJDEP SGSL in four soil gas samples but not detected in any indoor air samples, indicating that the VI pathway is not complete for chloroform. Benzene was the only other compound detected at a concentration greater than the NJDEP SGSL, but the concentrations in indoor air were all below the NJDEP IASL and indoor air concentrations were similar to the ambient air concentrations, which indicates that the VI pathway is not complete for benzene.

As part of this BHHRA Second Interim Deliverable, the On-Site Vapor Intrusion Investigation results have been evaluated using the USEPA Vapor Intrusion Screening Criteria Levels (VISL) presented in the VISL Calculator (USEPA, 2013a) for a commercial scenario and the USEPA Region 2 VI Matrix approach to determine the need for further investigation or action. On-Site soil gas and indoor air results were compared to the USEPA SGSLs and USEPA IASLs for a commercial scenario (obtained from the VISL Calculator); this comparison is presented in **Table 1-1**. The following is a summary of the results of the comparison:

- VOCs were detected in one or more of the sub-slab soil gas and indoor air samples collected from the currently unoccupied building at the CPS property.
- Only four VOCs, benzene, chloroform, ethylbenzene, and tetrachloroethylene, were detected in one or more sub-slab vapor samples at concentrations greater than the USEPA SGSLs for a commercial scenario.

- No VOCs were detected in indoor air samples at concentrations greater than the USEPA IASL for a commercial scenario.

The USEPA Region 2 VI Matrix approach requires the evaluation of laboratory analytical data from co-located soil gas and indoor air sampling locations to make recommendations about further action on an analyte-specific and location-specific basis. For carcinogens, these recommendations range from (1) No Action to (9) Pursue Remediation, depending on the concentrations of volatiles detected in soil gas and indoor air with respect to the USEPA SGSLs and USEPA IASLs. For the purposes of this evaluation, the USEPA SGSLs and USEPA IASLs for a commercial scenario (obtained from the USEPA VISL Calculator) were used in the USEPA Region 2 VI Matrix approach. The findings of the USEPA Region 2 VI Matrix evaluation indicate that the indoor air and soil gas concentrations of benzene, ethylbenzene, chloroform, and PCE do not require immediate action. Instead, monitoring is the suggested approach for chloroform. Refer to **Attachment D-4** for a copy of the USEPA Region 2 VI Matrices for benzene, ethylbenzene, chloroform, and PCE. Below is a brief summary of the findings.

Benzene was detected in sub-slab soil gas sampling locations SG-01, SG-02, and SG-03 at concentrations ranging from 19.2 µg/m^3 to 93.9 µg/m^3, all of which are greater than the USEPA SGSL of 16 µg/m^3, but less than ten times the USEPA SGSL of 160 µg/m^3. The co-located indoor air concentrations ranged from 0.93 µg/m^3 to 1.15 µg/m^3, all of which fall below the USEPA IASL of 1.6 µg/m^3. According to the USEPA VI Matrix (presented in **Attachment D-4)**, the recommendation is No Action for sub-slab soil gas sampling locations SG-01, SG-02, and SG-03, as benzene was detected at a concentration greater than the USEPA SGSL, but below the USEPA IASL at each of these locations.

Ethylbenzene was detected in sub-slab soil gas sampling locations SG-01, SG-02, and SG-04 at concentrations ranging from 64.7 µg/m^3 to 221.1 µg/m^3, all of which are greater than the USEPA SGSL of 49 µg/m^3, but less than ten times the USEPA SGSL of 490 µg/m^3. The co-located indoor air concentrations range from 0.65 J µg/m^3 to 0.96 µg/m^3, all of which fall below the USEPA IASL of 4.9 µg/m^3. According to the USEPA VI Matrix (presented in **Attachment D-4)**, the recommendation is No Action for sub-slab soil gas sampling locations SG-01, SG-02, and SG-04, as ethylbenzene was detected at a concentration greater than the USEPA SGSL, but below the USEPA IASL at each of these locations.

PCE was detected in sub-slab soil gas sampling location SG-01 at 936 µg/m^3 which is greater than the USEPA SGSL of 470 µg/m^3, but less than ten times the USEPA SGSL of 4700 µg/m^3. In the co-located indoor air sample, PCE was not detected above the method detection limit of 0.14 µg/m^3. According to the USEPA VI Matrix (presented in **Attachment D-4)**, the recommendation is No Action for sub-slab soil gas sampling locations SG-01, as PCE was detected at a concentration greater than the USEPA SGSL, but below the USEPA IASL at this location.

Chloroform was detected in sub-slab soil gas sampling locations SG-01, SG-02, SG-03, and SG-04 at concentrations exceeding the USEPA SGSL of 5.3 µg/m^3. The chloroform soil gas concentrations at locations SG-01 (29.8 µg/m^3) and SG-03 (33.7 µg/m^3) are greater than the USEPA SGSL of 5.3 µg/m^3, but less than ten times the USEPA SGSL of 53 µg/m^3. The chloroform soil gas concentrations at locations SG-02 (202.2 µg/m^3) and SG-04 (209 µg/m^3) are greater than both the USEPA SGSL of 5.3 µg/m^3 and ten times the USEPA SGSL of 53 µg/m^3, but less than

100 times the USEPA SGSL of 530 µg/m^3. The co-located indoor air concentrations were non-detect at each of these sample locations at 0.14 U µg/m^3. According to the USEPA VI Matrix (presented in **Attachment D-4)**, the recommendation is Option (4) Monitor for sub-slab soil gas sampling locations SG-01 and SG-03, as chloroform was detected at a concentration greater than the USEPA SGSL, but not detected in the co-located indoor air samples at each of these locations and Option (7) Monitor for sampling locations SG-02 and SG-04 as chloroform was detected at concentrations greater than the SGSL, but not detected in the co-located indoor air samples.

2009 Vapor Intrusion Investigation Madison Property and Subsequent Updates

VI investigations were conducted on the Madison property as described in the Off-Site Vapor Intrusion Investigation Reports included in Appendix E of the 2013 RI Report (MACTEC, 2009b). The Madison property ("Off-Site") Vapor Intrusion Work Plan was approved on August 20, 2009. The investigation involved the comparison of groundwater data to NJDEP vapor intrusion-based GWSLs, collection of soil vapor samples, and comparison of the soil vapor results to NJDEP SGSLs.

The Off-Site VI investigation (MACTEC, 2009b) called for a phased approach, including soil vapor sampling and analysis in the Copper Building with additional investigation of Copper building indoor air and soil gas and indoor air sampling at two other buildings, Maintenance and Zinc/Brass, implemented as necessary. The initial sampling included sub-slab sampling (Summa canisters) within the laboratory and break room portions of the Copper Building (occupied, slab-on-grade structure) at the Madison Site. The Copper Building was investigated because it is located immediately downgradient of the CPS source area and groundwater concentrations of VOCs were above NJDEP GWSLS in monitoring wells upgradient of that building. Two other buildings, Maintenance and Zinc/Brass, were not investigated initially as the Maintenance Building is located further downgradient of the CPS source area, and the Zinc/Brass Building is located side-gradient and across Prickett's Brook.

Sub-slab sampling was conducted from 6" double screened stainless steel vapor sampling implants, packed in sand, sealed with bentonite, and fitted with 3" aluminum flush mounts that were set in place with concrete. The implants were leak tested using helium prior to sampling. Samples were analyzed for VOCs using method TO-15.

During the initial off-site vapor intrusion investigation, sub-slab soil vapor data were compared to the NJDEP SGSLs to determine the need for further investigation or action in accordance with NJDEP VI Guidance and Decision Matrix Flow Chart. Only chloroform was detected in soil gas samples above SGSLs in both samples and the duplicate. Chloroform was not identified above the GWSL in any of the groundwater samples, indicating that the presence of this compound is not associated with the groundwater plume. Concentrations of all other detected compounds in soil gas samples were below corresponding non-residential SGSLs. A copy of this VI evaluation is included in **Attachment D-2**.

Consistent with the NJDEP VI Guidance, multiple lines of evidence were evaluated to determine appropriate action for the VI pathway. Based on the VI investigation findings and review of data with respect to NJDEP screening levels and VI Guidance/Decision Flow Chart, there was no immediate adverse health risk or rapid response action required at the time. Based on the low

relative exceedance of the screening level for chloroform, the lack of correlation of soil gas and groundwater sample results, and potential contribution from other sources no further evaluation of the VI Pathway was recommended in the Copper Building or downgradient and side-gradient of the Copper Building.

As part of the BHHRA First Interim Deliverable, Table 3 of the Off-Site VI Investigation Report was updated to include the NJDEP March 2013 SGSLs. This table was presented as Table 4 in the BHHRA First Interim Deliverable and is included in **Attachment D-3**. The results presented in the updated table are consistent with the original Off-Site VI Investigation Report. Only chloroform was detected in soil gas samples above NJDEP 2013 SGSLs in both samples and the duplicate. This confirms the previous conclusion that no further evaluation of the VI Pathway is recommended in the Copper Building or downgradient/side-gradient of the Copper Building.

As part of this BHHRA Second Interim Deliverable, the Off-Site Vapor Intrusion Investigation results were evaluated using the USEPA VISL presented in the VISL Calculator (USEPA, 2013a) for a commercial scenario and the USEPA Matrix approach to determine the need for further investigation or action. On-Site soil gas results were compared to the USEPA SGSLs for a commercial scenario (obtained from the VISL Calculator); this comparison is presented in **Table 1-2**. The following is a summary of the results of the comparison:

- VOCs were detected in off-site soil gas samples;
- Benzene, chloroform, and ethylbenzene were detected in one or more samples at concentrations greater than the corresponding USEPA SGSLs.
- No co-located indoor air samples were collected as part of the approved Off-Site VI investigation Work Plan (2009).

The USEPA Region 2 VI Matrix approach requires the evaluation of laboratory analytical data from co-located soil gas and indoor air sampling locations to make recommendations about further action on an analyte-specific and location-specific basis. These recommendations range from (1) No Action to (9) Pursue Remediation, depending on the concentrations of volatiles detected in soil gas and indoor air with respect to the USEPA SGSLs and IASLs. For the purposes of this evaluation, the USEPA SGSLs for a commercial scenario (obtained from the USEPA VISL Calculator) were used in the matrix approach. The matrix approach indicates that if a constituent is detected at a concentration greater than the USEPA SGSLs, then indoor air sampling is recommended. Therefore, due to the concentrations of benzene, chloroform, and ethylbenzene detected at concentrations greater than the USEPA SGSLs, indoor air sampling would be recommended as the next step.

<u>Screening of Shallow Groundwater Data Using NJDEP Criteria and 2013 USEPA GWSLs</u>

In the BHHRA First Interim Deliverable, Area 1 shallow groundwater data (location of the CPS source area) were summarized and compared to the NJDEP 2013 VI GWSLs. This comparison was presented in Table 6 of the BHHRA First Interim Deliverable and is included in **Attachment D**. **Figure 1-8** presents the location of the shallow groundwater sampling locations within Area 1. Maximum concentrations of the following compounds were greater than the NJDEP 2013 VI GWSLs: 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,2-dichloroethane, 1,4-

dichlorobenzene, benzene, chlorobenzene, trichloroethene, and vinyl chloride. As part of the BHHRA Second Interim Deliverable, Area 1 shallow groundwater data were also summarized and compared to the USEPA VISL GWSLs. **Table 1-3** presents this comparison. Maximum concentrations of the following compounds are greater than the USEPA VISL GWSLs: 1,2,4-trichlorobenzene, 1,2-dichloroethane, 1,4-dichlorobenzene, benzene, chlorobenzene, ethylbenzene, naphthalene, and vinyl chloride. Currently, there are no buildings present within Area 1; however, a comparison of the groundwater analytical data from Area 1 with both the NJDEP VI GWSLs and the USEPA VISL GWSLs indicates that there is a potential for a vapor intrusion pathway if buildings were built and occupied in the future.

The BHHRA First Interim Deliverable included a comparison of the analytical data for shallow groundwater samples in Area 2 of the former CPS Facility property with the NJDEP 2013 VI GWSLs. This comparison was presented in Table 3 of the BHHRA First Interim Deliverable and is included in **Attachment D**. Area 2 groundwater includes several sampling locations around the perimeter, as well as upgradient of the only potentially occupied building on the former CPS Facility property. **Figure 1-8** identifies the groundwater sample locations associated with the analytical data that were included in this evaluation. Ten VOCs have been detected in at least one of the shallow groundwater samples located within Area 2, however, all detected concentrations were very low (1 µg/L or less) and all detected concentrations were below corresponding NJDEP 2013 VI GWSLs. For this BHHRA Second Interim Deliverable, Area 2 shallow groundwater concentrations were compared to USEPA VISL GWSLs. All detected groundwater concentrations were also below USEPA VISL GWSLs as well. Refer to **Table 1-4** for this comparison. This evaluation indicates that using both NJDEP and USEPA screening criteria vapor intrusion associated with potential groundwater impacts in Area 2 is not of concern and requires no further evaluation.

The BHHRA First Interim Deliverable included a comparison of the analytical data for shallow groundwater samples in Area 3 (the side lot) of the former CPS Facility property with the NJDEP 2013 VI GWSLs. Area 3 is upgradient and side-gradient of the CPS Site source area (Area 1), so substantial VOC detections in shallow groundwater were not expected. Only three compounds were detected in the three samples (acetone, carbon disulfide, and MTBE). All concentrations were orders of magnitude below the NJDEP 2013 VI GWSLs. This comparison was presented in Table 5 of the BHHRA First Interim Deliverable and is included in **Attachment D-3**. As part of the BHHRA Second Interim Deliverable, the Area 3 shallow groundwater data has been compared to the USEPA VISL GWSLs. This comparison is presented as **Table 1-5**. The three detected concentrations are orders of magnitude below the USEPA VISL GWSLs as well. This evaluation indicates that using both NJDEP and USEPA screening criteria vapor intrusion associated with potential groundwater impacts in Area 3 is not of concern and requires no further evaluation.

<u>Weight of Evidence Evaluation and Conclusions</u>

On-Site

Groundwater analytical results were used to evaluate the VI pathway at Area 1 as there are no existing buildings in this area, and sub-slab soil gas and indoor air results are not available.

A comparison of the groundwater analytical data from Area 1 with both the NJDEP and USEPA VI GWSLs demonstrated that several compounds are greater than either NJDEP and/or USEPA VI GWSLs. Therefore, there is a potential for a vapor intrusion pathway in Area 1 if buildings were built and occupied in the future.

Groundwater analytical results and co-located sub-slab soil gas results and indoor air results were used to evaluate the VI pathway in Area 2. A comparison of shallow groundwater analytical results with NJDEP VI GWSLs, sub-slab soil gas with NJDEP SGSLs, and co-located indoor air samples with NJDEP IASLs using updated NJDEP 2013 guidance indicated that although individual compounds were detected at concentrations greater than individual screening criteria, no compounds were consistently detected above both NJDEP SGSLs and NJDEP IASLs. Additionally, no analytes were detected in shallow groundwater at concentrations greater than the NJDEP VI GWSLs. A comparison of shallow groundwater with USEPA VISL GWSLs, sub-slab soil gas with USEPA SGSLs, and co-located indoor air samples with USEPA IASLs indicated similar results. VOCs have been detected above USEPA SGSLs, but not above USEPA VISL GWSLs or USEPA IASLs. Although the USEPA Region 2 VI Matrix approach recommends that the vapor intrusion pathway should be monitored for chloroform, multiple lines of evidence indicate that the vapor intrusion pathways is not complete. Concentrations of chloroform have either been non-detect and/or detected at very low concentrations in groundwater in the vicinity of the unoccupied office, laboratory, and warehouse portions of the existing building at the CPS Site, which indicates that it is unlikely that groundwater represents a continuing source of the sub-slab soil gas concentrations detected above the USEPA SGSL. Additionally, indoor air concentrations are consistent with background sampling locations, indicating that concentrations of volatile constituents in sub-slab soil gas are not migrating to indoor air, and instead the indoor air concentrations are representative of background concentrations in the area. This conclusion is consistent with the findings of the vapor intrusion evaluation that has been performed with respect to the NJDEP 2013 Vapor Intrusion Guidance described above.

In the Off-Site VI Report (REF), results of the June 2007 round of sampling at 26 monitoring wells (CPS-3A, WCC-1M, WE-2RB, WCC-3M, CPS-1, WCC-12, MI-7, DW-53, DW-5D, DW-10D, EPA-5, DW-9D, DW-9S, EPA-2, EPA-1, DW-14, DW-13D, RW-2, DW-1D, DW-1S, WCC-16VS, DEP-2, PA-B, MI-8, RS-2B, and RS-2C) were presented. Of these monitoring well locations, wells up-gradient or in the immediate vicinity of the off-site soil gas sampling locations are CPS-3A, WE-2RB, and CPS-1. When the most recent analytical results for these monitoring wells are evaluated with respect to the most recent USEPA VI GWSLs, of the three analytes detected in soil gas samples with concentrations above the SGSLs, benzene was the only analyte detected at concentrations above USEPA GWSLs. It was detected in samples from all three of these groundwater sample locations. Given concentrations of benzene in groundwater and in soil gas, the potential for a vapor intrusion pathway cannot be eliminated. However, because detected concentrations of benzene just slightly exceed the USEPA SGSL; it is unlikely that concentrations of benzene in soil gas are sufficient to migrate to indoor air at concentrations that may pose a risk to human health.

1.5.3 Migration Pathways

The 2013 RI Report (BASF, 2013) includes a comprehensive presentation and discussion of the physical CSM. Section 4.1 of that report (Physical Characteristics of the Site and Surrounding

Areas) provides descriptions of soils, groundwater characteristics, flow regimes, and downgradient uses (public water supply), the surface water bodies (Prickett's Brook, Prickett's Pond, and Tennent's Pond), and groundwater/surface water interaction. Section 4.3 of the RI report summarizes nature and extent of contamination for soil, groundwater, soil gas and indoor air, and surface water and sediment, while Section 5.0 summarizes the CSM. This information is not repeated here.

Section 4.3 of the RI report concluded that the CPS plume (VOCs) and Madison plume (metals) are well defined and that "the CPS and Madison Site IRM recovery wells appear to be limiting offsite migration of CPS groundwater COIs". There are limited residual impacts to groundwater in the Runyon Wellfield Watershed, and because migration from the CPS source area is being limited, migration of CPS COIs to the wellfield is not sufficient to have an adverse impact on water supply water quality. The RI Report cites a study by Wehran Engineering that "found no evidence of sediment impact attributable to runoff from the CPS Site only several years after the pavement and curbing were installed, suggesting that any earlier sediment migration from the CPS Site via runoff was either negligible or non-existent". The migration of volatiles from the subsurface (i.e., soil gas) was evaluated for the former CPS Facility property and the Madison property in 2009 and the results were re-evaluated in this document (Section 1.5.2.4 above). Those evaluations concluded that vapor intrusion is not a significant concern for existing buildings (Area 2), that vapor intrusion potential is not a significant concern for the CPS side lot (Area 3), and there is vapor intrusion potential for hypothetical future buildings (in the absence of engineering controls) in Area 1 (source area) of the former CPS Facility property. The Tier I groundwater/surface water interaction study (Section 3.2.3 of BASF [2013]) "did not identify any groundwater recharge areas where VOCs or SVOCs exceeded GWQS in sub-streambed groundwater" and further concluded "surface water and sediment are neither sources nor sinks for CPS Site-related constituents".

1.5.4 Current and Foreseeable Site Conditions

Section 4.1.1 of the 2013 RI Report identifies, for the human health risk assessment, current and foreseeable site conditions, potential human receptors, potential exposure media, and routes of exposure for each hypothetical receptor. Because the text in Section 4.4.1.1 of that report provides information required for this HHRA, it has been reproduced below.

As indicated on **Figure 1-3**, the site consists of the former CPS property parcel, which contained the plant production areas, and a side lot, which is largely undeveloped. The CPS Site is further subdivided into three sub areas (Area 1, Area 2, and Area 3), which represent the Former Production area, the Former Plant area and the Side Lot area, respectively.

In December 2001, the CPS Chemical plant ceased commercial operation and by November 2005 the structures associated with the plant operations were demolished, except for the laboratory/office/warehouse building, the loading dock, a small utility building and the groundwater treatment plant building. Except for the former tank farm area, which was demolished and is currently an unpaved water filled depression, the other areas with soil cement and paving remained intact, although some asphalt surfaces were damaged during demolition.

The former CPS Plant Area (Area 2) is about 95% paved with asphalt or concrete, while the CPS Side Lot (Area 3) area is 100% unpaved. Note that the groundwater recharge basin supporting the IRM is sited in Area 3.

The only current use of the CPS property is operation and maintenance of a groundwater extraction and treatment system.

There are no definitive foreseeable plans for the former CPS Site; however, if possible, BASF would like to put into productive use both Areas 2 and 3. Areas 2 and 3 generally contain lower levels of contamination than does Area 1 (the former tank farm). Future use(s) of these areas would likely be industrial, which is the current zoning status.

Properties south and east of the CPS Site are undeveloped, while the Madison Industries Facility is located immediately west of the CPS Site and industrial properties are located to the north. The closest major residential area is over one-half mile to the northeast of the site in a suburban setting; nearest residences are approximately 1,000 feet north of the site. A municipal sewer line (easement) bisects the CPS property from northeast to southwest. The Perth Amboy municipal water supply Runyon Supply Wells are located approximately 3,000 ft. southwest of CPS.

The exposure scenarios, including identified potential receptors, exposure media and routes of exposure, are described below and summarized in **Table 1-6**. **Table 1-6** also lists the data sets intended to be used to evaluate each route exposure scenario.

1.5.5 Potential Human Receptors

The 30-acre property as well as most of the surrounding area is zoned SD3, Specialized Development for industrial land use as part of the Township's long term development plan, and therefore it is unlikely that these areas will be used in the future for residential development. The former CPS Site was previously used for industrial purposes and although it is currently unused, it is likely that future use would be industrial. Future indoor industrial workers and outdoor commercial workers are potential future on-Site receptors. In addition, although a trespasser scenario is unlikely since the site is located in an industrial area and the closest major residential area is present at approximately ½ mile, we have conservatively assumed a nearby resident could trespass the Site. A construction worker scenario is also considered, as Site redevelopment is likely. Potential down gradient receptors include consumers of drinking water from the Runyon Well Field and visitors to Pricketts Brook and Pricketts Pond. The pond and brook are not used for recreational purposes and are not used directly for drinking water.

The portion of Pricketts Brook that is on the CPS and Madison Industries properties is on privately owned, fenced industrial property and is not accessible to the public. Recreational activity is not expected as public access is not allowed. Additionally, the brook is shallow, narrow, and intermittent, all of which would make Pricketts Brook an unlikely location for recreational use. A photograph log has been included as **Attachment E**, to further illustrate the conditions in Pricketts Brook and Pricketts Pond. Photographs 1 and 2 depict the condition of Pricketts Brook as it passes through the CPS property and Photographs 3 through 7 depict the condition of Pricketts Brook as it passes through the Madison Property. It should be noted that at the time of the site visit (October 2012), the brook ran dry at multiple locations on the Madison Property.

As Pricketts Brook leaves Madison Industries and travels towards Pricketts Pond, the brook is narrow (less than 10 feet wide) and shallow typically less than 1 foot deep. Additionally, Pricketts Brook is located in a heavily vegetated and/or heavily wooded area with limited access. Given the limited access and shallow nature of the brook, it is unlikely it would be used for recreational activities. Photographs 8 through 10 depict Pricketts Brook as it passes from the Madison property towards Pricketts Pond.

Pricketts Pond is located on property owned by Perth Amboy, and it is a recharge pond associated with the public water supply systems' Runyon Wellfield. The Runyon Watershed is fenced and has signs on the perimeter indicating the area is a watershed. While trespassing within the watershed is possible, it appears to be uncommon. If trespassers were to visit the Pond, incidental contact with surface water/sediment at the shore is theoretically possible. Although recreational use (boating, swimming) of Prickett's Pond is hypothetically possible, it is not known to be used for recreational purposes, and since it is a recharge pond for the public water supply, recreational use is not an expected future use. Prickett's Pond is remote from any residences or populated areas, and is not easily accessible. The water feature observed during the site visit would not support activities such as boating, fishing, swimming, or wading.

Photograph 11 through 15 depict conditions in Pricketts Pond. As is visible in the photographs, the heavily vegetated/wooded perimeter limit access to the pond, and conditions in the pond including algae and vegetation do not make the pond an attractive recreational feature.

The Runyon Well Field is used as a potable water supply. No receptors have been identified for Tennent Pond because it is located down gradient of the Well Field and has not been impacted by site-related contaminants.

Although there is no current or foreseeable future potable or non-potable use of groundwater at the CPS Property, we have conservatively planned to assess a drinking water scenario (ingestion, dermal contact, and inhalation of volatiles) for on-Site groundwater (see **Table 1-6**). There is a CEA in place at the CPS property that obviates the use of the groundwater as a drinking water source for as long as the CEA remains in place. The drinking water scenario is evaluated because site groundwater is within the zone of contribution of the Runyon wellfield, and because it will assist in guiding further cleanup decisions (remedial goals). As indicated in **Table 1-6**, the hypothetical future potable use of on-Site groundwater has been included as part of the exposure scenario for each of the on-Site receptors (except the trespasser and construction worker). This is an unlikely scenario, but has been included for completeness.

In summary, the following potential receptors were identified under current use:

- Trespasser (adolescent).

The current workers at the site can be considered remedial workers, and they are not typically evaluated in a baseline human health risk assessment. Their work is regulated under OSHA.

The following potential receptors were identified under foreseeable future use:

- Trespasser (adolescent),

- Outdoor Commercial/Industrial worker (adult),
- Indoor Commercial/Industrial worker (adult),
- Construction Worker (adult),
- Utility Worker (working on sewer line); and
- Hypothetical Resident (child and adult).

The human receptors that will be evaluated and the associated exposure assumptions are documented in **Tables 3-13** through **3-15** of this document **(**based on **RAGS Part D Table 4s)**.

1.5.6 Potential Exposure Media

Soils - Contaminants have been detected in shallow zone soils of the former CPS Site. Higher levels have historically been detected in the main processing area (Area 1) and low levels have been detected in the side lot (Area 3). Currently, the potential for direct contact with contaminated soils is limited since the impacted soils are generally beneath the site cover associated with Areas 1 and 2 (reinforced concrete pads, soil cement and asphalt). However, it is possible the cover will be removed and/or redevelopment will occur in the near future, and therefore, we plan to evaluate potential exposures to site soils (incidental ingestion and dermal contact as well as inhalation of soil-derived dust for outdoor workers and construction workers). Consistent with the USEPA's Regional Screening Level (RSL) tables, the soil to ambient air pathway (both via volatilization and via particulates) typically contributes minimally to overall risk (a "de minimus" pathway), compared to the contribution from the direct contact exposure pathways (incidental ingestion, dermal contact). Therefore, the soil to ambient air transport pathway (volatilization) will not be evaluated in this assessment.

Groundwater - Groundwater is not currently used on-Site for potable or other purposes. The on-going pump and treat system is the only current activity related to groundwater. Although there is no current or foreseeable future potable or non-potable use of groundwater at the CPS Property, we have conservatively planned to assess a drinking water scenario (ingestion, dermal contact, and inhalation of volatiles) for groundwater within the CPS Plume. The evaluation of the potable use scenario will utilize representative groundwater data within the footprint of the plume. The RI characterized the CPS/Madison plume and it is fully delineated by the existing well network both in terms of concentration magnitude and extent. Therefore for the purposes of this BHHRA it is appropriate to use the existing monitoring well database to define groundwater impact.

Future construction activities could require intrusive activities down to a depth of 10 ft below ground surface (bgs). During that work, construction workers may be exposed to groundwater via incidental ingestion, dermal contact, and inhalation of volatiles in groundwater.

Ambient Air Volatile Emissions - Volatile constituents that are present in soil and/or groundwater can be released to ambient air through volatilization. This medium, typically evaluated via use of fate and transport models applied to a soil and/or groundwater source concentration, will be evaluated for a construction worker and resident. Potential exposure to volatiles released from an excavation in a construction scenario is the most likely exposure scenario for the construction

worker receptor. Residential exposure to volatile emissions in ambient air would occur during showering situations.

Vapor Intrusion - Indoor Air is a separate exposure medium, as listed in **Table 1-6**, under Potential Future Use. The evaluation of the vapor intrusion pathway is discussed in Section 1.5.2.4 above. The findings indicate that the vapor intrusion pathway is unlikely occurring on-Site and there is insufficient data to determine if it is occurring off-Site (although even if the pathways exists, it is unlikely to result in actionable risks). As a conservative measure, we will evaluate the vapor intrusion pathway in this HHRA to document the potential risks associated with this exposure pathway.

Air Particulate Emissions - Constituents containing soil particulates could be transported to ambient air from wind erosion or construction activities. The majority of Areas 1 and 2 are covered by pavement rendering this pathway unlikely, for current scenario. This pathway is more likely during a future construction event or during future outdoor work, where particulates could be released to ambient air during excavation and digging.

Sediment and Surface Water - The on-site portion of Pricketts Brook is dry most of the year, such that exposure is unlikely and therefore on-site surface water and sediment within the brook will not be evaluated. The sediments and surface waters of Pricketts Pond and Pricketts Brook directly downgradient of the CPS Site are discharge areas for groundwater. Remedial investigation evaluations have shown that CPS-impacted groundwater discharging to surface water would not likely produce adverse impacts to human or aquatic receptors in the receiving water bodies (Refer to **Attachment C** for a copy of the groundwater / surface water interaction study). This BHHRA references the groundwater/surface water interaction study as the means of evaluating the potential risks associated with exposure to surface water in Pricketts Brook and Pricketts Pond. COI from the CPS Site are limited to VOCs, which would not be anticipated to accumulate in sediment. Therefore risks associated with exposure to sediment will not be evaluated.

1.5.7 Routes of Exposure per Identified Potential Receptor

An exposure pathway is the course a chemical takes from its source to the person being contacted. Exposure pathway analysis links the sources, locations, and types of environmental releases with population locations and activity patterns to determine the significant pathways of human exposure. Exposure pathways generally consist of four elements: (1) a source and mechanism of chemical release, (2) a retention or transport medium, (3) a point of potential human contact with the contaminated medium (known as the exposure point), and (4) an exposure route at the contact point (e.g., ingestion of soil, inhalation of vapors) (USEPA, 1989). For the exposure pathway to be considered potentially complete, all four elements must be present.

An exposure point (also called an exposure area or exposure unit) is a location within which an exposed receptor may reasonably be assumed to move at random and where contact with an environmental medium (e.g., soil) is equally likely at all sub-locations. In addition to the behavior of receptors, the existing pattern of chemical constituents in environmental media is also considered in identifying exposure areas. The identified current and future receptors, the assumption of random exposure within an exposure area, and the nature and extent of contamination have been considered in identifying exposure areas for the BHHRA. Important

factors in identifying the exposure areas at the Property include the current and anticipated future uses of the various areas of the Site. Therefore, the BHHRA exposure areas at the Site reflect current and future receptors and the current and future uses of the various areas within the Site.

Environmental media evaluated quantitatively for in this BHHRA (exposure media) include surface soil (and airborne dust), subsurface soil (and airborne dust), groundwater within the CPS Plume, shallow groundwater on the CPS property, groundwater discharging to surface water (screening evaluation only) and indoor air.

Exposure routes are the mechanisms by which people are exposed to environmental media. Exposure routes that are typically evaluated in environmental risk assessments include ingestion of the environmental medium, skin (dermal) contact with the environmental medium, and inhalation of outdoor or indoor air. In this BHHRA, incidental ingestion and dermal contact with soil is evaluated for all receptors and potential inhalation of soil-derived dust is evaluated for outdoor workers and construction workers only. Ingestion, dermal contact, and inhalation of volatiles associated with the use of groundwater as a potable water supply will be evaluated for a future indoor commercial/industrial worker, outdoor commercial/industrial worker, and resident. Ingestion, dermal contact, and inhalation of volatiles from shallow on-Site groundwater will be evaluated for a construction worker and utility worker. Inhalation of vapors potentially released during soil excavation activities into outdoor air for construction/excavation workers will be evaluated using a box model approach.

Groundwater discharging to surface water will be screened for COPCs and discussed qualitatively in the BHHRA with respect to potential surface water impacts. Surface water and sediment data will not be evaluated in the BHHRA. Those media will be evaluated in the risk assessments conducted for the Madison Site.

A summary of the receptors and exposure scenarios evaluated in the BHHRA is provided in **Table 1-6** and presented below.

<u>Trespasser</u> – Adolescent trespassers (assumed to be nearby residents) are not anticipated to come into contact with on-site groundwater, as there is currently no access to groundwater by trespassers, there is no current use of on-Site groundwater, and volatilization of VOCs from groundwater through subsurface soils to overlying ambient air is anticipated to be small or not a complete pathway.

Although Areas 1 and 2 are mostly covered with pavement, there are some areas of exposed soils where adolescent trespassers may come into contact with surface soil. Therefore, exposure to surface soil via incidental ingestion and dermal contact is conservatively assumed for a current trespasser.

Currently there is no access to subsurface soil for trespassers, however, if the site is redeveloped in the future, subsurface soil could be brought to the surface. Therefore, potential exposure to subsurface soil exposure may be a complete pathway in the future and includes incidental ingestion and dermal contact. Inhalation of particulates and volatiles from subsurface soils to overlying ambient air is anticipated to be minimal or not a complete pathway, and is not evaluated.

Exposure to surface water and sediment in the on-site portion of Pricketts Brook is not considered a complete pathway via incidental ingestion or dermal contact because this portion of the brook is dry most of the year.

Exposure to surface water and sediment in the off-site portion of Pricketts Brook is not considered because the Groundwater/Surface Water Interaction Evaluation (discussed in Section 3.2.3 of the RI (BASF, 2013) concluded that these media are not of concern. The RI (BASF, 2013) concluded that groundwater to surface water migration is the only possible exposure pathway and that groundwater concentrations were below relevant human health risk surface water screening values) and this exposure pathway is considered incomplete.

Future Outdoor Commercial/Industrial Worker - An outdoor commercial/industrial worker is not expected to be exposed to surface soil via incidental ingestion, dermal contact, or inhalation of particulates or volatiles under current conditions, as the site is not currently in use. However, it is possible the site will be used in the future and that pavement and structures could be removed. Therefore, it is assumed that a future outdoor commercial/industrial worker may come into contact with surface soil via incidental ingestion, dermal contact, and inhalation of particulates.

Currently there is no exposure to subsurface soil for an outdoor commercial/industrial worker because the site is not in use. Even if the site were currently in use, an outdoor worker's activities would be limited to the ground surface precluding subsurface exposure. However, if the site is redeveloped in the future, subsurface soil could be brought to the surface and potential future exposure pathways would include incidental ingestion, dermal contact, and inhalation of particulates. Inhalation of volatiles from subsurface soils to overlying ambient air is anticipated to be small or not a complete pathway, and is not evaluated.

There is currently no use of groundwater at the Site. An on-Site groundwater potable use scenario will be evaluated for the future outdoor commercial/industrial worker.

Future Indoor Commercial/Industrial Worker - An indoor commercial/industrial worker is not expected to be exposed to surface or subsurface soil as the indoor worker is assumed to spend all day indoors; however because USEPA guidance for the indoor worker assumes some contact with soil, we plan to evaluate potential soil exposures via incidental ingestion, dermal contact, and inhalation of particulates as a foreseeable future use scenario assuming the site is redeveloped and indoor workers are present.

Inhalation of volatiles in indoor air is not considered a substantial complete exposure pathway for current or future indoor commercial/industrial workers as the vapor intrusion investigations/evaluations conducted both on-site and off-site indicated that the subsurface to indoor air pathway is not complete. However, the vapor intrusion evaluations focused on existing buildings. It is recognized that subsurface conditions differ and that it is possible a future building could be constructed elsewhere on the property. An on-Site groundwater potable use scenario will be evaluated for the future indoor commercial/industrial worker.

Future Construction Worker - It is assumed that an adult construction worker may come into contact with both surface and subsurface soil at Areas 1, 2, and 3 (each exposure point will be evaluated separately) via incidental ingestion, dermal contact, and inhalation of particulates if

excavation were to take place in the future. During an excavation a construction worker may also come into contact with shallow groundwater via incidental ingestion and dermal contact, as well as inhalation of volatiles.

Future Utility Worker - It is assumed that a utility worker may come into contact with both surface and subsurface soil in the vicinity of the sewer line that traverses the Site via incidental ingestion, dermal contact, and inhalation of. During work, a utility worker may also come into contact with shallow groundwater via incidental ingestion, dermal contact, and inhalation of volatiles.

Hypothetical Future Resident – For a hypothetical future residential use, potential exposure pathways to soil may include incidental ingestion and dermal contact. Although this scenario is not considered a realistic future use, it is evaluated for the purpose of determining the need for institutional controls and/or further remediation. An on-Site groundwater potable use scenario will be evaluated for the hypothetical future resident.

2.0 DATA EVALUATION AND IDENTIFICATION OF CHEMICALS OF POTENTIAL CONCERN

The data evaluation and selection of COPCs described in this section includes the following components:

- Summary of media and areas associated with the CPS facility that have been investigated and that are evaluated in the BHHRA;
- Identification of available analytical data relevant to the BHHRA;
- Identification of data representative and not representative of current and future conditions at the Site;
- Summary of data quality, with an emphasis on potential limitations that could introduce uncertainty into the risk assessment;
- Summarization of analytical data for each medium evaluated in the BHHRA;
- Methods used to group and summarize data for use in the risk assessment; and
- Selection of COPCs for each medium.

Section 2.1 is a summary of data collected and considered for use in this BHHRA. Section 2.2 is a general discussion of data evaluation methods. Section 2.3 documents the data evaluation and selection of COPCs. **Attachment A** identifies and documents the analytical data selected for use in the BHHRA.

2.1 Data Collection Summary

Analytical data considered (but not necessarily selected) for the BHHRA includes the following:

- Soil analytical data collected between January 1992 and September 2012. Soil data has been collected for VOCs, SVOCs, and metals.
- Groundwater analytical data collected between April 1987 and September 2012. Groundwater analytical data has been collected for VOCs, SVOCs, pesticides/polychlorinated biphenyls (PCBs), total metals, dissolved metals, inorganics, dissolved gases, and TPH. Most recent analytical results for groundwater have generally been selected for use in the risk assessment.
- Analytical groundwater data collected during the December 2010 groundwater / surface water interaction study (included as **Attachment C**). As this evaluation was used to evaluate potential risks associated with surface water, only those locations where it was concluded that groundwater is upwelling or discharging to surface water were considered in this BHHRA.
- On-site soil gas and indoor air samples collected in September 2009 collected as part of the on-site vapor intrusion investigation. Off-site soil gas samples collected in September 2009 as part of the off-site vapor intrusion investigation.

The entire body of available medium-specific analytical laboratory data for soil, groundwater, groundwater discharging to surface water, soil gas, and indoor air has been evaluated to determine the subsets of data that are appropriate to characterize human health risks for current and foreseeable future land uses. To facilitate this analysis, a comprehensive database was developed and maintained, and it is included as part of the Remedial Investigation Report.

2.2 General Data Evaluation Considerations

Overall, the data evaluation and selection of data for use in the BHHRA have been conducted to identify data that are: (1) representative of existing soils, groundwater, groundwater discharging to surface water, and indoor air conditions; and (2) "usable" (that is, of sufficient quality) for BHHRA purposes.

2.2.1 Representative Data

Data associated with soil samples inaccessible to human receptors (such as deep subsurface soils greater than 10 ft bgs) have been excluded from the BHHRA. Soil data that are considered "representative of current conditions" are those associated with samples that were collected from media that remain at the Site and there is no reason to believe that detected compounds and associated concentrations have changed substantially since the time of sample collection. Conditions in transient media, such as groundwater, may vary over time, and recent sample data may be more appropriate for evaluating risks rather than historical data.

Therefore, the analytical data for soil, groundwater, and soil gas were evaluated to identify the data that are representative of current and foreseeable conditions at the Site.

2.2.2 Usable Data for Human Health Risk Assessment Purposes

USEPA risk assessment guidance (USEPA, 1989) discusses usability of data for risk assessment purposes and identifies several factors to be evaluated when determining data usability, including:

- Accepted or approved analytical methods;
- Reporting limits sufficient to identify concentrations of potential concern;
- Data validation that addresses precision, accuracy, repeatability, completeness, and comparability (PARCCs criteria) of the laboratory analytical data.

The data sets to be used in the BHHRA have been identified based on their representative nature and usability as outlined above. The data have been summarized by media, and COPCs selected, as described in the following subsections.

2.3 Data Evaluation and Selection of COPCs

The available analytical data for soil, groundwater, groundwater discharging to surface water, and indoor air have been compiled and evaluated in a manner consistent with Sections 2.2.1 and 2.2.2 to select the data to be used in the BHHRA. Subsequently, COPCs have been selected for each

of the environmental media. The following subsections document the data evaluation and selection of COPCs for this BHHRA.

2.3.1 Data Evaluation and Representative Data

The data evaluation, which included data validation, for the Site data was performed as part of the RI process; refer to the RI (BASF, 2013) for a discussion of the data evaluation. All soil laboratory analytical data included in the database for the Site were considered representative of conditions at the Site with the exception of the following:

- Analytical data associated with deep subsurface soil samples (top depth greater than 10 ft bgs) have not been included in the dataset used for the BHHRA because those deep soils are not accessible for current or foreseeable receptors.
- A total of 67 of the 113 detected analytes in on-Site soils (Areas 1 through 3 from 0 to 10 ft bgs) have at a minimum one non-detect result where no reporting limit was listed in the database. A "0" was listed in reporting limit field in the database when this occurred. These "0"s were not included in the exposure point concentration (EPC) calculations in this BHHRA; The "0"s are simply placeholders and do not have any meaning with respect to the data. It should be noted that these "0"s were retained as 'not detected' in the COPC selection tables, so that the frequency of detection represents the actual number of samples that were analytes. However, it should be noted that the inclusion of these "0"s does not affect the COPC selection process as they represent non-detect values.
- Two soil samples had entries for both initial analyses and analyses on dilution. Typically, data validation qualifiers would "reject" one set of results, so that there is one set of results associated with the sample. It appears that this did not occur for two samples in the database (GP-2 and GP-3). Therefore, the results for reanalysis on dilution was used in the BHHRA for those analytes that exceeded the calibration standard in the initial analysis.
- QA/QC samples, including field duplicates, have not been included in the BHHRA dataset. The corresponding field samples are considered representative of site conditions. The QA/QC samples were used exclusively for data validation purposes.

With the exception of the bulleted items above, the analytical data presented in the RI Report and contained within the Site database were considered for inclusion in this BHHRA. For groundwater, the most recent analytical data have generally been selected for use in the risk assessment. The following Sections document which groups of samples were considered for COPC selection and EPC calculations. These decisions were made based on which data were considered representative of Site conditions and appropriate for use in the BHHRA.

2.3.2 Selection of Chemicals of Potential Concern

The risk assessment dataset derived through the data evaluation process described above was utilized to produce subsets of data to be used for selecting COPCs for the following media:

- Soils in Areas 1, 2, and 3 from 0 to 10 feet below ground surface (ft bgs) (**Tables 2-1 through 2-3**).

- The most recent groundwater results, by parameter, from monitoring well locations within the CPS Plume (**Table 2-4).**
- Groundwater analytical data obtained from the groundwater to surface water interaction study (included as **Attachment C**). Only those locations where it was concluded that groundwater is upwelling or discharging to surface water were considered in this BHHRA and only volatile constituents were considered. (**Table 2-5**)
- Analytical results from the one round of Indoor Air sampling performed in September of 2009 (**Table 2-6)**

Tables 2-1 through **2-6** are 'RAGS Part D Table 2's' that provide summaries of the risk assessment data for Site media and that also document the selection of COPCs. **Tables 2-1** through **2-6** utilize the following descriptors to summarize the data sets:

- Frequency of detection (number of positively detected results/total number of results)
- Range of reporting limits (SQLs) for non-detects
- Range of detected concentrations
- Data qualifier associated with each maximum detected concentration
- Sample location associated with each maximum detected concentration

The chemicals considered to be likely to pose more than a *de minimis* level of risk are identified through the COPC selection process, and subsequently included in the quantitative BHHRA. The COPCs are selected by reducing the number of chemicals to be considered by applying a concentration/toxicity screen and by eliminating essential nutrients. The procedure used to select COPCs for the HHRA is summarized as follows.

A. Concentration-Toxicity Screening

- Selected as a COPC in soil if the maximum detected concentration is greater than the USEPA RSL (adjusted) for residential soils (USEPA, 2013b).
- Selected as a COPC in groundwater if the maximum detected concentration is greater than the USEPA RSL (adjusted) for tap water (USEPA, 2013b).
- Selected as a COPC in groundwater discharging to surface water if the maximum detected concentration is greater than the USEPA RSL (adjusted) for tap water (USEPA, 2013b).
- Selected as a COPC in Indoor Air if the maximum detected concentration is greater than the USEPA RSL (adjusted) for residential indoor air (USEPA, 2013b).
- Chemicals for which no screening value is available are retained as COPCs unless they are essential nutrients.

The RSLs for soil address direct contact (ingestion and dermal contact) exposures, as well as inhalation of constituents that may be released to air. The published RSLs have been derived as the lower of the concentration associated with a cancer risk of 1 in 1 million ($1x10^{-6}$) and the concentration associated with a non-cancer hazard quotient (HQ) of 1. The published RSLs have

been adjusted for use in the risk-based screening step. The adjusted RSL used for that purpose is the lower of the concentration associated with a cancer risk $1x10^{-6}$ and the concentration associated with a non-cancer HQ of 0.1. The use of tap water RSLs to identify COPCs in groundwater discharging to surface water is a very conservative (health-protective) approach; the surface water in Pricketts Brook is not a drinking water resource and would not be expected to be a drinking water resource in the future.

B. Additional Considerations:

The following additional guidelines are used for COPC selection:

- A parameter is not selected as a COPC if it is considered an essential human nutrient. The following inorganic analytes are considered essential human nutrients: calcium, magnesium, potassium, and sodium. Several other constituents are also considered to be essential human nutrients (e.g., iron, selenium), but could also pose toxicity at elevated concentrations and were therefore were not eliminated from the list of COPCs based on essential nutrient status alone.

The results of the COPC selection for each data set are provided in **Tables 2-1** through **2-6**. The following notes are used in those tables to denote the reasons for selection or exclusion of analytes as COPCs:

ASL: Concentration used for COPC screening (maximum detected concentration) is greater than the risk-based screening value; the analyte is selected as a COPC.

BSL: The concentration used for COPC screening (the maximum detected concentration) is less than the risk-based screening value; the analyte is therefore not selected as a COPC.

FOD: The frequency of detection is below 5% and the maximum detected concentration is low: the analyte is therefore not selected as a COPC.

NSL: There is no risk-based screening value available; the analyte is selected as a COPC.

E: The analyte is an essential nutrient, and is therefore not selected as a COPC.

The results of the COPC selection are identified below, by medium, and are summarized in **Table 2-7.**

- COPCs in surface and subsurface soil in Areas 1, 2, and 3 include 1,1,2,2-tetrachloroethane, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2-cis-dichloroethylene, 1,2-dichlorobenzene, 1,2-dichloroethane, 1,3-dichlorobenzene, 1,4-dichlorobenzene, benzene, chlorobenzene, methyl-cyclohexane, ethylbenzene, methylene chloride, o-xylene, p-isopropyltoluene, tetrachloroethylene, toluene, trichloroethylene, total xylenes, 1,2,4-trichlorobenzene, 2-methylnaphthalene, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, biphenyl, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, aluminum, antimony,

arsenic, cobalt, copper, iron, manganese, mercury, thallium, and vanadium (**Tables 2-1 through 2-3**).

- COPCs in groundwater within the CPS Plume include 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,2-cis-dichloroethylene, 1,2-dichlorobenzene, 1,2-dichloroethane, 1,2-dichloroethylene, 1,2-trans-dichloroethylene, 1,3,5-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1-chlorobutane, 2-chlorotoluene, 3-methyl hexane, benzene, chlorobenzene, chloroform, methyl-cyclohexane, dimethylsulfide, ethylbenzene, m+p-xylene, methylene chloride, methyl-t-butyl ether, naphthalene, o-xylene, p-chlorotoluene, p-isopropyltoluene, sulfur dioxide, t-butyl alcohol, tetrachloroethylene, toluene, trichloroethylene, vinyl chloride, total xylenes, 1,4-dioxane, 2,4-dimethylphenol, 2-methylnaphthalene, 3-nitroaniline, aniline, biphenyl, bis(2-ethylhexyl)phthalate, aldrin, heptachlor epoxide, aluminum, arsenic, antimony,. barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, silver, thallium, vanadium, and zinc. (**Table 2-4**). Although groundwater within the CPS Plume encompasses groundwater off of the CPS Property, a separate COPC screening was not performed for on-Site CPS Groundwater to be used in the construction worker evaluation. This COPC screening encompasses the source area, and thus provides a conservative list of COPCs to evaluate for all groundwater in this BHHRA.
- COPCs identified in groundwater discharging to surface water include 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,2-dichloroethane, 1,3-dichlorobenzene, 1,4-dichlorobenzene, benzene, methyl-t-butyl ether, t-butyl alcohol, trichloroethylene, and vinyl chloride. (**Table 2-5)**. It should be noted that further evaluation of this media will not be performed In this BHHRA. As described above, surface water exposure is not anticipated under current or future Site use. The findings of this COPC selection and a qualitative evaluation of potential exposure to surface water will be discussed in this risk assessment section of this BHHRA.
- Indoor Air: COPCs in indoor air include 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2,2,4-trimethylpentane, 4-ethyltoluene (p-ethyltoluene), benzene, ethanol, ethyl acetate, and n-heptane (**Table 2-6**).

All chemicals that were retained as COPCs were detected at maximum concentrations greater than the appropriate screening values (adjusted RSLs) if RSLs (or alternate values) were available. However, no RSL values were available for detected parameters 1,3-dichlorobenzene, methyl-cyclohexane, p-isopropyltoluene, t-butyl alcohol, 3-nitroaniline, carbazole, 3-methyl hexane, dimethyl sulfide, sulfur dioxide, and lead. Consequently, all of these parameters were selected as COPCs in one or more media with the exception of 3-nitroaniline and carbazole as they were eliminated due to low frequency of detection.

The final list of COPCs by media is presented in **Table 2-7**.

3.0 EXPOSURE ASSESSMENT

The condition of a chemical contacting the outer boundary of a human is exposure. Most of the time, the chemical is contained in air, water, soil, a product, or a transport or carrier medium; the chemical concentration at the point of contact is the exposure concentration. An exposure assessment is the quantitative or qualitative evaluation of that contact; it describes the intensity, frequency, and duration of contact, and often evaluates the rates at which the chemical crosses the boundary (chemical intake or uptake rates), the route by which it crosses the boundary (exposure route; e.g., dermal, oral, or respiratory), and the resulting amount of the chemical that actually crosses the boundary (a dose) and the amount absorbed (internal dose).

The objective of the exposure assessment is to estimate the type and magnitude of exposures to COPCs at or migrating from the Site. The exposure assessment includes the following components:

- Characterization of the exposure setting (including current and future land uses);
- Identification of exposure pathways (including receptor identification and exposure scenarios, and exposure points);
- Identification of EPCs;
- Quantification of exposures; and
- A summary of exposures by receptor and exposure point.

This section is organized to follow the bullets above (the sub-headings match the bullets above).

3.1 Exposure Setting

The exposure setting, including current and anticipated future land use at the property has been described in detail in Section 1.5.4 and in the CSM presented in Section 1.5. As described in these Sections, the property is commercial/industrial property with limited access.

3.2 Exposure Pathways

The following Sections identify the exposure pathways including receptors, exposure scenarios, and exposure areas.

3.2.1 Receptor Identification

Based on the current and assumed future land uses for the former CPS Property and the remainder of the CPS/Madison Superfund Site, receptors evaluated include a trespasser (on-Property surface and surface and subsurface soil), an outdoor commercial/industrial worker (on-Property surface and subsurface soil and groundwater), an indoor commercial/industrial worker (on-Property surface and subsurface soil and groundwater potable use and vapor intrusion and

at the Madison Industries Property for groundwater vapor intrusion), a construction worker (surface and subsurface soil and groundwater), a utility worker, and a hypothetical resident (surface and subsurface soil and groundwater).

3.2.2 Exposure Scenarios

Exposure scenarios are used to quantitatively describe the COPC exposures that could theoretically occur for each land use and exposure pathway evaluated. The exposure scenarios are used in conjunction with EPCs to derive quantitative estimates of COPC intake or exposure. The ultimate goal of developing exposure scenarios, as defined in USEPA guidance, is to identify the combination of exposure parameters that results in the most intense level of exposure that may "reasonably" be expected to occur under the current and future site conditions (USEPA, 1989). As such, a single exposure scenario is often selected to provide a conservative evaluation for the range of possible receptors and populations that could be exposed at the Site for a given land use. For example, when evaluating a theoretical residential land use, a residential scenario that is modeled to be protective for the children and adults who live at the residence (i.e., people who are there all the time) is assumed to be protective for all other receptor populations (such as friends, neighbors, and landscaper workers) and, therefore, it unnecessary to also evaluate those other, less-exposed, receptor populations.

The basis for the exposure scenarios that are used to evaluate health risks associated with the potentially complete exposure pathways under current and possible future land use conditions were described in Section 1.5.5, which identified receptors, and Section 1.5.6, which identified exposure media, and are summarized below:

- Trespasser: The former CPS Property is fenced; it is located in an industrial area. A trespasser would need to travel on roads through a heavily industrialized area at least one-half mile from the nearest residence to engage in trespassing activity. Thus, this BHHRA will evaluate risk posed to an adolescent trespasser (age range 12-<18 years old) and an adult trespasser (18-<30 years old), as a younger child is unlikely to engage in these activities. As indicated above, existing conditions make trespassing on a frequent basis unlikely. None-the-less, as directed by USEPA, an exposure frequency of 52 days per year was selected for the trespasser scenario. This scenario evaluates potential ingestion and dermal exposures to surface soil (0-2 ft bgs) at Area 1, Area 2, and Area 3 for current exposures. This scenario evaluates potential ingestion and dermal exposures to combined surface/subsurface soil (0-10 ft bgs) at Area 1, Area 2, and Area 3 for future exposures.
- Outdoor worker: The former CPS Property may be redeveloped for industrial use in the foreseeable future. This is a long-term receptor exposed during the work day who is a full-time employee of a company operating on-Property and who spends most of the workday conducting maintenance activities outdoors. The activities for this receptor (e.g., moderate digging, landscaping) typically involve on-Site exposures to surface soils. The worker is assumed to be exposed to contaminants via the following pathways: incidental ingestion of soil, dermal absorption of contaminants from soil, and inhalation of soil-derived fugitive dust. This scenario evaluates potential ingestion, dermal, and inhalation of particulates and assumes exposure to surface (0-2 ft bgs) and subsurface soil (0-10 ft

bgs) at Area 1, Area 2, and Area 3. Additionally, this receptor is evaluated for limited ingestion of groundwater from the CPS/Madison Plume (consistent with hypothetical potable use of groundwater). The outdoor worker would not be expected to have any future dermal or inhalation exposures associated with groundwater.

- Indoor worker: The former CPS Property may be redeveloped for industrial use in the foreseeable future. This receptor spends most, if not all, of the workday indoors; therefore exposure to soil is limited. However, per USEPA guidance, some exposure to soil is assumed. The indoor commercial/industrial worker is assumed to be exposed to soils via incidental ingestion of soil and dermal absorption of contaminants from soil. This scenario evaluates potential ingestion and dermal exposures to surface (0-2 ft bgs) and combined surface/subsurface soil (0-10 ft bgs) at Area 1, Area 2, and Area 3 for future exposures. . Additionally, this receptor is evaluated for limited ingestion of groundwater within the CPS/Madison Plume (consistent with hypothetical potable use of groundwater). Also, vapor intrusion from shallow groundwater has been evaluated for this receptor.
- Construction and excavation workers who develop the former CPS Property, or who may perform additional building construction (e.g., building additions) after initial development. This receptor is assumed to be exposed to contaminants via the following pathways: incidental ingestion of soil, dermal contact with soil, and inhalation of fugitive dust. This scenario evaluates potential ingestion, dermal, and inhalation of particulate exposures to combined surface/subsurface soil (0-10 ft bgs) at Area 1, Area 2, and Area 3 for future exposures. Additionally, this receptor could be exposed to shallow groundwater at the former CPS Property. This receptor is evaluated for limited incidental groundwater ingestion, dermal contact with groundwater, and inhalation of volatiles released from shallow groundwater during excavation activities within Area 1, Area 2, and Area 3.
- A construction/utility worker is assumed to be exposed to contaminants via the following pathways: incidental ingestion of soil, dermal contact with soil, and inhalation of fugitive dust. This scenario evaluates potential ingestion and dermal exposures to soil (0-10 ft bgs) within the sewer line exposure area. Additionally, this receptor is evaluated for limited incidental ingestion of shallow groundwater, dermal contact with groundwater, and inhalation of volatiles potentially released from shallow groundwater within the vicinity of the sewer line.
- A hypothetical future resident scenario for the former CPS Property evaluates a child and adult assuming the property is redeveloped as a residence in the future. This scenario evaluates potential ingestion and dermal exposures to surface (0-2 ft bgs) and combined surface/subsurface soil (0-10 ft bgs) within Area 1, Area 2, and Area 3. Additionally, this hypothetical receptor is assumed to be exposed to groundwater within the CPS/Madison Plume used for potable purposes (ingestion, dermal contact, and inhalation of volatiles released during showering.

Exposures to COPCs are quantified by using numerical parameters that include ingestion rates, dermal contact areas, body weights, exposure times, exposure frequencies, and exposure durations, which are defined below. These parameters and the sources of their values are documented in **Tables 3-13** through **3-15**. The specific numerical values for each of these parameters are selected in consideration of the receptor activities and ages that the exposure

scenarios are modeling, and are generally selected as the upper-end (generally 95th percentile) values for each quantitative parameter. Using receptor scenarios that are protective for all potentially exposed populations associated with a given land use, with numerical parameters that are generally based on the upper-end distributions, results in exposure scenarios are referred to as the Reasonable Maximum Exposure (RME). Exposure parameters are developed from USEPA national guidance (USEPA, 1997a; 1994; 2002a; 2002b; 2004; 2011). The exposure parameters used to quantify exposures for each of the scenarios described in this section are provided in RAGS Part D 'Tables 4's, which are presented as **Tables 3-13** through **3-15**. These Tables provide a summary of the exposure scenarios and key exposure parameters that are used to quantify COPC exposures at each of the EAs. For this BHHRA, the showering/bathing exposure will be evaluated using the Andelman as modified by Schaum et. al. shower model (Schaum et. al., 1994).

3.2.3 Exposure Areas (EA)

The exposure media evaluated quantitatively in the BHHRA include surface soil, subsurface soil, groundwater within the CPS plume, on-Site shallow groundwater, and indoor air.

EAs have been identified based on the current and foreseeable future land uses and activities and physical characteristics of the former CPS Property. The soil exposure areas have been identified as Area 1, Area 2, Area 3, and Soils within the Sewer Line Area. Within the soil exposure areas, various depth intervals were considered for different receptors (further explained below). The groundwater exposure areas have been identified as within the VOC and metals Plume, and Area 1, Area 2, Area 3. **Figure 1-3** depicts the former CPS Property exposure areas, **Figure 1-6** depicts the soil sampling locations within each exposure area, **Figure 1-7** depicts soil vapor and indoor air sampling locations, **Figure 1-8** depicts the shallow groundwater sampling locations within each exposure area (considered in the vapor intrusion assessment and the construction worker scenario), and **Figure 1-9** depicts the CPS / Madison Superfund Site monitoring well locations..

Each exposure area identified above is further described below. Within each exposure area, a summary of the datasets used to evaluate individual exposure points is presented as well:

- Area 1 – This exposure area consists of the location where chemical processing operations occurred. This area is located hydraulically downgradient of Areas 2 and 3. Within Area 1 the following exposure points will be evaluated:
  - Surface Soils (Area 1 soils between 0 to 2 ft bgs)
  - Surface and Subsurface Soils (Area 1 soils between 0 to 10 ft bgs)
  - Groundwater (Area 1 shallow groundwater)
- Area 2 – This exposure area consists of the locations associated with support activities, including a laboratory, office space, and storage facilities. Within Area 2 the following exposure points were evaluated:
  - Surface Soils (Area 2 soils between 0 to 2 ft bgs)
  - Surface and Subsurface Soils (Area 2 soils between 0 to 10 ft bgs)

  - Groundwater (Area 2 shallow groundwater)
- Area 3 – This exposure area consists of the undeveloped side-lot that has never been used for production activities. Within Area 3 the following exposure points were evaluated:
  - Surface Soils (Area 3 soils between 0 to 2 ft bgs)
  - Surface and Subsurface Soils (Area 3 soils between 0 to 10 ft bgs)
  - Groundwater (Area 3 shallow groundwater)
- Sewer Line Area – This exposure area consists of soils in the vicinity of the sewer line that traverses the CPS Site. Soils that fall within 5 feet on either side of the Sewer Line could be considered representative of soils that a worker performing maintenance on the sewer line could contact. However, due to the limited dataset within that area, this area was expanded to 10 feet on either side of the Sewer Line. Refer to **Figure 1-6** for the sewer line location. Similarly, soils that are located between 0 to 6 ft bgs in depth would typically be considered representative of soil that a worker performing maintenance of the sewer line could contact. However, due to the limited dataset within that depth interval, soils within 0 to 10 ft bgs were considered for this exposure point.
- CPS/Madison Plume – This exposure area consists of groundwater representative of current conditions within the CPS/Madison Plume. The RI characterized the CPS/Madison plume, and it is fully delineated by the existing well network both in terms of concentration magnitude and extent. Given that groundwater concentrations fluctuate, and those at the former CPS Property have been decreasing over time, recent validated groundwater concentrations were considered. Additionally, only groundwater data collected from monitoring wells or extraction wells was considered representative of this exposure point. Thus, the most recent groundwater data (by parameter) collected from a monitoring well within the CPS/Madison Plume was considered for this exposure point. While dissolved metals data are generally representative of the concentrations that a receptor would be exposed to from a potable water supply (potable groundwater would be filtered as part of treatment prior to use) the most recent total metals data were selected. The risk assessment represents a conservative estimate of exposure to groundwater.

Table 1-6 provides a summary of the receptors and exposure scenarios evaluated in the BHHRA.

3.2.4 Incomplete Exposure Pathways

The RI data collected to date suggest that exposure to surface water and sediment and volatiles in indoor air as a result of vapor intrusion are not complete. COPCs were screened for volatile constituents in groundwater discharging to surface water. The results of the COPC screening will be used to support a qualitative discussion regarding exposure to surface water. Sediment will not be evaluated in this BHHRA, as volatiles are the COI for the Site and are not anticipated to accumulate in sediment. Additionally, minimal exposure to sediment both on- or off-Site is anticipated.

Using multiple lines of evidence, the vapor intrusion pathway was determined to be incomplete.

3.3 Exposure Point Concentrations (EPCs)

The USEPA defines the EPC as the representative medium-specific chemical concentration a receptor may contact at an exposure point over the exposure period (USEPA, 1989). Separate EPCs are calculated for each exposure medium at each exposure point. The typical concept of human exposure within a defined exposure area is that an individual contacts the contaminated medium on a periodic and random basis. Because of the repeated nature of such contact, the human exposure does not really occur at a fixed point but rather at a variety of points with equal likelihood that any given point within the exposure area will be the contact location on any given day. Thus, exposure areas were identified considering the likelihood of a receptor contacting all areas within the exposure area with equal probability, as reflected in EPCs based on arithmetic averages of the chemical concentrations within the exposure area. However, to account for uncertainty in estimating the arithmetic mean concentration, the USEPA recommends that an UCL on the mean be used to represent the EPC.

In accordance with USEPA guidance, Reasonable Maximum Exposure (RME) EPCs are based on the lower of the 95 percent UCL on the arithmetic mean concentration (95% UCL value) or the maximum detected concentration in the data set (USEPA, 2002b).

The 95% UCL values are calculated using the ProUCL software (Version 5.0, USEPA, 2010). The ProUCL software performs a goodness-of-fit test for data sets with or without non-detects to identify the distribution type for the data set (e.g., normal, lognormal, gamma, or non-discernable), and then calculates a conservative and stable 95 percent UCL value in accordance with the framework described in “Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites” (USEPA, 2002b). The software includes numerous algorithms for calculating 95% UCL values, and provides a recommended UCL value based on the algorithm that is most applicable to the statistical nature of the data set.

EPCs were calculated as follows for each exposure point within each exposure area. All EPCs are identified in ‘RAGS Part D Table 3s’:

- **Table 3-1**, **3-2**, and **3-3** present the calculation of EPCs for surface soils (0-2 ft bgs) within Areas 1, 2, and 3, respectively. These exposure points will be used to evaluate risk to a current trespasser exposed to each individual exposure area. The EPCs for these exposure points are based on the lower of the 95% UCL and the maximum detected concentrations. For Area 2, the 95% UCLs for benzene and tetrachloroethylene were lower than the arithmetic mean (raising questions about the validity of the calculated upper confidence limit on that mean); for these two analytes, the maximum detected concentrations were selected as the EPCs in lieu of the 95% UCL. When all analytical results were non-detect, an EPC was not calculated.
- **Table 3-4**, **3-5**, and **3-6** present the calculation of EPCs for combined soils (0-10 ft bgs) within Areas 1, 2, and 3, respectively. These exposure points will be used to evaluate risk to a future commercial/industrial worker exposed to each individual exposure area. This depth interval was selected as it accounts for the possibility of moving soils from the subsurface to the surface under a future scenario. The EPCs for these exposure points are based on the lower of the 95% UCL and the maximum detected concentrations. When

all analytical results were non-detect, an EPC was not calculated. Additionally, p-isopropyltoluene was not analyzed in the dataset for Area 3; thus, an EPC was not calculated.

- **Table 3-7** presents the calculation of EPCs for soils within the Sewer Line Exposure Area. The depth of soils considered in this exposure area is 0 to 10 ft bgs. This exposure point is evaluated to address exposure to a utility worker performing maintenance on the Sewer Line. Due to the limited soil data within this exposure point, the EPCs are equal to the maximum detected concentrations within the exposure point. When all analytical results were non-detect, an EPC was not calculated.
- **Table 3-8** presents the calculation of EPCs for groundwater within the CPS/Madison Plume. The EPCs for these exposure points are based on the lower of the 95% UCL and the maximum detected concentrations. When 95% UCLs could not be calculated due to a limited dataset, the maximum detected concentration was selected as the EPC. Additionally, as a conservative measure, total metals concentrations were used to calculate EPCs.
- **Table 3-9, 3-10, and 3-11** present the calculation of EPCs for shallow groundwater within Areas 1, 2, and 3, respectively. These exposure points will be used to evaluate exposure to a construction worker performing work in each individual exposure area. Due to a limited data set, 95% UCLs were not calculated. Instead, maximum detected concentrations were selected as EPCs. When an analyte was not-detected in an Area, no EPC was identified.
- **Table 3-12** presents the calculation of EPCs for indoor air at the former CPS Property (Area 2 vacant building). This exposure point will be used to evaluate an indoor worker's exposure to indoor air. Due to a limited data set (small number of samples), 95% UCLs were not calculated. Instead, maximum detected concentrations were selected as EPCs.
- **Table 3-16** presents the calculation of the volatilization factor for the release of vapors from shallow groundwater in an excavation to ambient air in a trench for a construction worker. **Tables 3-17, 3-18, and 3-19** present the ambient air concentrations in a trench for areas 1, 2, and 3 respectively.

Attachment A presents the analytical data considered for each of these exposure points. ProUCL output sheets are provided in **Attachment F**.

EPCs may be based on COPC concentrations that are directly measured, or on COPC concentrations that are estimated via modeling. EPCs that are used to quantify ingestion and dermal contact exposures are based on measured concentration data. Since the true exposure medium for evaluation of inhalation exposures is air, and limited analytical data for air were collected, EPCs that are used to evaluate inhalation exposures will be modeled from source media concentrations. Inhalation exposure to soil-derived dust will be evaluated for outdoor workers and construction workers. The source media for dust is soil, and the soil EPCs are used as the 'source' concentrations for estimating dust-associated COPC concentrations in air.

3.4 Exposure Quantification

The calculation of cancer risk and non-cancer HQs requires the quantification of exposure (either as a dose (or intake) or as a representative concentration). Exposures to COPCs are quantified by calculating COPC-specific doses (or intakes) (ingestion and dermal contact) or representative concentrations (air/inhalation exposures) for the receptors at the various exposure points or exposure areas for current and possible future land uses. This section describes the process that is used to quantify COPC exposure for ingestion and dermal contact with soil, groundwater, indoor air, and for soil-related dust. The quantification of exposures is based on the specifics of the exposure scenarios for the receptors evaluated.

Exposures are quantified in two major ways – via the calculation of a daily intake (oral and dermal exposures) or by calculating a representative exposure concentration (inhalation).

By combining the EPC and the receptor exposure parameters, the daily dose (soil, surface water, sediment) or representative exposure concentration (air) is calculated. Those measures of exposure are subsequently used with toxicity values to characterize health risks.

Fundamentally, the calculated dose/intake is a function of EPC and exposure parameters:

Dose/Intake = (EPC) x (Exposure Parameters)

For ingestion and dermal exposure routes, the general equation for calculating intake is as follows:

$$Dose = \frac{EPC \times CR \times EF \times ED}{AT \times BW}$$

Where:

Dose	=	Average daily dose of COPC from soil at the exposure point during the period of exposure (mg/kg/day)
EPC	=	Exposure Point Concentration (mg/kg or mg/L)
CR	=	Contact Rate (mg/day)
		Ingestion: Ingestion rate (mg/day)
		Dermal absorption: Skin surface area (cm^2/day) x adherence factor (mg/cm^2) [soil and sediment only] x absorption factor (unitless)
EF	=	Exposure Frequency (days/year)
ED	=	Exposure Duration (years)
AT	=	Averaging Time (days) (equal to ED for non-cancer evaluation; equal to 70 years for cancer evaluation)
BW	=	Body Weight (kg)

The ingestion exposure calculations reflect the applied dose (amount of the COPC in the mass of the medium that is ingested), not the dose absorbed through the gastrointestinal tract. Oral dose-response values are used to evaluate those doses. For dermal exposure calculations, the general equation format shown above is supplemented by calculations of the absorbed dose. Dermal dose-response values are used to evaluate the dermal doses. The dose rate is typically expressed as a bodyweight-normalized dose for risk calculations (mass per time per unit bodyweight or mg/kg-bw/day). Dose is calculated as an average daily dose for non-cancer risk calculations and as a lifetime average daily dose for cancer risk calculations. The calculated doses are conservative because they are calculated using EPCs that are conservative estimates of average concentrations (95% UCLs on the mean or the maximum detected concentration if it is lower than the 95% UCL).

The methodology for evaluating inhalation exposures differs from that used for the ingestion and dermal routes because toxic effects associated with inhalation exposures are a function of the COPC *concentration* in air rather than of the *intake/dose* as is the case for ingestion and dermal exposures. Hence, inhalation exposures are quantified in terms of average COPC concentration in air over the exposure period for non-cancer risk calculations and the lifetime average COPC concentration in air for cancer risk calculations. The exposure-response values used to calculate these risks are Reference Concentrations (RfCs) presented in dimensions of milligrams per cubic meter (mg/m^3) and Inhalation Unit Risks (IURs) presented in dimensions of (micrograms per cubic meter [$\mu g/m^3$])$^{-1}$ instead of Reference Doses (RfDs) and Cancer Slope Factors (CSFs). Because a representative concentration and not dose is the basis for inhalation risk assessment, exposure parameters such as body weight and ventilation rate are not typically used in calculating risk estimates for inhalation exposures (USEPA, 2009). The general equation for calculating chemical exposure via inhalation is as follows:

$$ECair = \frac{CA \times ET \times EF \times ED}{CF \times AT}$$

Where:

ECair	=	representative concentration of COPC in the air at the exposure point during the period of exposure (mg/m^3)
CA	=	concentration of the COPC in air (mg/m^3)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
ET	=	exposure time (hours/day)
CF	=	conversion factor (24 hours/day)
AT	=	averaging time (for carcinogens, AT = 70 years times 365 days per year; for noncarcinogens, AT = ED times 365 days per year).

The specific equations used to calculate doses/intakes for soil, surface water, and exposures for inhalation of soil-derived dust are those presented in USEPA guidance (USEPA, 1989; 2004;

2009), and are provided in the exposure parameter **Tables 3-13** through **3-15**. **Table 3-20** presents exposure parameters for indoor air.

Documentation of the quantitation of exposures is included in the RAGS Part D Table 7s and Table 9s in **Attachment G and H** respectively. Each attachment includes a list of tables to assist the reader in navigating the numerous tables. The tables in **Attachment G and H** are organized and ordered by soil exposure point and receptor. Each table includes exposure and risk calculations for all exposure media and exposure routes for a single receptor (e.g., Area 1 surface soil, outdoor worker, soil ingestion, dermal contact, and inhalation of dust and ingestion of groundwater (occupational potable water). In **Attachment G and in Attachment H** there are tables of contents that summarize the risk calculation tables (RAGS Part D table 7s in **Attachment G** and the RAGS Part D table 9s in **Attachment H**), identifying, for each risk calculation table, the surface depth/exposure point combination, the receptor, the receptor age group (as applicable), the exposure media, and the exposure routes.

- Area 1 Surface soil
- Area 2 surface soil
- Area 3 surface soil
- Area 1 combined soil (0-10 ft bgs)
- Area 2 combined soil
- Area 3 combined soil
- Sewer line Area 1 combined soil
- Sewer line Area 2 combined soil
- Sewer line Area 3 combined soil

4.0 TOXICITY ASSESSMENT

The objective of the toxicity assessment is to quantify the relationship between the intake, or dose, of COPCs and the likelihood that adverse health effects may result from exposure to the COPCs.

The BHHRA evaluates non-carcinogenic and carcinogenic health effects. Non-carcinogenic health effects refer to toxicological effects other than cancer which may result from exposure to a substance, such as toxicity to the liver, skin, or central nervous system. Carcinogenic health effects refer to the development of cancer which may result from exposure to a substance. Following USEPA guidance (USEPA, 1989), the risks of non-carcinogenic and carcinogenic effects are evaluated separately.

There are separate toxicity values, or dose-response values, for evaluating health risks: CSFs and UR values for carcinogens; and RfDs and RfCs for non-carcinogens. For potentially carcinogenic COPCs, both types of values have been developed by USEPA because these COPCs may elicit both carcinogenic and non-carcinogenic (systemic) effects. In addition, because toxicity and/or carcinogenicity can depend on the route of exposure (i.e., oral or inhalation), unique dose-response values have been developed for the oral, dermal, and inhalation exposure routes.

Section 4.1 describes the types of toxicity values that are used for evaluation of cancer risks, and Section 4.2 describes the types of toxicity values that are used for evaluation of non-cancer hazards.

4.1 Toxicity Assessment for Carcinogenic Effects

The toxicity assessment followed the USEPA two-part evaluation to characterize the carcinogenicity of a chemical. The first part involves assigning a weight-of-evidence classification to a chemical, which describes the strength of available information with respect to the association of chemical exposure and human cancer. The second part involves calculation of a CSF or UR to reflect the carcinogenic potency.

4.1.1 Weight-of-Evidence

Historically, USEPA has used an alphanumeric system to describe the weight-of-evidence:

Group A - Human Carcinogen. This category indicates there is sufficient evidence from epidemiological studies to support a causal association between an agent and human cancer.

Group B - Probable Human Carcinogen. This category generally indicates there is at least limited evidence from epidemiologic studies of carcinogenicity to humans (Group B1) or that, in the absence of data on humans, there is sufficient evidence of carcinogenicity in animals (Group B2).

Group C - Possible Human Carcinogen. This category indicates that there is limited evidence of carcinogenicity in animals in the absence of data on humans.

Group D - Not Classified. This category indicates that the evidence for carcinogenicity in animals is inadequate.

Group E - No Evidence of Carcinogenicity to Humans. This category indicates that there is evidence of noncarcinogenicity in at least two adequate animal tests in different species or in both epidemiologic and animal studies.

This assessment also followed the revised Guidelines for Carcinogenic Risk Assessment (USEPA, 2005c), wherein USEPA revised the approach to describing the carcinogenic potential of an agent from an alphanumeric system to a weight-of-evidence-based descriptive narrative. Descriptors are as follows:

Carcinogenic to Humans. This descriptor indicates strong evidence of human carcinogenicity, and is appropriate A) when there is convincing epidemiologic evidence of a causal association between human exposure and cancer; or B) when all of the following conditions are met: (a) there is strong evidence of an association between human exposure and either cancer or the key precursor events of the agent's mode of action but not enough for a causal association, and (b) there is extensive evidence of carcinogenicity in animals, and (c) the mode(s) of carcinogenic action and associated key precursor events have been identified in animals, and (d) there is strong evidence that the key precursor events that precede the cancer response in animals are anticipated to occur in humans and progress to tumors, based on available biological information.

Likely to be Carcinogenic to Humans. This descriptor is appropriate when the weight of the evidence is adequate to demonstrate carcinogenic potential to humans but does not reach the weight of evidence for the descriptor “Carcinogenic to Humans”. The use of the term “likely” as a weight of evidence descriptor does not correspond to a quantifiable probability. Supporting data for this descriptor may include: an agent demonstrating a plausible (but not definitively causal) association between human exposure and cancer, in most cases with some supporting biological, experimental evidence, though not necessarily carcinogenicity data from animal experiments; an agent that has tested positive in animal experiments in more than one species, sex, strain, site, or exposure route, with or without evidence of carcinogenicity in humans; a positive tumor study that raises additional biological concerns beyond that of a statistically significant result, for example, a high degree of malignancy, or an early age at onset; a rare animal tumor response in a single experiment that is assumed to be relevant to humans; or a positive tumor study that is strengthened by other lines of evidence, for example, either plausible (but not definitively causal) association between human exposure and cancer or evidence that the agent or an important metabolite causes events generally known to be associated with tumor formation (such as DNA reactivity or effects on cell growth control) likely to be related to the tumor response in this case.

Suggestive Evidence of Carcinogenic Potential. This descriptor is appropriate when the weight of evidence is suggestive of carcinogenicity; a concern for potential carcinogenic effects in humans is raised, but the data are judged not sufficient for a stronger conclusion. This descriptor covers a spectrum of evidence associated with varying levels of concern for carcinogenicity, ranging from a positive cancer result in the only study on an agent to a single positive cancer result in an extensive database that includes negative studies in other species.

Data Inadequate for an Assessment of Human Carcinogenic Potential. This descriptor is appropriate when available data are judged inadequate for applying one of the other descriptors.

Not Likely to be Carcinogenic in Humans. This descriptor is appropriate when the available data are considered robust for deciding that there is no basis for human hazard concern. In some instances, there can be positive results in experimental animals when there is strong, consistent evidence that each mode of action in experimental animals does not operate in humans. In other cases, there can be convincing evidence in both humans and animals that the agent is not carcinogenic.

The weight of evidence classification in Integrated Risk Information System (IRIS) for a given chemical may reflect either of the two classification schemes identified above, depending on when USEPA most recently reviewed and revised the carcinogenicity assessment for any given chemical.

4.1.2 Carcinogenic Potency

It has been generally assumed historically that carcinogenic effects are non-threshold effects. This means that any dose, no matter how small, has been assumed to pose a finite probability of generating a response. Thus, no dose of a carcinogen has been thought to be risk-free. More contemporary evaluations that focus on the mechanisms of action by which a chemical may cause cancer have, for some chemicals, identified threshold doses below which carcinogenesis does not occur. In consideration of the nature of the toxicological data that are available for a given chemical, USEPA uses one or more of several different models to identify the relationship between the dose of the chemical and a carcinogenic response.

The toxicological data that are used to evaluate carcinogenic potency generally come from cancer bioassays that are performed using laboratory animals such as specific strains of rats and mice. An advantage of using laboratory animals to identify dose-response relationships is that the substances and doses that the animals are exposed to are controlled, such that if a carcinogenic response occurs, there is more confidence that the response occurred as a result of exposure to a specific substance, and the doses that caused the response are known. Disadvantages of using animal studies include uncertainties with extrapolating a carcinogenic response in animals to a carcinogenic response in humans. This uncertainty is addressed, in part, through the use of relatively high doses of chemicals used in cancer bioassays. Generally, laboratory animals are given maximum tolerated doses (i.e., the highest dose that the animal can tolerate without suffering adverse effects that would otherwise compromise the study) and fractions of the maximum tolerated dose. These doses are typically much higher than any dose that would be experienced by human populations. If a positive dose-response relationship is not identified in animal studies that use these high doses, then there is more confidence that the substance would not cause cancer at the much lower exposure levels potentially experienced by human populations. In contrast, if a positive dose-response relationship is identified in animal studies that use high doses, there is uncertainty in extrapolating the dose-response relationship from high doses to the much lower exposure levels potentially experienced by human populations.

Consequently, human epidemiologic data are a preferred basis for developing estimates of carcinogenic potency. However, the majority of chemicals studied to do not have sufficient

epidemiological study data to allow for derivation of dose-response relationships. Many epidemiology studies find causal relationships between exposure to a chemical and a toxicological response, but are confounded by the fact that human populations are exposed to many substances over a lifetime, as well as by the uncertainty inherent in measuring actual human exposures to specific substances (e.g., actual concentrations in workplace air that a population may have been exposed to over a period of many years). These uncertainties often preclude establishing a dose-response relationship that is sufficient to use as the basis of carcinogenic potency estimates. Since laboratory bioassays avoid these uncertainties, they are often used as basis for the derivation of dose-response profiles, despite the availability of human epidemiological data.

The common measures of cancer potency assessment are the CSF (ingestion and dermal exposure) or a UR (commonly applied to inhalation, but also to ingestion (of drinking water)). The CSF is the estimated upper-bound excess lifetime cancer risk (ELCR) associated with a lifetime average daily dose of a chemical agent of 1 mg/kg/day and the inhalation UR is the upper-bound ELCR associated with a lifetime average daily exposure of 1 $\mu g/m^3$ in air. CSF values are expressed as risk per mg/kg/day [$(mg/kg/day)^{-1}$] and UR values are expressed as risk per ($\mu g/m^3$) [$(\mu g/m^3)^{-1}$]. USEPA and other regulatory and scientific organizations have typically calculated CSFs and URs for chemicals in weight of evidence Groups A, B1, B2, and "Carcinogenic to humans" and "Likely to be carcinogenic to humans". For some, but not all chemicals with Group C weight of evidence classification, USEPA and other organizations have also calculated cancer dose-response values.

In this BHHRA, CSFs are used to estimate the incremental risks associated with ingestion and dermal exposures, and URs are used to estimate the cancer risks associated with inhalation of COPCs in air (airborne dust).

The CSF and UR values and supporting documentation are provided in **Tables 4-1** and **4-2**.

4.1.3 Adjustment for Early Life Exposures to Carcinogens with a Mutagenic Mode of Action

USEPA has developed guidance for characterizing cancer susceptibility associated with early life exposures (e.g., young children) to potentially carcinogenic chemicals (USEPA, 2005c; 2008a). The approach developed by USEPA to characterize cancer risks for early life stages includes consideration of differences in physiology and exposure potential between children and adults, as well as differences in susceptibility to tumor development between children and adults. Physiological and behavioral differences are accounted for in the exposure assessment, whereby age-specific exposure parameters (e.g., body weights, ingestion rates, inhalation rates, contact frequencies) are applied to the various age groups evaluated in the risk assessment. Differences in susceptibility to tumor development are accounted for by considering the carcinogenic mode of action in accordance with the mode of action framework developed by USEPA (USEPA, 2005c).

Consistent with USEPA guidance, an Age-Dependent Adjustment Factor (ADAF) has been applied to published CSFs for specific COPCs to calculate risk for the adolescent receptors. For this BHHRA, the receptors that includes child exposures is the trespasser scenario (adolescent trespasser from age 12 to18 years) and the residential scenario (Child ages 1-6). Carcinogenic

COPCs with an identified mutagenic mode of action for media at the CPS Site include: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene,, indeno(1,2,3-cd)pyrene, methylene chloride, trichloroethylene, and vinyl chloride. Therefore, the CSFs for each of those COPCs will be adjusted for specific age groups to account for the mutagenic mode of action.

In general, USEPA-published slope factors are multiplied by generic age-dependent adjustment factors (ADAFs) as follows:

- ADAF for children 0<2 (ADAF=10)
- ADAF for children 2<6 (ADAF=3)
- ADAF for older children 6 < 16 yrs of age (ADAF = 3)
- Adults (>16 yrs of age) (ADAF = 1)

For the purposes of this risk assessment, weighted ADAFs have been applied as follows:

- Children 1-6 years old: ADAF of 5.3, calculated as an age-weighted ADAF for children 0<2 (ADAF=10) and children 2<6 (ADAF=3), as follows: [(2 yrs x 10) + (3 yrs x 4)] / 6 yrs = 5.3
- Adolescents 12-18 years old: ADAF of 2.3 calculated as an age-weighted ADAF for older children 12<16 (ADAF=3) and adults 16<18 (ADAF=1), as follows: [(4 yrs x 3) + (2 yrs x 1)] / 6 yrs = 2.3

Trichloroethylene is carcinogenic by a mutagenic mode of action for induction of kidney tumors (USEPA, 2013c). The oral slope factor and inhalation unit risk toxicity values published in IRIS incorporate risk due to three cancer types, kidney, non-Hodgkin lymphoma (NHL), and liver and these values do not reflect the presumed increased early-life susceptibility to kidney tumors. In order to account for the increased early-life susceptibility to kidney tumors, the kidney cancer component of the TCE CSF and UR has been adjusted using the ADAFs presented above. The published CSF and URs are presented in **Tables 4-1** and **4-2** and the adjusted CSFs and URs for trichloroethylene by age range are presented in **Tables 4-3** and **4-4**.

4.2 Toxicity Assessment for Non-Carcinogenic Effects

Unlike carcinogenic effects, non-carcinogenic effects are threshold effects and were evaluated accordingly. This means that at some level of exposure there is a threshold below which adverse effects would not be expected, and above which adverse effects could potentially occur. Examples of non-carcinogenic (i.e., threshold) effects include liver toxicity, kidney toxicity, reproductive effects, neurotoxicity, and teratogenicity. The same process that is used to identify toxicity data to support carcinogenic potency assessment is also used to identify toxicity data to support the identification of dose-response relationships for non-carcinogenic effects.

Non-cancer toxicity values include RfDs and RfCs. The RfD expressed in units of mg/kg/day, is defined as an estimate (with uncertainty spanning perhaps an order of magnitude or greater) of a daily exposure level for the human population, including sensitive subpopulations, that is likely to

be without an appreciable risk of deleterious effects during a lifetime (USEPA, 1989). Unlike a CSF or UR, which represents a probability of incurring a carcinogenic effect following exposure to a substance, the RfD represents a threshold dose below which adverse health effects are unlikely to occur, and above which the potential for adverse health effects exists. The RfD is derived from the following equation:

$$RfD\ (mg/kg/day) = \frac{NOAEL\ or\ LOAEL}{UF\ and/or\ MF}$$

The No Observed Adverse Effect Level (NOAEL) represents the dose of a chemical at which there are no statistically or biologically significant differences in the frequency of an adverse effect between the exposed population and its appropriate control. The Lowest Observed Adverse Effect Level (LOAEL) represents the lowest dose at which a statistically significant difference in the frequency of an effect is noted. Both the NOAEL and the LOAEL are reported in terms of mg/kg/day. An uncertainty factor (UF) is used to account for inter-species and intra-species differences, whether the dose was an NOAEL or an LOAEL, and the adequacy of the data. The magnitude of the UF will therefore vary from chemical to chemical, ranging from 3 to 3,000. A modifying factor (MF), ranging from 1 to 10 may also be included to reflect qualitative uncertainties not explicitly addressed in the UFs. The toxicity endpoint upon which the RfD is derived and the UF and/or MF used in the calculation are presented in the dose-response tables provided in **Table 4-5**.

The RfC, in units of mg/m^3, is analogous to the RfD and is developed through a similar process. However, unlike RfDs, which represent a dose (in mg/kg/day) at which adverse or deleterious effects are unlikely, RfCs represent air concentrations (in mg/m^3) at which adverse or deleterious effects are unlikely (i.e., an air concentration corresponding to a hazard index (HI) = 1.0). In this BHHRA, inhalation RfCs are used to estimate the non-cancer risks associated with inhaling COPCs.

The use of chronic RfDs and RfCs to evaluate the potential for adverse health effects resulting from substantially less-than-lifetime exposures may be overly protective. Subchronic Reference Doses and Subchronic Reference Concentrations (RfD_ss/RfC_ss) have been developed for some chemicals to evaluate the potential non-carcinogenic effects of limited duration exposures. RfD_ss/RfC_ss are similar to chronic RfDs/RfCs; the distinction is the length of exposure duration. The construction worker scenario is the only scenario evaluated in this risk assessment that is associated with subchronic exposures. Therefore, when available, subchronic RfDs and RfCs are used to evaluate potential non-cancer risks for the construction worker. When subchronic values are not available, chronic RfDs and RfCs are used. Chronic RfDs and RfCs are used for all other receptor scenarios.

The RfDs and RfCs and supporting documentation for the chemicals selected as COPCs are provided in **Tables 4-5 and 4-6**.

4.2.1 Adjustment for Dermal Exposure

Oral Cancer CSFs and non-cancer RfDs were developed to evaluate risk associated with the ingestion exposure route (typically based on the applied dose). In accordance with USEPA

guidance (USEPA, 2004), dermal dose-response values are calculated from oral dose-response values using an oral absorption factor. The dermal dose-response values are appropriate for evaluating the calculated absorbed dose associated with dermal exposures. The oral absorption factor represents the fraction of ingested amount that is absorbed from the gastrointestinal tract following oral administration of a substance. The absorbed dose represents the amount of substance that is potentially available for biological interaction. The calculated dermal dose-response value is appropriate for evaluating the absorbed dermal doses.

Thus, for potentially carcinogenic substances, the dermal dose-response value is calculated as follows:

$$CSF_d = CSF_o / Oral\ ABS$$

The dermal dose-response value for evaluating non-carcinogenic effects is calculated as follows:

$$RfD_d = RfD_o\ X\ Oral\ ABS$$

Chemical-specific oral ABS values are published by USEPA (USEPA, 2004). In accordance with USEPA guidance (USEPA, 2004), oral dose-response values are only adjusted using an oral ABS value if the COPC has an oral ABS value less than 50 percent. Otherwise, the oral dose-response value is used as the dermal dose-response value.

Dermal RfDs and CSFs are presented in **Tables 4-5 and 4-1**.

4.2.2 Chemical-Specific Considerations

For some constituents, RfD values differ by exposure medium and/or chemical speciation or form. These attributes apply to the following COPCs in this BHHRA:

Cadmium. USEPA publishes two RfD values for cadmium: one is to be used to evaluate cadmium in food, and one is to be used to evaluate cadmium in water. The RfD for food was used for soil exposures and the RfD for water has been used to evaluate risks for exposures to cadmium in groundwater.

Chromium. USEPA publishes separate RfD values for hexavalent chromium and trivalent chromium. Based on USEPA RfDs, hexavalent chromium is associated with a higher order of non-cancer toxicity than is trivalent chromium. An inhalation UR for hexavalent chromium is published in USEPA's IRIS database. There is currently no oral CSF for hexavalent chromium published in the USEPA IRIS database. Chromium is not a COI at the Site, and chromium has not been used in historical operations at the Site. Although chromium has been selected as COPC at the Site, hexavalent chromium is not anticipated at the Site. Therefore, the toxicity values for trivalent chromium will be used in this BHHRA.

4.3 Sources of Dose-Response Values

The following hierarchy of sources for dose-response values (USEPA, 2003a) has been utilized in identifying dose-response values for this BHHRA.

Tier 1 - IRIS (http://www.epa.gov/iris/). In accordance with USEPA guidance, the main source of dose-response values is IRIS, which is a database established by USEPA containing all validated data on many toxic substances found at hazardous waste sites. This database (USEPA, 2013c), current as of November 2013, was used to identify the CSFs, URs, RfDs, and RfCs applied in this risk assessment.

Tier 2 - National Center for Environmental Assessment (NCEA) provisional peer reviewed toxicity values (PPRTVs) **(http://hhpprtv.ornl.gov/)**. NCEA's PPRTVs are developed by the Superfund Technical Support Center (STSC) for the USEPA Superfund program. STSC's reassessment of USEPA Health Effects Assessment Summary Tables (HEAST) toxicity values, as well as development of PPRTVs in response to Regional or Headquarters Superfund program requests, are consistent with Agency practices on toxicity value development, use the most recent scientific literature, and are supported by both internal and external peer review, providing a high level of confidence in the use of these values in the Superfund Program. The PPRTVs used in this HHRA were obtained from the USEPA-recommended website and are current as of November 2013.

Tier 3 - Other Toxicity Values:

- California Environmental Protection Agency (CALEPA) toxicity values (CALEPA, 2013). CALEPA develops toxicity values for both cancer and non-cancer effects. CALEPA toxicity values were obtained from the CALEPA website at http://www.oehha.ca.gov/risk/chemicalDB//index.asp. The CALEPA toxicity values used in this risk assessment were obtained from the listed source and are current as of November 2013.
- ATSDR Minimal Risk Levels (MRLs) (ATSDR, 2009) address noncancer effects only, and are available on the ATSDR website at http://www.atsdr.cdc.gov/mrls.html. MRL values for intermediate exposure were used as subchronic RfD and RfC values, and MRL values for chronic exposures were used as chronic RfD and RfC values. The MRL values used in this BHHRA were obtained from that source in March 2011.
- Toxicity values remaining in current versions of HEAST (USEPA, 1997b).

Toxicity values were not available for a number of COPCs. Refer to **Table 4-1** through **4-6** for a list of these analytes. These analytes are not evaluated quantitatively in this BHHRA and the associated uncertainty is discussed in Section 6.0.

5.0 RISK CHARACTERIZATION

Risk characterization and the uncertainty analysis are the final steps in the risk assessment process. The risk characterization integrates the exposure and toxicity information generated in previous sections to quantitatively evaluate the potential health risks associated with exposure to chemicals at the Site. Risk estimates are then evaluated through a comparison to CERCLA risk management criteria. Section 5.1 describes the methodology used to calculate risks for each COPC and to sum risk estimates among COPCs, exposure pathways, and exposure media to derive cumulative receptor risks. Section 5.2 provides the risk assessment results for each of the land use scenarios evaluated in the HHRA by exposure area. Section 6.0 then identifies and discusses uncertainties in the HHRA and their potential impact on the results and conclusions of the risk assessment.

5.1 Risk Characterization Methods

Quantitative estimates of both carcinogenic and non-carcinogenic risks are calculated for each exposure scenario selected for evaluation in the exposure assessment, in accordance with USEPA (1989) guidance.

5.1.1 Risk Calculation Methodology

An estimate of the ELCR associated with exposure to each COPC in a given medium is calculated by multiplying the exposure route pathway-specific lifetime average daily dose (e.g., dermal exposure to surface soil) or lifetime average exposure concentration (e.g., inhalation of vapors) by its exposure route-specific CSF (e.g., oral CSF) or UR.

For oral and dermal exposures,

$$ELCR = \text{Lifetime Average Daily Dose (mg/kg/day)} \times CSF\ (\text{mg/kg/day})^{-1}$$

For inhalation exposures,

$$ELCR = \text{Lifetime Average Daily Exposure } (\mu g/m^3) \times UR\ (\mu g/m^3)^{-1}$$

The ELCR represents an upper bound of the probability of an individual developing cancer over a lifetime as the result of exposure to a COPC. The ELCR is calculated for each carcinogenic COPC for each medium and exposure route combination for each receptor at each exposure area. The ELCR for all COPCs in a given medium are summed to identify a route-specific total ELCR (e.g., soil ingestion) and the ELCR for all exposure routes for a given receptor/medium combination (e.g., soil ingestion and dermal contact) are summed to yield a total medium ELCR (e.g., for surface soil).

The non-cancer HQ associated with exposure to each COPC is calculated by dividing the exposure route pathway-specific average daily dose or exposure concentration by its exposure route-specific RfD or RfC.

For oral and dermal exposures,

HQ = Average Daily Dose or Exposure (mg/kg/day) / RfD (mg/kg/day)

For inhalation exposures,

HQ = Average Daily Exposure (μg/m^3) / RfC (μg/m^3)

The HQ is calculated for each COPC for each medium and exposure route combination for each receptor at each exposure area. For a given medium/receptor/age group combination (e.g., surface soil and adult outdoor worker), HQs for all COPCs are summed by route (e.g., dermal contact) to identify a medium/route HI, and the HIs for multiple exposure routes (e.g., incidental ingestion and dermal contact) are summed to identify a medium-specific total HI (e.g., for surface soil ingestion and dermal contact). Because HIs are not additive across age groups (applies to the trespasser and future resident only in this assessment), the higher HI between the two age groups is selected as the representative HI for the trespasser and child resident. An HI less than 1 indicates that non-carcinogenic toxic effects are unlikely as a result of COPC exposure. HIs greater than 1 may be indicative of a possible non-carcinogenic toxic effect. As the HI increases, so does the likelihood that adverse effects might be associated with exposure.

Risk calculations are documented in **Attachment G** (RAGS Part D Table 7s) and **Attachment H** (RAGS Part D Table 9s). The tables in **Attachment G** are grouped by soil exposure depth/exposure point (e.g. Area 1) in the following order: Surface Soil: Area 1 (G-1-G-6), Area 2 (G-7 – G-12), Area 3 (G-13 – G-18); Combined Soil (0 – 10 ft bgs): Area 1 (G-19-G-25), Area 2 (G-26 – G-32), Area 3 (G-33 – G-39) , and Combined Soil (0 – 10 ft bgs for construction/utility worker): the Sewer Line Area 1 (G-40), Sewer Line Area 2 (G-41), and Sewer Line Area 3 (G-42). **Attachment H** tables are grouped in a similar fashion. In Attachment G and in Attachment H there are tables of contents that summarize the risk calculation tables (RAGS Part D table 7s in Attachment G and the RAGS Part D table 9s in Attachment H), identifying, for each risk calculation table, the surface depth/exposure point combination, the receptor, the receptor age group (as applicable), the exposure media, and the exposure routes.

Each table in **Attachments G** documents the exposure and risk calculations for a receptor/age group (e.g. adult outdoor worker) for all exposure media (typically soil and groundwater) and exposure routes (ingestion, dermal contact, and possibly inhalation). Each of the tables document individual COPC risk (by exposure route), cumulative medium-specific risk (soil), and cumulative receptor/age group risk (soil and groundwater)

The tables in **Attachment H (**RAGS Part D table 9s) present the same calculated risk information as those in **Attachment G**, but in a slightly different structure, and also provide information beyond the simple, screening HI (it is assumed in the **Attachment G** tables that non-cancer hazards of all COPCs are additive). The Table 9s in **Attachment H** also identify the primary target organ or organ system associated with non-cancer toxicity of each COPC, and present the total HI for each identified target organ/organ system, or toxic effect type (the assumption is that the effects of COPCs with the same or similar target organ or organ system are additive). Examples of target organ/organ system or toxic effect type are liver, immune system, and developmental. The more detailed information in the Table 9s is most useful if the screening HIs are above 1, but not

dramatically so. In such cases, it may be that none of the total HIs segregated by target organ/organ system, or effect type are greater than 1.

The calculated cancer and non-cancer risks are evaluated in the context of risk management criteria established in the NCP and discussed in the preamble to the NCP (USEPA, 1990). The results of the baseline risk assessment are evaluated by comparing them to the USEPA's remedial triggers. With respect to cancer risk, USEPA identifies remediation triggers for total cancer risk "that represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} to 10^{-6} lifetime excess cancer risk." USEPA sets remediation triggers for noncancer risk "such that exposures present no appreciable risk of significant adverse effects to individuals, based on comparison of exposures to the concentration associated with reliable toxicity information such as USEPA's reference doses." For cumulative risks due to noncarcinogens, "EPA will set the remediation goals at levels for individual chemicals such that cumulative effects of multiple chemicals will not result in adverse effects." USEPA has stated that "acceptable exposure for noncarcinogens is one to which human populations, including sensitive subgroups such as pregnant women and children may be exposed without adverse effects during a lifetime or part of a lifetime, incorporating an adequate margin of safety." Given the stated remediation triggers, the results of the baseline risk assessment are evaluated in accordance with the NCP - cancer risk estimates for a site are compared to an ELCR range of 10^{-6} (one in a million) to 10^{-4} (one in ten-thousand). Total risks at or below 10^{-4} do not generally warrant a response action. Risks greater than 10^{-4} generally warrant development and evaluation of remedial alternatives. Non-cancer risks are compared to a HI value of 1, which corresponds to levels of exposure that people (including sensitive individuals) could experience without expected adverse effects.

This BHHRA was in progress when the OSWER Directive 9200.1-120 entitled "Human Health Evaluation Manual, Supplemental Guidance: Update to Standard Default Exposure Factors" was released. All of the exposure parameters had been identified in the interim deliverables for the BHHRA. Analysis has been conducted to determine what the impact might have been if exposure parameter values contained in the recent publication had been incorporated. The soil ingestion rates for the Indoor Worker (50 mg/day), Outdoor Worker (100 mg/day), Resident Child (200 mg/day), and Resident Adult (100 mg/day) used in the BHHRA are the same values that are recommended in the recent document. The Worker and Resident Adult bodyweight (70 kg used in the BHHRA and 80 kg in the recent document) results overall in a 12.5% reduction in the overall soil daily dose and associated cancer risk and noncancer hazard. For groundwater, the potable water ingestion rates for the Resident Child (1 liter/day used in the BHHRA and 0.78 liter/day in the recent document) differ by 22%. The different ingestion rate would decrease drinking water exposure and calculated risks by 22% for the Resident Child. The Resident Child bodyweight of 15 kg used in the BHHRA ids also recommended in the recent document. The potable water ingestion rate for the Resident Adult (1 2 liter/day in the BHHRA, 2.5 liter/day in the recent document) would increase the potable water intake and associated risks by 25%. However, since the bodyweight change (from 70 kg in the BHHRA to 80 kg in the recent document) is a 12.5 % increase. Since exposures are calculated using the intake rate in the numerator of an equation and the bodyweight in the denominator, the recommended changes would essentially cancel, with a net increase in riskexposure and risk of approcximately 12.5 %.

In addition, OSWER Directive 9283.1-42 entitled "Determining Groundwater Exposure Point Concentrations" was also recently released. That guidance calls for identification of groundwater EPCs by utilizing data from a small number of monitoring wells within the core of the plume. If the guidance had been employed, the groundwater EPCs for the plume may have been slightly higher. However, this would not have an impact on the conclusions, since the calculated risks for hypothetical potable use of groundwater were well above the CERCLA risk range and the noncancer hazard index was also well above 1.

5.2 Risk Characterization Results – By Soil Exposure Area Scenarios

Table 5-1 presents summaries of risks calculated for the current and future land use exposure scenarios for each exposure area (grouped, for convenience, by surface soil exposure point and receptor). **Table 5-2** presents summaries of risks calculated for the current and future land use exposure scenarios for each exposure area (grouped, for convenience, by combined soil (0-10 ft bgs) exposure point and receptor).The subsections that follow identify the calculated risks, for the current and future receptors for each exposure area and evaluate the risks relative to the NCP acceptable cancer risk range, and to a HI of 1, and identify principal contributors to risks for scenarios which have a calculated cancer risk greater than $1x10^{-4}$ and/or a HI of 1 or greater. Calculations are documented in 'RAGS Part D Table 7s and Table 9s, which are contained in **Attachments G and H**, respectively.

5.2.1 Surface Soil Area 1 Exposure Scenarios

Current and future land use receptors evaluated for Area 1 include current and future trespassers (adolescent and adult) potentially exposed to surface soil, industrial/commercial outdoor workers (potentially exposed to surface soil and soil-derived dust and ingestion at work of potable water derived from groundwater at the Site) and industrial/commercial indoor workers (potentially exposed to surface soil, ingestion at work of potable water derived from groundwater at the Site, and potential inhalation of vapors (vapor intrusion)), and hypothetical future residents (child and adult) potentially exposed to surface soil, ingestion and dermal contact with potable water derived from groundwater at the Site, and inhalation during showering. These same receptors have been evaluated for Surface Soil Area 2 Exposure Scenarios (Section 5.2.2) and Surface Soil Area 3 Exposure Scenarios (Section 5.2.3).

5.2.1.1 Current and Future Trespasser

As indicated in **Table 5-1**, total cancer risk for the Current and Future Trespasser (adolescent and adult) at Area 1 potentially exposed to surface soil (6×10^{-7}) is within the acceptable cancer risk range and the screening HI is well below 1 for each age group (higher value is 0.4 for the Adolescent Trespasser potentially exposed to surface soil).

5.2.1.2 Future Outdoor Worker

As indicated in **Table 5-1**, cancer risk for the Future Outdoor Worker at Area 1 potentially exposed to surface soil and soil-derived dust ($2 X 10^{-6}$) is within the acceptable risk range and the screening

HI (0.8) is below 1. The cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2 X 10^{-4}) and arsenic (1 X 10^{-4}) and benzene (7 X 10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Outdoor Worker at Area 1 Surface Soil Scenario) cancer risk (5 X 10^{4}) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1.

When metals in groundwater are excluded from the risk calculations, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS/Madison plume (3 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (5) is above 1. The largest contributors to cancer risk are vinyl chloride (2 X 10^{-4}) and benzene (7 X 10^{-5}) and the predominant contributors to HI are 1,2,3-trichlorobenzene (4), -1,2-DCE (1), benzene (0.9), and 1,2,4-trichlorobenzene (0.5).

5.2.1.3 Future Indoor Worker

As indicated in **Table 5-1**, cancer risk for the Future Indoor Worker at Area 1 potentially exposed to surface soil and soil-derived dust (1 X 10^{-6}) is within the acceptable risk range and the screening HI (0.4) is below 1. As was reported for the future outdoor worker, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2 X 10^{-4}) and arsenic (1 X 10^{-4}) and benzene (7 X 10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Indoor Worker at Area 1 Surface Soil Scenario) cancer risk (5 X 10^{-4}) is above the upper end of the acceptable risk range and the total receptor screening HI (89) is well above 1.

5.2.1.4 Hypothetical Future On-Site Resident

As indicated in **Table 5-1**, total cancer risk for the Hypothetical Future On-Site Resident (child and adult) at Area 1 potentially exposed to surface soil (2 x 10^{-5}) is within the acceptable cancer risk range and the screening HI (11) is above 1 for the child (and equal to 1 for the adult). The predominant contributors to the child HI are vanadium (7.4), thallium (1.4), and 1,2,3-trichlorobenzene (1.1).

The cancer risk associated with hypothetical future ingestion and dermal contact with potable water obtained from groundwater within the CPS/Madison plume, and inhalation of volatiles during showering (1 x 10^{-2}) is above the upper end of the acceptable risk range and the screening HI (2725) is well above 1. The cancer risk and Hazard Index associated with inhalation of volatiles during showering represent more than 75% of the total potable water use risks, with ingestion and dermal risks contributing the remainder of the risks. The largest contributors to potable water

(ingestion, dermal, and inhalation exposures) cancer risk are benzene (3.8 X 10^{-3}), 1,4-dichlorobenzene (3.1 X 10^{-3}), vinyl chloride (1.6 X 10^{-3}), 1,2-dichloroethane (7.1 X 10^{-4}), arsenic (4 X 10^{-4}), and1,1,2,2-tetrachloroethane (1.7 X 10^{-4}). The largest contributors to potable water (ingestion, dermal, and inhalation) HI are 1,2,4-trichlorobenzene (1490), vanadium (343), chlorobenzene (199), mercury (143), benzene (89), copper (85), thallium (50), zinc (48), 1,2-dichloropropane (33), iron (31), 1,2,3-trichlorobenzene(25), 1,2,4-trichlorobenzene (24), 1,2-dichloroethane (21), o-xylene (19), 1,1,2-trichloroethane (19), 1,2-dichlorobenzene (16), xylenes, total (15), naphthalene (10), toluene (9), cis 1,2-DCE (7), cadmium (7), methylene chloride (6), vinyl chloride (5), aniline (4), antimony (4), arsenic (4), aluminum (4), trans-1,2-DCE (3), ethylbenzene (3), 1,4-dichlorobenzene(2), and 1,3-dichlorobenzene (1).

The total receptor (Hypothetical Future Resident (child and adult) at Area 1 Surface Soil Scenario) cancer risk (1 X 10^{-2}) is above the upper end of the acceptable risk range and the total receptor (child) screening HI (2725) is well above 1.

5.2.2 Surface Soil Area 2 Exposure Scenarios

5.2.2.1 Current and Future Trespasser

As indicated in **Table 5-1**, total cancer risk for the Current and Future Trespasser (adolescent and adult) at Area 2 potentially exposed to surface soil (1 x 10^{-6}) is within the acceptable cancer risk range and the screening HI is well below 1 for each age group (higher value is 0.2 for the Adolescent Trespasser potentially exposed to surface soil).

5.2.2.2 Future Outdoor Worker

As indicated in **Table 5-1**, cancer risk for the Future Outdoor Worker at Area 2 potentially exposed to surface soil and soil-derived dust (3 X 10^{-6}) is within the acceptable risk range and the screening HI (0.5) is below 1. The cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2 X 10^{-4}) and arsenic (1 X 10^{-4}) and benzene (7 X 10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Outdoor Worker at Area 2 Surface Soil Scenario) cancer risk (5 X 10^{4}) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with surface soil exposures in Area 2 are negligible.

When metals in groundwater are excluded from the risk calculations, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (3 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (5) is above 1. The largest contributors to cancer risk are vinyl chloride (2 X 10^{-4}) and benzene (7 X 10^{-5}) and the predominant contributors to HI are 1,2,3-trichlorobenzene (4), -1,2-DCE (1), benzene (0.9), and 1,2,4-trichlorobenzene (0.5).

5.2.2.3 Future Indoor Worker

As indicated in **Table 5-1**, cancer risk for the Future Indoor Worker at Area 2 potentially exposed to surface soil and soil-derived dust (1 X 10^{-6}) is within the acceptable risk range and the screening HI (0.3) is below 1. As was reported for the future outdoor worker, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2 X 10^{-4}) and arsenic (1 X 10^{-4}) and benzene (7 X 10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1). **The cancer risk (7 X 10^{-7}) associated potential future indoor inhalation of vapors is within the acceptable risk range and the corresponding Hazard Index (0.1) is well below 1.**

The total receptor (Future Indoor Worker at Area 2 Surface Soil Scenario) cancer risk (5 X 10^{-4}) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with surface soil exposures in Area 2 are negligible.

5.2.2.4 Hypothetical Future On-Site Resident

As indicated in **Table 5-1**, total cancer risk for the Hypothetical Future On-Site Resident (child and adult) at Area 2 potentially exposed to surface soil (4 x 10^{-5}) is within the acceptable cancer risk range and the screening HI (7) is above 1 for the child (and at 0.7, less than 1 for the adult). The predominant contributors to the child HI are vanadium (5) and thallium (2).

The cancer risk associated with hypothetical future ingestion and dermal contact with potable water obtained from groundwater within the CPS plume, and inhalation of volatiles during showering (1 x 10^{-2}) is above the upper end of the acceptable risk range and the screening HI (2725) is well above 1. The cancer risk and Hazard Index associated with inhalation of volatiles during showering represent more than 75% of the total potable water use risks, with ingestion and dermal risks contributing the remainder of the risks. The largest contributors to potable water (ingestion, dermal, and inhalation exposures) cancer risk are benzene (3.8 X 10^{-3}), 1,4-dichlorobenzene (3.1 X 10^{-3}), vinyl chloride (1.6 X 10^{-3}), 1,2-dichloroethane (7.1 X 10^{-4}), arsenic (4 X 10^{-4}), and1,1,2,2-tetrachloroethane (1.7 X 10^{-4}). The largest contributors to potable water (ingestion, dermal, and inhalation) HI are 1,2,4-trichlorobenzene (1490), vanadium (343), chlorobenzene (199), mercury (143), benzene (89), copper (85), thallium (50), zinc (48), 1,2-dichloropropane (33), iron (31), 1,2,3-trichlorobenzene(25), 1,2,4-trichlorobenzene (24), 1,2-dichloroethane (21), o-xylene (19), 1,1,2-trichloroethane (19), 1,2-dichlorobenzene (16), xylenes, total (15), naphthalene (10), toluene (9), cis 1,2-DCE (7), cadmium (7), methylene chloride (6), vinyl chloride (5), aniline (4), antimony (4), arsenic (4), aluminum (4), trans-1,2-DCE (3), ethylbenzene (3), 1,4-dichlorobenzene(2), and 1,3-dichlorobenzene (1).

The total receptor (Hypothetical Future Resident (child and adult) At Area 2 Surface Soil Scenario) cancer risk (1 X 10^{-2}) is above the upper end of the acceptable risk range and the total receptor (child) screening HI (2725) is well above 1. These risks are almost completely associated with

the hypothetical future potable use of groundwater (particularly inhalation of volatiles during showering). The risks associated with surface soil exposures in Area 2 are negligible (thallium and vanadium (predominant contributors to HI) concentrations in surface soil are consistent with background conditions).

5.2.3 Surface Soil Area 3 Exposure Scenarios

5.2.3.1 Current and Future Trespasser

As indicated in **Table 5-1**, total cancer risk for the Current and Future Trespasser (adolescent and adult) at Area 3 Surface Soil Scenario potentially exposed to surface soil (4×10^{-7}) is within the acceptable cancer risk range and the screening HI is well below 1 for each age group (higher value is 0.1 for the Adolescent Trespasser potentially exposed to surface soil).

5.2.3.2 Future Outdoor Worker

As indicated in **Table 5-1**, cancer risk for the Future Outdoor Worker at Area 3 potentially exposed to surface soil and soil-derived dust ($1 \text{ X } 10^{-6}$) is within the acceptable risk range and the screening HI (0.2) is below 1. The cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5×10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride ($2 \text{ X } 10^{-4}$) and arsenic ($1 \text{ X } 10^{-4}$) and benzene ($7 \text{ X } 10^{-5}$). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Outdoor Worker in Area 3 Surface Soil Scenario) cancer risk ($5 \text{ X } 10^{-4}$) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with surface soil exposures in Area 3 are negligible.

When metals in groundwater are excluded from the risk calculations, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (3×10^{-4}) is above the upper end of the acceptable risk range and the screening HI (5) is above 1. The largest contributors to cancer risk are vinyl chloride ($2 \text{ X } 10^{-4}$) and benzene ($7 \text{ X } 10^{-5}$) and the predominant contributors to HI are 1,2,3-trichlorobenzene (4), -1,2-DCE (1), benzene (0.9), and 1,2,4-trichlorobenzene (0.5).

5.2.3.3 Future Indoor Worker

As indicated in **Table 5-1**, cancer risk for the Future Indoor Worker at Area 3 potentially exposed to surface soil and soil-derived dust ($7 \text{ X } 10^{-7}$) is within the acceptable risk range and the screening HI (0.1) is below 1. As was reported for the future outdoor worker, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5×10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride ($2 \text{ X } 10^{-4}$) and arsenic ($1 \text{ X } 10^{-4}$) and benzene ($7 \text{ X } 10^{-5}$). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Indoor Worker at Area 3 Surface Soil Scenario) cancer risk (5 X 10^{-4}) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with surface soil exposures in Area 3 are negligible.

5.2.3.4 Hypothetical Future On-Site Resident

As indicated in **Table 5-1**, total cancer risk for the Hypothetical Future On-Site Resident (child and adult) at Area 3 potentially exposed to surface soil (9 x 10^{-6}) is within the acceptable cancer risk range and the screening HI (3) is above 1 for the child (and at 0.4, less than 1 for the adult). The predominant contributor to the child HI is vanadium (3).

The cancer risk associated with hypothetical future ingestion and dermal contact with potable water obtained from groundwater within the CPS plume, and inhalation of volatiles during showering (1 x 10^{-2}) is above the upper end of the acceptable risk range and the screening HI (2725) is well above 1. The cancer risk and Hazard Index associated with inhalation of volatiles during showering represent more than 75% of the total potable water use risks, with ingestion and dermal risks contributing the remainder of the risks. The largest contributors to potable water (ingestion, dermal, and inhalation exposures) cancer risk are benzene (3.8 X 10^{-3}), 1,4-dichlorobenzene (3.1 X 10^{-3}), vinyl chloride (1.6 X 10^{-3}), 1,2-dichloroethane (7.1 X 10^{-4}), arsenic (4 X 10^{-4}), and1,1,2,2-tetrachloroethane (1.7 X 10^{-4}). The largest contributors to potable water (ingestion, dermal, and inhalation) HI are 1,2,4-trichlorobenzene (1490), vanadium (343), chlorobenzene (199), mercury (143), benzene (89), copper (85), thallium (50), zinc (48), 1,2-dichloropropane (33), iron (31), 1,2,3-trichlorobenzene(25), 1,2,4-trichlorobenzene (24), 1,2-dichloroethane (21), o-xylene (19), 1,1,2-trichloroethane (19), 1,2-dichlorobenzene (16), xylenes, total (15), naphthalene (10), toluene (9), cis 1,2-DCE (7), cadmium (7), methylene chloride (6), vinyl chloride (5), aniline (4), antimony (4), arsenic (4), aluminum (4), trans-1,2-DCE (3), ethylbenzene (3), 1,4-dichlorobenzene(2), and 1,3-dichlorobenzene (1).

The total receptor (Hypothetical Future Resident (child and adult) in Area 3 Surface Soil Scenario) cancer risk (1 X 10^{-2}) is above the upper end of the acceptable risk range and the total receptor (child) screening HI (2725) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater (particularly inhalation of volatiles during showering). The risks associated with surface soil exposures in Area 3 are negligible (vanadium (predominant contributor to HI) concentrations in surface soil are consistent with background conditions).

5.2.4 Combined Soil (0 – 10 ft bgs) Area 1 Exposure Scenarios

Current and future land use receptors evaluated for Area 1 include current and future trespassers (adolescent and adult) potentially exposed to combined soil, industrial/commercial outdoor workers (potentially exposed to combined soil and soil-derived dust and ingestion at work of potable water derived from groundwater at the Site), industrial/commercial indoor workers (potentially exposed to combined soil, ingestion at work of potable water derived from groundwater at the Site, and potential inhalation of vapors (vapor intrusion)), hypothetical future residents (child and adult) potentially exposed to combined soil, ingestion and dermal contact with potable water derived from groundwater at the Site, and inhalation during showering, and

future construction/excavation workers (potentially exposed to combined soil and inhalation of soil-derived dust and to shallow groundwater in an excavation and inhalation of vapors released from an excavation).

These same receptors have been evaluated for Combined Soil Area 2 Exposure Scenarios (Section 5.2.5) and Combined Soil Area 3 Exposure Scenarios (Section 5.2.6).

5.2.4.1 Current and Future Trespasser

As indicated in **Table 5-2**, total cancer risk for the Current and Future Trespasser (adolescent and adult) at Area 1 potentially exposed to combined soil (1×10^{-6}) is within the acceptable cancer risk range and the screening HI is well below 1 for each age group (higher value is 0.6 for the Adolescent Trespasser potentially exposed to combined soil).

5.2.4.2 Future Outdoor Worker

As indicated in **Table 5-2**, cancer risk for the Future Outdoor Worker at Area 1 potentially exposed to combined soil and soil-derived dust (4×10^{-6}) is within the acceptable risk range and the screening HI (1) is equal to 1. The cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5×10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2×10^{-4}) and arsenic (1×10^{-4}) and benzene (7×10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Outdoor Worker in Area 1 Combined Soil) cancer risk (5×10^{-4}) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with combined soil exposures in Area 1 are negligible.

5.2.4.3 Future Indoor Worker

As indicated in **Table 5-2**, cancer risk for the Future Indoor Worker at Area 1 potentially exposed to combined soil and soil-derived dust (2×10^{-6}) is within the acceptable risk range and the screening HI (0.6) is below 1. As was reported for the future outdoor worker, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5×10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2×10^{-4}), arsenic (1×10^{-4}) and benzene (7×10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Indoor Worker in Area 1 Combined Soil) cancer risk (5×10^{-4}) is above the upper end of the acceptable risk range and the total receptor screening HI (89) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with combined soil exposures in Area 1 are negligible.

5.2.4.4 Hypothetical Future On-Site Resident

As indicated in **Table 5-1**, total cancer risk for the Hypothetical Future On-Site Resident (child and adult) at Area 1 potentially exposed to combined soil (3×10^{-5}) is within the acceptable cancer risk range and the screening HI (16) is above 1 for the child (and at 1.7, above 1 for the adult). The predominant contributors to the child HI are vanadium (12) and trichloroethene (1.8).

The cancer risk associated with hypothetical future ingestion and dermal contact with potable water obtained from groundwater within the CPS plume, and inhalation of volatiles during showering (1×10^{-2}) is above the upper end of the acceptable risk range and the screening HI (2725) is well above 1. The cancer risk and Hazard Index associated with inhalation of volatiles during showering represent more than 75% of the total potable water use risks, with ingestion and dermal risks contributing the remainder of the risks. The largest contributors to potable water (ingestion, dermal, and inhalation exposures) cancer risk are benzene ($3.8 \text{ X } 10^{-3}$), 1,4-dichlorobenzene ($3.1 \text{ X } 10^{-3}$), vinyl chloride ($1.6 \text{ X } 10^{-3}$), 1,2-dichloroethane ($7.1 \text{ X } 10^{-4}$), arsenic ($4 \text{ X } 10^{-4}$), and1,1,2,2-tetrachloroethane ($1.7 \text{ X } 10^{-4}$). The largest contributors to potable water (ingestion, dermal, and inhalation) HI are 1,2,4-trichlorobenzene (1490), vanadium (343), chlorobenzene (199), mercury (143), benzene (89), copper (85), thallium (50), zinc (48), 1,2-dichloropropane (33), iron (31), 1,2,3-trichlorobenzene(25), 1,2,4-trichlorobenzene (24), 1,2-dichloroethane (21), o-xylene (19), 1,1,2-trichloroethane (19), 1,2-dichlorobenzene (16), xylenes, total (15), naphthalene (10), toluene (9), cis 1,2-DCE (7), cadmium (7), methylene chloride (6), vinyl chloride (5), aniline (4), antimony (4), arsenic (4), aluminum (4), trans-1,2-DCE (3), ethylbenzene (3), 1,4-dichlorobenzene(2), and 1,3-dichlorobenzene (1).

The total receptor (Hypothetical Future Resident (child and adult) in Area 1 Combined Soil Scenario) cancer risk ($1 \text{ X } 10^{-2}$) is above the upper end of the acceptable risk range and the total receptor (child) screening HI (2725) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater (particularly inhalation of volatiles during showering). The cancer risks associated with combined soil exposures in Area 1 are within the acceptable risk range and the HI for combined soil exposures is slightly above 1 (vanadium (predominant contributor to HI) concentrations in combined soil are consistent with background conditions and trichloroethene HI is slightly above 1).

5.2.4.5 Future Construction Worker

As indicated in **Table 5-2**, cancer risk for the Future Construction Worker at Area 1 potentially exposed to combined soil and soil-derived dust ($6 \text{ X } 10^{-7}$) is below the acceptable risk range and the screening HI is equal to 1). The cancer risk associated with incidental ingestion and dermal contact with shallow groundwater in an excavation and the inhalation of volatiles released from shallow groundwater in an excavation ($1 \text{ X } 10^{-3}$) is above the acceptable risk range and the screening HI (230) is orders of magnitude above 1. Cancer risk and HI for ingestion and dermal contact with groundwater are negligible contributors to the groundwater risks. <u>Virtually all of the risks for the construction worker are associated with potential inhalation exposures (VOCs released from shallow groundwater) evaluated using a trench model (cancer risk of $1 \text{ X } 10^{-3}$ and HI = 230)</u>. Benzene is the predominant cancer risk contributor ($1 \text{ X } 10^{-3}$) and the largest contributors to the HI are benzene (140), chlorobenzene (45), xylenes (16), 1,2,4-trichlorobenzene (11), vinyl chloride (7.1), toluene (5.1), and 1,4-dichlorobenzene (1.5).

The total receptor (Future Construction Worker in Area 1 Combined Soil) cancer risk (1 X 10^{-3}) is above the acceptable risk range and the screening HI (230) is orders of magnitude above 1.

5.2.5 Combined Soil (0 – 10 ft bgs) Area 2 Exposure Scenarios

5.2.5.1 Current and Future Trespasser

As indicated in **Table 5-2**, total cancer risk for the Current and Future Trespasser (adolescent and adult) at Area 2 potentially exposed to combined soil (1 x 10^{-6}) is within the acceptable cancer risk range and the screening HI is well below 1 for each age group (higher value is 0.4 for the Adolescent Trespasser potentially exposed to combined soil).

5.2.5.2 Future Outdoor Worker

As indicated in **Table 5-2**, cancer risk for the Future Outdoor Worker at Area 2 potentially exposed to combined soil and soil-derived dust (3 X 10^{-6}) is within the acceptable risk range and the screening HI (0.7) is less than 1. The cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2 X 10^{-4}), arsenic (1 X 10^{-4}) and benzene (7 X 10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Outdoor Worker in Area 2 Combined Soil) cancer risk (5 X 10^{-4}) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with combined soil exposures in Area 2 are negligible.

5.2.5.3 Future Indoor Worker

As indicated in **Table 5-2**, cancer risk for the Future Indoor Worker at Area 2 potentially exposed to combined soil and soil-derived dust (1 X 10^{-6}) is within the acceptable risk range and the screening HI (0.4) is below 1. As was reported for the future outdoor worker, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5 x 10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride (2 X 10^{-4}), arsenic (1 X 10^{-4}) and benzene (7 X 10^{-5}). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1). The cancer risk (7 X 10^{-7}) associated potential future indoor inhalation of vapors (based on indoor air data from the currently vacant building in Area 2) is within the acceptable risk range and the corresponding Hazard Index (0.1) is well below 1.

The total receptor (Future Indoor Worker in Area 2 Combined Soil) cancer risk (5 X 10^{-4}) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with combined soil exposures in Area 2 are negligible.

5.2.5.4 Hypothetical Future On-Site Resident

As indicated in **Table 5-2**, total cancer risk for the Hypothetical Future On-Site Resident (child and adult) at Area 2 potentially exposed to combined soil (3×10^{-5}) is within the acceptable cancer risk range and the screening HI (10) is above 1 for the child (and at 1.1, slightly above 1 for the adult). The predominant contributors to the child HI are vanadium (8.7) and thallium (1.2). The concentrations of these metals are consistent with background concentrations.

The cancer risk associated with hypothetical future ingestion and dermal contact with potable water obtained from groundwater within the CPS plume, and inhalation of volatiles during showering (1×10^{-2}) is above the upper end of the acceptable risk range and the screening HI (2725) is well above 1. The cancer risk and Hazard Index associated with inhalation of volatiles during showering represent more than 75% of the total potable water use risks, with ingestion and dermal risks contributing the remainder of the risks. The largest contributors to potable water (ingestion, dermal, and inhalation exposures) cancer risk are benzene ($3.8 \text{ X } 10^{-3}$), 1,4-dichlorobenzene ($3.1 \text{ X } 10^{-3}$), vinyl chloride ($1.6 \text{ X } 10^{-3}$), 1,2-dichloroethane ($7.1 \text{ X } 10^{-4}$), arsenic ($4 \text{ X } 10^{-4}$), and1,1,2,2-tetrachloroethane ($1.7 \text{ X } 10^{-4}$). The largest contributors to potable water (ingestion, dermal, and inhalation) HI are 1,2,4-trichlorobenzene (1490), vanadium (343), chlorobenzene (199), mercury (143), benzene (89), copper (85), thallium (50), zinc (48), 1,2-dichloropropane (33), iron (31), 1,2,3-trichlorobenzene(25), 1,2,4-trichlorobenzene (24), 1,2-dichloroethane (21), o-xylene (19), 1,1,2-trichloroethane (19), 1,2-dichlorobenzene (16), xylenes, total (15), naphthalene (10), toluene (9), cis 1,2-DCE (7), cadmium (7), methylene chloride (6), vinyl chloride (5), aniline (4), antimony (4), arsenic (4), aluminum (4), trans-1,2-DCE (3), ethylbenzene (3), 1,4-dichlorobenzene(2), and 1,3-dichlorobenzene (1).

The total receptor (Hypothetical Future Resident (child and adult) in Area 2 Combined Soil Scenario) cancer risk ($1 \text{ X } 10^{-2}$) is above the upper end of the acceptable risk range and the total receptor (child) screening HI (2725) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater (particularly inhalation of volatiles during showering). **The risks associated with combined soil exposures in Area 2 are negligible (vanadium and thallium (predominant contributors to HI) concentrations in surface soil are consistent with background conditions).**

5.2.5.5 Future Construction Worker

As indicated in **Table 5-2**, cancer risk for the Future Construction Worker at Area 2 potentially exposed to combined soil and soil-derived dust ($4 \text{ X } 10^{-7}$) is below the acceptable risk range and the screening HI (0.4) is below 1). The cancer risk associated with incidental ingestion and dermal contact with shallow groundwater in an excavation and the inhalation of volatiles released from groundwater in an excavation ($5 \text{ X } 10^{-7}$) is below the acceptable risk range and the screening HI (0.1) is below 1. Cancer risk and HI for ingestion and dermal contact with groundwater and inhalation of volatiles in an excavation are negligible.

The total receptor (Future Construction Worker in Area 2 Combined Soil) cancer risk ($9 \text{ X } 10^{-7}$) is below the acceptable risk range and the screening HI (0.5) is below 1.

5.2.6 Combined Soil (0 – 10 ft bgs) Area 3 Exposure Scenarios

5.2.6.1 Current and Future Trespasser

As indicated in **Table 5-2**, total cancer risk for the Current and Future Trespasser (adolescent and adult) at Area 3 potentially exposed to combined soil (5×10^{-7}) is below the acceptable cancer risk range and the screening HI is well below 1 for each age group (higher value is 0.4 for the Adolescent Trespasser potentially exposed to combined soil).

5.2.6.2 Future Outdoor Worker

As indicated in **Table 5-2**, cancer risk for the Future Outdoor Worker at Area 3 potentially exposed to combined soil and soil-derived dust ($2 \text{ X } 10^{-6}$) is within the acceptable risk range and the screening HI (0.7) is below 1. The cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5×10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride ($2 \text{ X } 10^{-4}$) and arsenic ($1 \text{ X } 10^{-4}$) and benzene ($7 \text{ X } 10^{-5}$). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Outdoor Worker in Area 3 Combined Soil) cancer risk ($5 \text{ X } 10^{-4}$) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with combined soil exposures in Area 3 are negligible.

5.2.6.3 Future Indoor Worker

As indicated in **Table 5-2**, cancer risk for the Future Indoor Worker at Area 3 potentially exposed to combined soil and soil-derived dust ($1 \text{ X } 10^{-6}$) is within the acceptable risk range and the screening HI (0.4) is below 1. As was reported for the future outdoor worker, the cancer risk associated with future ingestion, at work, of potable water obtained from groundwater within the CPS plume (5×10^{-4}) is above the upper end of the acceptable risk range and the screening HI (88) is well above 1. The largest contributors to potable water ingestion cancer risk are vinyl chloride ($2 \text{ X } 10^{-4}$), arsenic ($1 \text{ X } 10^{-4}$) and benzene ($7 \text{ X } 10^{-5}$). The largest contributors to potable water ingestion HI are vanadium (40), copper (10), iron (5), thallium (8), and zinc (7) and cis-1,2-DCE (1).

The total receptor (Future Indoor Worker in Area 3 Combined Soil) cancer risk ($5 \text{ X } 10^{-4}$) is above the upper end of the acceptable risk range and the total receptor screening HI (88) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater. The risks associated with combined soil exposures in Area 3 are negligible.

5.2.6.4 Hypothetical Future On-Site Resident

As indicated in **Table 5-2**, total cancer risk for the Hypothetical Future On-Site Resident (child and adult) at Area 3 potentially exposed to combined soil (1×10^{-5}) is within the acceptable cancer risk range and the screening HI (10) is above 1 for the child (and at 1.1, slightly above 1 for the

adult). The predominant contributor to the child HI is vanadium (9). The vanadium concentrations in combined soil are consistent with background.

The cancer risk associated with hypothetical future ingestion and dermal contact with potable water obtained from groundwater within the CPS plume, and inhalation of volatiles during showering (1 x 10^{-2}) is above the upper end of the acceptable risk range and the screening HI (2725) is well above 1. The cancer risk and Hazard Index associated with inhalation of volatiles during showering represent more than 75% of the total potable water use risks, with ingestion and dermal risks contributing the remainder of the risks. The largest contributors to potable water (ingestion, dermal, and inhalation exposures) cancer risk are benzene (3.8 X 10^{-3}), 1,4-dichlorobenzene (3.1 X 10^{-3}), vinyl chloride (1.6 X 10^{-3}), 1,2-dichloroethane (7.1 X 10^{-4}), arsenic (4 X 10^{-4}), and1,1,2,2-tetrachloroethane (1.7 X 10^{-4}). The largest contributors to potable water (ingestion, dermal, and inhalation) HI are 1,2,4-trichlorobenzene (1490), vanadium (343), chlorobenzene (199), mercury (143), benzene (89), copper (85), thallium (50), zinc (48), 1,2-dichloropropane (33), iron (31), 1,2,3-trichlorobenzene(25), 1,2,4-trichlorobenzene (24), 1,2-dichloroethane (21), o-xylene (19), 1,1,2-trichloroethane (19), 1,2-dichlorobenzene (16), xylenes, total (15), naphthalene (10), toluene (9), cis 1,2-DCE (7), cadmium (7), methylene chloride (6), vinyl chloride (5), aniline (4), antimony (4), arsenic (4), aluminum (4), trans-1,2-DCE (3), ethylbenzene (3), 1,4-dichlorobenzene(2), and 1,3-dichlorobenzene (1).

The total receptor (Hypothetical Future Resident (child and adult) in Area 3 Combined Soil Scenario) cancer risk (1 X 10^{-2}) is above the upper end of the acceptable risk range and the total receptor (child) screening HI (2725) is well above 1. These risks are almost completely associated with the hypothetical future potable use of groundwater (particularly inhalation of volatiles during showering). The risks associated with combined soil exposures in Area 3 are negligible (vanadium (predominant contributor to HI) concentrations in combined soil are consistent with background conditions).

5.2.6.5 Future Construction Worker

As indicated in **Table 5-2**, cancer risk for the Future Construction Worker at Area 3 potentially exposed to combined soil and soil-derived dust (3 X 10^{-7}) is below the acceptable risk range and the screening HI (0.3) is below 1). The cancer risk associated with incidental ingestion and dermal contact with shallow groundwater in an excavation and the inhalation of volatiles released from groundwater in an excavation (6 X 10^{-10}) is well below the acceptable risk range and the screening HI (0.00007) is orders of magnitude below 1.

The total receptor (Future Construction Worker in Area 3 Combined Soil) cancer risk (3 X 10^{-7}) is below the acceptable risk range and the screening HI (0.3) is below 1.

5.2.7 Combined Soil (0 – 10 ft bgs) Area 1 Sewer Line Exposure Scenarios

5.2.7.1 Future Construction/Utility Worker

As indicated in **Table 5-2**, cancer risk for the Future Construction/Utility Worker at the Sewer Line at Area 1 potentially exposed to combined soil and soil-derived dust (4 X 10^{-7}) is below the acceptable risk range and the screening HI (0.4) is below 1). The cancer risk associated with

incidental ingestion and dermal contact with shallow groundwater in an excavation and the inhalation of volatiles released from groundwater in an excavation (1 X 10^{-3}) is above the acceptable risk range and the screening HI (230) is orders of magnitude above 1. Cancer risk and HI for ingestion and dermal contact with groundwater are negligible contributors to the groundwater risks. Virtually all of the risks are associated with potential inhalation exposures evaluated using a trench model. Benzene is the predominant contributor to the cancer risk. Benzene (140), chlorobenzene (45), xylenes (16), 1,2,4-trichlorobenzene (11), vinyl chloride (7.1), toluene (5.1), naphthalene (4.2), and 1,4-dichlorobenzene (1.4) are the predominant contributors to this inhalation HI.

The total receptor (Future Construction/Utility Worker at the Sewer Line at Area 1 Combined Soil) cancer risk (1 X 10^{-3}) is above the acceptable risk range and the screening HI (230) is above 1.

5.2.8 Combined Soil (0 – 10 ft bgs) Area 2 Sewer Line Exposure Scenarios

5.2.8.1 Future Construction/Utility Worker

As indicated in **Table 5-2**, cancer risk for the Future Construction/Utility Worker at the Sewer Line at Area 2 potentially exposed to combined soil and soil-derived dust (4 X 10^{-7}) is below the acceptable risk range and the screening HI (0.4) is below 1). The cancer risk associated with incidental ingestion and dermal contact with shallow groundwater in an excavation and the inhalation of volatiles released from groundwater in an excavation (5 X 10^{-7}) is below the acceptable risk range and the screening HI (0.5) is below 1.

The total receptor (Future Construction/Utility Worker at the Sewer Line at Area 2 Combined Soil) cancer risk (8 X 10^{-7}) is below the acceptable risk range and the screening HI (0.5) is below 1.

5.2.9 Combined Soil (0 – 10 ft bgs) Area 3 Sewer Line Exposure Scenarios

5.2.9.1 Future Construction/Utility Worker

As indicated in **Table 5-2**, cancer risk for the Future Construction/Utility Worker at the Sewer Line at Area 3 potentially exposed to combined soil and soil-derived dust (4 X 10^{-7}) is below the acceptable risk range and the screening HI (0.4) is below 1). The cancer risk associated with incidental ingestion and dermal contact with shallow groundwater in an excavation and the inhalation of volatiles released from groundwater in an excavation (6 X 10^{-10}) is below the acceptable risk range and the screening HI (0.00007) is orders of magnitude below 1.

The total receptor (Future Construction/Utility Worker at the Sewer Line at Area 3 Combined Soil) cancer risk (4 X 10^{-7}) is below the acceptable risk range and the screening HI (0.4) is below 1.

6.0 UNCERTAINTY ANALYSIS

This subsection identifies and discusses uncertainties in the risk assessment. These uncertainties are identified to provide perspective on the quantitative risk estimates. Unlike some other assessments, risk assessments rely not just on measured or certain facts, but also on assumptions and estimates, and also policy decisions, in the face of limited or nonexistent data. Historically, many risk assessments have used highly conservative assumptions in the place of unavailable data, with the net result often being a substantial overestimation of potential risks. It is important, however, to evaluate the assumptions and choices made in any risk assessment to evaluate their impact on the results and conclusions.

The following types of uncertainties should be considered in any HHRA:

- uncertainties in the nature and extent of release of COPC;
- uncertainties associated with the identification of future land uses and potential receptors;
- uncertainties in estimating the frequency, duration, and magnitude of possible exposures (including the identification of representative EPCs in environmental media);
- uncertainties associated with assigning exposure parameters to a heterogeneous population that includes both men and women and young and old (e.g., BW and ingestion rates);
- uncertainties in estimating CSFs and URs and/or non-carcinogenic measures of toxicity (e.g., RfDs or RfCs); and
- uncertainties in the assumption of additivity of risks across multiple COPCs and exposure pathways.

6.1 Data Evaluation and Selection of COPCs

6.1.1 Nature and Extent of Releases to Environmental Media

The investigations of the CPS/Madison Superfund site have been comprehensive and there are representative analytical data for soil, groundwater, soil vapor, and indoor air that have been considered in the BHHRA. The investigations have included the comprehensive standard suite of analytical parameters (metals and inorganics, VOCs, SVOCs, and pesticides and PCBs).

Investigations have focused on known sources, migration pathways, and potential exposure points. The RI sampling events have provided representative spatial coverage for soil in all three exposure areas at the former CPS property (Areas 1, 2, and 3) as well shallow groundwater at the former CPS property and the CPS/Madison groundwater plume. The nature and extent of releases to environmental media has been well characterized.

The RI Report includes an evaluation of vanadium and thallium in soils at the Site. The available data indicate that concentrations in soil samples are consistent with background conditions. The risks associated with these analytes would therefore be associated with background conditions, rather than a release.

6.1.2 Selection of Data for Use in Risk Assessment

The selection of data has been completed in a manner consistent with the objectives of the BHHRA. With the exception of soils data associated with samples collected at depths greater than 10 ft bgs (inaccessible soils) and QA/QC samples that have been used in the data validation activities, the analytical data presented in the RI Report and contained within the Site database were considered for inclusion in this BHHRA. For groundwater, the most recent analytical data have generally been selected for use in the risk assessment. The selection of data for use in the BHHRA appears to be a risk-neutral activity.

6.1.3 Selection of COPCs

The selection of COPCs has been conducted in a manner consistent with USEPA guidance (USEPA, 1989) and with standard industry practice. The approach used for selection of COPCs has little impact on the results and conclusions of the risk assessment (unlikely to result in any substantial overestimation or underestimation of risks).

As requested by USEPA, in the absence of speciation analytical data for chromium, total chromium analytical data for surface soil and shallow subsurface soil have been evaluated in the COPC selection process using the residential RSL (0.29 mg/kg) for chromium (VI). The selection of chromium as a COPC is therefore based on a very conservative assumption. If the chromium (III), insoluble salts RSL (12,000 mg/kg) had been employed, chromium would not have been selected as a COPC. The history of activities at the CPS facility does not indicate any expected release of hexavalent chromium. In soil samples, total chromium concentrations ranged from 0.0081 mg/kg to 144 mg/kg. The mean and median total chromium concentrations in soil samples were 14.9 mg/kg and 18.0 mg/kg respectively.

6.2 Exposure Assessment

6.2.1 Land Uses and Receptors

The property has historically been in industrial use and it is currently not in any active use. The trespasser is the current land use receptor that has been evaluated in the BHHRA. The current and assumed future land uses are consistent with the current owner's expectations and an institutional control will be implemented to maintain Areas 1 and 2 of the property in industrial/commercial use. The BHHRA has, however, evaluated a hypothetical future residential land use scenario for Areas 1, 2, and 3 in order to provide assessment of the full range of potential land uses, to assist in determining the content of any land use restrictions that might be applied to the former CPS property, and to assist in deriving remedial action objectives, especially with respect to groundwater.

The evaluation of hypothetical future use of groundwater from the CPS/Madison plume is not based on any specific expectation that a potable water supply would be put in place within the plume – but it is based on the understanding that restoration of the groundwater resource to a condition suitable for potable use will be a requirement. The BHHRA will provide a risk component for use in the Feasibility Study.

The groundwater/surface water interaction study concluded that there was not evidence of a significant migration pathway for CPS chemicals of interest. The surface water and sediment of the brook adjacent to the CPS site provides little opportunity for any recreational activity (poor access and very shallow). No sediment data were available for a screening of human health risk. The risks associated with potential surface water and sediment exposures was not conducted in the BHHRA.

6.2.2 Estimating the Frequency, Duration, and Magnitude of Possible Exposures

The BHHRA utilized exposure parameter values (frequency of exposure, duration of exposure, skin surface areas exposed, soil and groundwater ingestion rates, etc.), obtained primarily from USEPA publications, that are generally representative of reasonable maximum exposure scenarios. However, in some instances, (such as the inhalation shower model for residential receptors and the trench model for the construction worker), the combination of exposure parameters and fate and transport estimates likely result in substantial overestimates of exposures and associated cancer risks and noncancer hazards.

There is an uncertainty associated with the magnitude of dermal exposures associated with several metals in soil. There is insufficient information available to calculate dermal exposures and dermal risks associated with aluminum, antimony, chromium, cobalt, copper, manganese, thallium, and vanadium in soil (uncertainty in absorption efficiency from soil through the skin). USEPA RAGS Part E guidance (USEPA, 2004) indicates for inorganics, the speciation of the compound is critical to the dermal absorption and there are too little data to extrapolate a reasonable default value to be applied for evaluating dermal exposure. The guidance suggests the pathway be evaluated qualitatively. Therefore, there is some underestimation of risk associated with dermal exposure to soil for these COPCs.

There are no default USEPA dermal absorption values recommended for VOCs because they would tend to be volatilized from the soil on skin. This suggests that dermal exposure for volatile soil COPCs is likely to be minimal. The absence of a quantitative evaluation of this pathway for VOCs is unlikely to have a substantial impact on the results and conclusions of the HHRA.

The vapor intrusion pathway has been evaluated using vapor intrusion screening values (from USEPA and NJDEP) for groundwater, soil vapor, and indoor air. There is one vacant building at the CPS property and the active manufacturing buildings on the Madison Industries property.

Risks have been characterized for the vapor intrusion/indoor air pathway using two different approaches. First, groundwater, sub-slab soil vapor, and indoor air (vacant on-property building)

data have been compared to NJDEP screening values. Second, sub-slab soil vapor and indoor air data have been evaluated using the USEPA Region II Vapor Intrusion Matrix Tables.

Vapor intrusion for hypothetical future buildings at the CPS and Madison Industries properties has not been quantitatively evaluated in the BHHRA. USEPA guidance indicates that management of vapor intrusion with land use restrictions or requirements for engineering controls of vapor intrusion are the most effective approach for addressing this potential future exposure pathway for buildings that might be built and occupied in the future. It is not possible to accurately evaluate potential impacts to indoor air for buildings with unknown locations, construction characteristics, and HVAC configurations.

Consumption of home-grown fruits and vegetables was not quantitatively evaluated in the BHHRA. Therefore, hypothetical future risks associated with soils for a residential scenario involving consumption of fruits and vegetables is likely underestimated in the BHHRA. It is assumed this exposure pathway will be addressed with a land use restriction that would maintain Areas 1 and 2 in industrial/commercial use and that would not allow growing of fruits and vegetables for human consumption.

Inhalation exposures for receptors related to release of soil particulates to ambient air have been evaluated for outdoor workers and construction workers and inhalation of vapors released from soil to ambient air was not evaluated quantitatively. With this migration pathway, vapors are attenuated quickly in the ambient air. It is unlikely that this exposure pathway would result in exposures or risks that approach or are greater than direct contact soil exposures (ingestion and dermal contact).

6.3 Toxicity Assessment

6.3.1 COPCs Without Toxicity Values

There are several detected parameters that were selected as COPCs because there were no RSLs available. For most of those COPCs, there are no readily available published toxicity values from Tier I, II, or III data sources. Those COPCs include, but are not limited to, for soil, 1,3-dichlorobenzene, methyl cyclohexane, p-isopropyltoluene, and t-butyl alcohol, and for groundwater 1,3-dichlorobenzene , 3-methylhexane , methyl cyclohexane , dimethylsulfide , p-isopropyltoluene , sulfur dioxide , tert butyl alcohol , and 3-nitroaniline . Obviously, if no toxicity values are available and no risks were calculated for those parameters, the HHRA would underestimate risk for those parameters.

Some toxicity values were obtained from PPRTV Document Appendices. These values were selected, but confidence in thewse values is not as great as for IRIS values or the actual PPRTVs.

6.3.2 Hexavalent Chromium

The site investigation did not include laboratory analysis of soil or groundwater samples for hexavalent chromium. In the COPC selection process, consistent with a USEPA comment on an interim HHRA deliverable, the hexavalent chromium RSLs have been used to screen total chromium (un-speciated) analytical data. Chromium was selected as a COPC in surface soil, combined soil, and in groundwater. In the BHHRA, toxicity values for chromium III have been utilized to assess chromium exposure risks.

If some portion of the measured chromium in soil and groundwater samples was the hexavalent form, the application of chromium toxicity factors may underestimate cancer risk associated with the soil and/or groundwater exposures. However, the available information indicates that this uncertainty does not have a substantial impact on the results and conclusions of the BHHRA.

The industrial soil RSL for hexavalent chromium (6.3 mg/kg) is based on a cancer risk of 1×10^{6}. The hexavalent chromium soil concentration corresponding to a noncancer HQ of 1 for industrial soil is 35,000 mg/kg. The soil EPCs for chromium (total) at the site range from 14.58 mg/kg to 46.11 mg/kg. Even if it was very conservatively assumed that all of the chromium (total) was in fact hexavalent chromium, the industrial land use cancer risks associated with the range of soil EPCs for chromium (total) would range from 2×10^{-6} to 7×10^{-6}, well below the upper end of the allowable cancer risk range. The corresponding HQs for the range of soil EPCs would be 0.0004 to 0.001 (assuming all of the chromium in soil is in the hexavalent form). The lack of analytical data for hexavalent chromium in soil is not a substantial data gap for the BHHRA.

Although the May 2014 hexavalent chromium RSL is based on the assumed carcinogenicity of hexavalent chromium via ingestion, there is not an oral CSF for hexavalent chromium in the current USEPA IRIS file.

Until recently, there has not been scientific evidence that hexavalent chromium is carcinogenic by oral or dermal routes of exposure. Hexavalent chromium has long been considered carcinogenic via inhalation exposure. A 2008 National Toxicology Program (NTP) animal study (NTP, 2008) has provided information that hexavalent chromium is carcinogenic in mice exposed via drinking water. Based on the one 2008 NTP study, the New Jersey Department of Environmental Protection (NJDEP) has calculated an oral CSF to be used in HHRAs submitted to NJDEP under their state regulatory program (NJDEP, 2009). In September 2010, the USEPA released an External Draft for Peer Review TOXICOLOGICAL REVIEW OF HEXAVALENT CHROMIUM (CAS No. 18540-29-9) In Support of Summary Information on the Integrated Risk Information System (IRIS) (USEPA, 2010d) that contains a proposal to update the IRIS file with respect to the ingestion exposure route. The proposed revision identifies hexavalent chromium as “likely to be carcinogenic in humans” by ingestion and it includes a proposed oral CSF of 0.5 (mg/kg/day)-1. The document also proposes a revised oral RfD of 0.0009 mg/kg/day (current value in IRIS is 0.003 mg/kg/day). **The external review process and final decision-making with respect to adding the proposed oral CSF and proposed oral RfD for hexavalent chromium has not yet been completed.**

In April 2014, USEPA did release Preliminary Draft Materials in advance of the June 2014 IRIS Science Meeting that will focus, in part, on the IRIS process for hexavalent chromium. Norman

Birchfield of USEPA (NCEA) indicated on April 28, 2014, that USEPA has identified a schedule for incorporation of an oral CSF for hexavalent chromium into the IRIS file within 2 years – but he indicated that schedule is obviously subject to change.

6.4 Risk Characterization

The risks have been calculated and compared to Superfund risk management criteria and benchmarks to draw conclusions concerning the Site-related risks. The procedures applied during this process are consistent with USEPA guidance and current risk assessment practice. The risk characterization procedures do not substantially overestimate or underestimate health risks for current and future land uses.

7.0 RISK ASSESSMENT CONCLUSIONS

The BHHRA has evaluated health risks for current and potential future land uses and activities and associated receptors based on the available analytical data for environmental media at the site. The BHHRA has characterized cancer risk and noncancer hazard associated with exposures to chemicals of potential concern in surface soil (0 – 2 ft bgs) and combined soil (0 – 10 ft bgs) in Areas 1, 2, and 3 of the former CPS property, in shallow groundwater in Areas 1, 2, and 3 of the former CPS property, in groundwater within the CPS/Madison plume, and in indoor air at the vacant building in Area 2. Total cancer risk and total hazard index values have been calculated for each medium for each receptor.

Consistent with USEPA risk assessment guidance, for each receptor evaluated, total cancer risks and total hazard index have been summed across all exposure media and exposure routes to generate a cumulative receptor cancer risk and a cumulative receptor hazard index for each receptor at each exposure point.

Cumulative receptor cancer risk and cumulative receptor hazard index values have been compared to the USEPA allowable cancer risk range of 10^{-6} to 10^{-4} and the hazard index limit of 1 in order to assess the overall need for remediation or management of exposures and risks based on the BHHRA. When the cumulative receptor risk and/or hazard index values are above these limits, the total cancer risk and total hazard index values for each exposure medium are compared to the same risk limits to identify which exposure media may require remediation or management of exposures and risks. Those media are to be evaluated in the Feasibility Study.

Cumulative Receptor Cancer Risk and Cumulative Receptor Hazard Index values <u>below</u> USEPA risk limits were identified for:

- the Current and Potential Future Trespasser (adolescent and adult) exposed to surface soil for Areas 1, 2, and 3,
- the Current and Potential Future Trespasser (adolescent and adult) exposed to combined soil (0 – 10 ft bgs) for Areas 1, 2, and 3,
- the Future Construction Worker exposed to combined soil (0 – 10 ft bgs) and shallow groundwater for Areas 2 and 3,
- the Future Construction/Utility Worker exposed to combined soil (0 – 10 ft bgs) and shallow groundwater for the footprint of the Sewer Line in Areas 2 and 3.

Cumulative Receptor Cancer Risk and Cumulative Receptor Hazard Index values <u>above</u> USEPA risk limits were identified for:

- the Future Outdoor Worker exposed to surface soil and consuming, in the workplace, potable water obtained from groundwater within the CPS/Madison plume (Areas 1, 2, and 3)

  - only consumption in the workplace of potable water obtained from groundwater within the CPS/Madison plume is associated with cancer risk and hazard above USEPA limits.

- the Future Indoor Worker exposed to surface soil and consuming, in the workplace, potable water obtained from groundwater within the CPS/Madison plume (Areas 1, 2, and 3), and indoor air (Area 2)
  - only consumption in the workplace of potable water obtained from groundwater within the CPS/Madison plume is associated with cancer risk and hazard above USEPA limits.
- the Hypothetical Future Resident exposed to surface soil and to potable water (ingestion, dermal contact, and inhalation of vapors during showering) obtained from groundwater within the CPS/Madison plume (Areas 1, 2, and 3)
  - only exposure to potable water (ingestion, dermal contact, and inhalation of vapors during showering) obtained from groundwater within the CPS/Madison plume is associated with cancer risk and hazard above USEPA limits. Hazard Index above 1 for soil exposure is associated with background concentrations of metals.
- the Future Outdoor Worker exposed to combined soil (0 – 10 ft bgs) and consuming, in the workplace, potable water obtained from groundwater within the CPS/Madison plume (Areas 1, 2, and 3)
  - only consumption in the workplace of potable water obtained from groundwater within the CPS/Madison plume is associated with cancer risk and hazard above USEPA limits.
- the Future Indoor Worker exposed to combined soil (0 – 10 ft bgs) and consuming, in the workplace, potable water obtained from groundwater within the CPS/Madison plume (Areas 1, 2, and 3), and indoor air (Area 2)
  - only consumption in the workplace of potable water obtained from groundwater within the CPS/Madison plume is associated with cancer risk and hazard above USEPA limits.
- the Hypothetical Future Resident exposed to combined soil (0 – 10 ft bgs) and to potable water (ingestion, dermal contact, and inhalation of vapors during showering) obtained from groundwater within the CPS/Madison plume (Areas 1, 2, and 3)
  - only exposure to potable water (ingestion, dermal contact, and inhalation of vapors during showering) obtained from groundwater within the CPS/Madison plume is associated with cancer risk and hazard above USEPA limits. Hazard Index above 1 for soil exposure is associated with background concentrations of metals.
- Future Construction Worker exposed to combined soil (0 – 10 ft bgs) and shallow groundwater (incidental ingestion, dermal contact, and inhalation of vapors released from groundwater) in Area 1
  - Only inhalation of vapors released from shallow groundwater in an excavation is associated with cancer risk and hazard above USEPA limits.

- the Future Construction/Utility Worker exposed to combined soil (0 – 10 ft bgs) and shallow groundwater (incidental ingestion, dermal contact, and inhalation of vapors released from groundwater) for the footprint of the Sewer Line in Area 1,
    - Only inhalation of vapors released from shallow groundwater in an excavation is associated with cancer risk and hazard above USEPA limits.

8.0 REFERENCES

ATSDR, 1998. *Public Health Assessment, CPS Chemical/Madison Industries, Old Bridge Township, Middlesex County, NJ,* Agency for Toxic Substances and Disease Registry. December.

ATSDR, 2009. Minimum Risk Levels. December. www.atsdr.cdc.gov/mrls.htm

BASF, 2011. *Site Characterization Summary Report, CPS/Madison Superfund Site, Old Bridge, Middlesex County, New Jersey.*

BASF, 2013. *Remedial Investigation Report*. CPS/Madison Superfund Site, Old Bridge, Middlesex County, New Jersey. EPA ID Number: NJD002141190.

CALEPA, 2013. CALEPA Toxicity Values obtained from: http://www.oehha.ca.gov/risk/chemicalDB//index.asp. November 2013.

MACTEC, 2009a. *On-Site Vapor Intrusion Investigation Report, Soil Gas and Indoor Air Sampling Results, CPS/Madison Superfund Site, Old Bridge Township, Middlesex County, New Jersey*, December.

MACTEC, 2009b. *Off-Site Vapor Intrusion Investigation Report, Soil Gas and Indoor Air Sampling Results, CPS/Madison Superfund Site, Old Bridge Township, Middlesex County, New Jersey*, December.

NCEA, 2013. NCEA PPRTVs found at: http://hhpprtv.ornl.gov/

NJDEP, 2009. *Derivation of Ingestion-Based Soil Remediation Criterion for Cr+6 Based on the NTP Chronic Bioassay Data for Sodium Dichromate Dihydrate,* Division of Science, Research and Technology, April 8.

NJDEP, 2013a. *Update to the New Jersey Department of Environmental protection (NJDEP) Vapor Intrusion Screening Levels*, March.

NJDEP, 2013b. *Vapor Intrusion Technical Guidance*, Site Remediation Program, March.

Schaum, J., K. Hoang, R. Kinerson, J. Moya, and R.G.M. Wang. 1994. *Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water.* In: Water Contamination and Health. Marcel Dekker, Inc., New York.

USEPA, 1989. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final)*; Washington, D.C. December.

USEPA, 1997a. *Exposure Factors Handbook, Volume 1, Volume II, Volume III*; National Center for Environmental Assessment. Office of Research and Development; EPA-600/P-95/002Fa, Fb, Fc; Washington, D.C.; August.

USEPA, 1997b. *Health Effects Assessment Summary Tables*. USEPA Solid Waste and Emergency Response, FY 1997 Update. EPA-540-R-97-036. July 1997.

USEPA, 2001. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part D), Final*; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C. December.

USEPA, 2002a. *Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites*. Office of Solid Waste and Emergency Response/Office of Solid Waste and Remedial Response; OSWER 9355.4-24. December.

USEPA, 2002b. *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites*. Office of Solid Waste and Emergency Response/Office of Solid Waste and Remedial Response; OSWER 9285.6-10. December 2002.

USEPA, 2003. *Human Health Toxicity Values in Superfund Risk Assessments*. OSWER No. 9285.7-53, December 2003.

USEPA, 2004. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment, Interim)*; Office of Emergency and Remedial Response; EPA/540/R/99/005; Washington, D.C.

USEPA, 2005a**.** *The CPS/Madison Superfund Site, Administrative Order on Consent for Remedial Investigation and Feasibility Study*" USEPA Index No. II-CERCLA-02-2004-2027.

USEPA, 2005b. *Statement of Work for Remedial Investigation and Feasibility Study at the CPS/Madison Site, Old Bridge, Township, New Jersey*.

USEPA, 2005c. "Guidelines for Carcinogen Risk Assessment, Final"; Risk Assessment Forum; EPA/630/P-03/001F; Washington, D.C. March.

USEPA, 2005d. *Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens*; Risk Assessment Forum; EPA/630/R-03/003F; Washington, D.C. March.

USEPA, 2009. *Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment, Final)*; Office of Emergency and Remedial Response; EPA/540/R/070/002; Washington, D.C.

USEPA, 2010. Software for Calculating Upper Confidence Limits. ProUCL Version 4.1.00. Technical Support Center for Monitoring and Site Characterization. www.epa.gov/esd/tsc/software.htm.

USEPA, 2011. *Exposure Factors Handbook: 2011 Edition*; Office of Research and Development, EPA/600/R-090/052F, Washington, DC, September.

USEPA, 2012. *Recommendation for Default Value for Relative Bioavailability of Arsenic in Soil.* OSWER 9200.1-113. December

USEPA, 2013a. Vapor Intrusion Screening Level Calculator, User's Guide.

USEPA, 2013b. USEPA Regional Screening Levels (RSLs) found at

http://www.epa.gov/region09/superfund/prg/

USEPA, 2013c. Integrated Risk Information System (IRIS); on-line database search www.epa.gov/iris. November.

USEPA, 2014 HEX. *Preliminary Materials for the Integrated Risk Information System (IRIS) Toxicological Review of Hexavalent Chromium Part 1: Experimental Animal Studies, [CASRN 18540-29-9]*, EPA/635/R-14/094, Preliminary Materials, April.

TABLES

Table 1-1
Summary of Detected Constituents in Soil Gas and Indoor Air Samples - On-Site Investigation
Second Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

Sample Name: Sample Matrix: Sample Date: Lab ID:		USEPA Commercial SGSLs		Toxicity Basis (NC/C)	SG-01 Soil Gas 9/17/2009 JA28238-9				SG-02 Soil Gas 9/17/2009 JA2838-10				SG-03 Soil Gas 9/17/2009 JA2838-11				SG-03 DUP Soil Gas 9/17/2009 JA28238-12				SG-04 Soil Gas 9/17/2009 JA28238-13			
Compound	CAS #	ppbv	µg/m³		ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1,300,000	NC	0.18	U	1.38	U	0.27	U	2.07	U	0.09	U	0.67	U	0.09	U	0.67	U	0.09	U	0.67	U
1,2,4-Trimethylbenzene	95-63-6		310	NC	14.4		70.8		30.9		151.9		8.8		43.3		15.5		76.2		11.9		58.50	
1,3,5-Trimethylbenzene	108-67-8		na	na	3.3		16.2		7.1		34.9		1.8		8.85		3.3		16.2		2.7		13.27	
2,2,4-Trimethylpentane	540-84-1		na	na	2		9.34		5.2		24.3		0.08	U	0.38	U	0.08	U	0.38	U	0.08	U	0.38	U
2-Butanone (Methyl ethyl ketone)	78-93-3		220,000	NC	5.4		15.9		29.8		87.9		6.1		18.0		7		20.6		19.5		57.5	
2-Hexanone	591-78-6		1,300	NC	1.7		6.95		7.1		29.0		1.3		5.32		1.5		6.13		2.6		10.63	
4-Ethyltoluene (p-Ethyltoluene)	622-96-8		na	na	5.9		29.0		13.6		66.9		3.8		18.7		7.1		34.9		5.3		26.06	
4-Methyl-2-pentanone (MIBK)	108-10-1		130,000	NC	0.36	U	1.48	U	2.6		10.7		0.18	U	0.74	U	0.18	U	0.74	U	1.7		6.97	
Acetone (2-propanone)	67-64-1		1,400,000	NC	9.4		22.3		39.3		93.4		16.7		39.7		16		38.0		78.5		186	
Benzene	71-43-2		16	C	6.3		**20.1**		29.4		**93.9**		4.5		14.4		6		**19.2**		5		15.97	
Carbon disulfide	75-15-0		31,000	NC	0.27	U	0.84	U	25		77.9		0.13	U	0.40	U	0.13	U	0.40	U	6.3		19.6	
Carbon tetrachloride	56-23-5		20	C	0.18	U	1.13	U	0.27	U	1.70	U	0.09	U	0.55	U	0.09	U	0.55	U	0.09	U	0.55	U
Chloroform	67-66-3		5.3	C	6.1		**29.8**		41.4		**202.2**		6.9		**33.7**		4.3		**21.0**		42.9		**209**	
Chloromethane (Methyl chloride)	74-87-3		3,900	NC	0.38	U	0.78	U	0.57	U	1.18	U	0.19	U	0.39	U	0.19	U	0.39	U	0.19	U	0.39	U
Ethanol	64-17-5		na	na	10.6		20.0		22.9		43.1		12.3		23.2		19.3		36.4		23.9		45.0	
Ethyl Acetate	141-78-6		3,100	NC	0.41	U	1.48	U	0.63	U	2.27	U	0.21	U	0.76	U	0.21	U	0.76	U	6.6		23.8	
Ethylbenzene	100-41-4		49	C	16.8		**73.0**		50.9		**221.1**		9.7		42.1		16		**69.5**		14.9		**64.7**	
Isopropyl Alcohol	67-63-0		na	na	0.28	U	0.69	U	0.42	U	1.03	U	0.14	U	0.34	U	0.14	U	0.34	U	4.4		10.82	
Methylene chloride	75-09-2		12,000	C	0.2	U	0.69	U	0.31	U	1.08	U	0.84		2.92		0.92		3.20		0.9		3.13	
MTBE (Methyl tert-butyl ether)	1634-04-4		470	C	0.18	U	0.65	U	0.27	U	0.97	U	0.09	U	0.32	U	0.09	U	0.32	U	1.1		3.97	
n-Heptane	142-82-5		na	na	2		8.20		11.6		47.5		1.4		5.74		1.8		7.38		1.6		6.56	
n-Hexane	110-54-3		31,000	NC	2.9		10.2		11.7		41.2		2		7.05		2.5		8.81		1.6		5.64	
Propylene	115-07-1		130,000	NC	0.49	U	0.84	U	0.75	U	1.29	U	0.25	U	0.43	U	0.25	U	0.43	U	11.1		19.07	
Styrene	100-42-5		44,000	NC	0.15	U	0.64	U	0.23	U	0.98	U	0.07	U	0.32	U	0.07	U	0.32	U	0.49	J	2.09	J
Tertiary butyl alcohol (TBA)	75-65-0		na	na	0.18	U	0.55	U	0.28	U	0.85	U	0.09	U	0.28	U	0.09	U	0.28	U	1.8		5.46	
Tetrachloroethene (PCE)	127-18-4		470	C	138		**936**		15.4		104.4		0.22		1.49		0.34		2.31		0.46		3.12	
			1,800	NC																				
Tetrahydrofuran	109-99-9		88,000	NC	0.25	U	0.74	U	0.39	U	1.15	U	0.13	U	0.38	U	0.13	U	0.38	U	0.13	U	0.38	U
Toluene	108-88-3		220,000	NC	275		1036		702		2645.5		191		719.78		269		1014		179		675	
Trichloroethene (TCE)	79-01-6		30	C	0.52		2.79		0.23	U	1.24	U	0.07	U	0.40	U	0.07	U	0.40	U	0.21		1.13	
			88	NC																				
Trichlorofluoromethane (Freon 11)	75-69-4		31,000	NC	0.17	U	0.96	U	0.26	U	1.46	U	0.09	U	0.48	U	0.58	J	3.26	J	0.6	J	3.37	J
Xylenes (m&p)	1330-20-7		4,400	NC	68.6		298.0		185		803.6		41		178.09		68.1		296		59.9		260	
Xylenes (o)	95-47-6		4,400	NC	17		73.8		42.6		185.0		9.3		40.40		15.7		68.2		14.7		63.85	
Xylenes (total)	1330-20-7		4,400	NC	85.5		371.4		227		986.0		50.3		218.48		83.7		364		74.6		324	

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no USEPA criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level
USEPA VI Screening Levels obtained from USEPA Vapor Intrusion Screening Level (VISL)
Calculator Version 3.2, November 2013 RSL (Regional Screening Level)
NC - Non-carcinogenic
C - Carcinogenic
The soil gas samples presented in this table are sub-slab samples.

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

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Summary of Detected Constituents in Soil Gas and Indoor Air Samples - On-Site Investigation
Second Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

Sample Name: Sample Matrix: Sample Date: Lab ID:		USEPA Commercial IASLs		Toxicity Basis (NC/C)	IA-01 Indoor Air 9/16/2009 JA2838-1				IA-02 Indoor Air 9/16/2009 JA28238-2				IA-03 Indoor Air 9/16/2009 JA28238-3				IA-03 DUP Indoor Air 9/16/2009 JA28238-4				IA-04 Indoor Air 9/16/2009 JA28238-5			
Compound	CAS #	ppbv	µg/m³		ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		130000	NC	0.18	J	1.38	J	0.28		2.15		0.02	U	0.17	U	0.12	J	0.92	J	0.13	J	1.00	J
1,2,4-Trimethylbenzene	95-63-6		31	NC	0.34		1.67		0.44		2.16		0.24		1.18		0.28		1.38		0.53		2.61	
1,3,5-Trimethylbenzene	108-67-8		na	na	0.03	U	0.13	U	0.12	J	0.59	J	0.03	U	0.13	U	0.03	U	0.13	U	0.14	J	0.69	J
2,2,4-Trimethylpentane	540-84-1		na	na	0.32		1.49		0.35		1.63		0.18	J	0.84	J	0.23		1.07		0.35		1.63	
2-Butanone (Methyl ethyl ketone)	78-93-3		22000	NC	0.47		1.39		1.4		4.13		0.4		1.18		1.1		3.24		1.2		3.54	
2-Hexanone	591-78-6		130	NC	0.03	U	0.12	U	0.03	U	0.12	U	0.03	U	0.12	U	0.03	U	0.12	U	0.03	U	0.12	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8		na	na	0.04	U	0.21	U	0.04	U	0.21	U	0.04	U	0.21	U	0.04	U	0.21	U	0.11	J	0.54	J
4-Methyl-2-pentanone (MIBK)	108-10-1		13,000	NC	0.05	U	0.18	U	0.05	U	0.18	U	0.05	U	0.18	U	0.05	U	0.18	U	0.05	U	0.18	U
Acetone (2-propanone)	67-64-1		140,000	NC	7.3		17.34		13.2		31.36		5.4		12.83		14.1		33.49		10.9		25.89	
Benzene	71-43-2		1.6	C	0.29		0.93		0.36		1.15		0.24		0.77		0.25		0.80		0.36		1.15	
Carbon disulfide	75-15-0		3,100	NC	0.03	U	0.11	U	0.03	U	0.11	U	0.03	U	0.11	U	0.68		2.12		0.03	U	0.11	U
Carbon tetrachloride	56-23-5		2	C	0.02	U	0.14	U	0.02	U	0.14	U	0.02	U	0.14	U	0.12	J	0.75	J	0.02	U	0.14	U
Chloroform	67-66-3		0.53	C	0.03	U	0.14	U	0.03	U	0.14	U	0.03	U	0.14	U	0.03	U	0.14	U	0.03	U	0.14	U
Chloromethane (Methyl chloride)	74-87-3		390	NC	0.6		1.24		1.7		3.51		0.7		1.45		0.93		1.92		0.59		1.22	
Ethanol	64-17-5		na	na	11.9		22.42		7.5		14.13		6.1		11.49		7.8		14.70		8		15.07	
Ethyl Acetate	141-78-6		310	NC	0.78		2.81		2.3		8.28		0.05	U	0.18	U	0.05	U	0.18	U	0.05	U	0.18	U
Ethylbenzene	100-41-4		4.9	C	0.15	J	0.65	J	0.19	J	0.83	J	0.12	J	0.52	J	0.11	J	0.48	J	0.22		0.96	
Isopropyl Alcohol	67-63-0		na	na	0.04	U	0.09	U	0.52		1.28		0.04	U	0.09	U	0.04	U	0.09	U	0.04	U	0.09	U
Methylene chloride	75-09-2		1,200	C	0.45		1.56		0.35		1.22		0.37		1.29		0.41		1.42		0.18	J	0.63	J
MTBE (Methyl tert-butyl ether)	1634-04-4		47	C	1.1		3.97		0.68		2.45		0.02	U	0.08	U	0.33		1.19		0.57		2.06	
n-Heptane	142-82-5		na	na	0.22		0.90		0.25		1.02		0.17	J	0.70	J	0.03	U	0.11	U	0.23		0.94	
n-Hexane	110-54-3		3,100	NC	0.95		3.35		0.8		2.82		0.42		1.48		0.39		1.37		0.7		2.47	
Propylene	115-07-1		13000	NC	0.06	U	0.10	U	0.06	U	0.10	U	0.06	U	0.10	U	0.06	U	0.10	U	0.06	U	0.10	U
Styrene	100-42-5		4,400	NC	0.02	U	0.08	U	0.02	U	0.08	U	0.02	U	0.08	U	0.02	U	0.08	U	0.02	U	0.08	U
Tertiary butyl alcohol (TBA)	75-65-0		na	na	0.02	U	0.07	U	0.02	U	0.07	U	0.02	U	0.07	U	0.02	U	0.07	U	0.02	U	0.07	U
Tetrachloroethene (PCE)	127-18-4		47	C	0.02	U	0.14	U	0.11	—	0.75	—	0.02	U	0.14	U	0.11		0.75		0.07		0.47	
			180	NC																				
Tetrahydrofuran	109-99-9		8800	NC	0.03	U	0.09	U	0.03	U	0.09	U	0.03	U	0.09	U	0.21		0.62		0.03	U	0.09	U
Toluene	108-88-3		22,000	NC	0.89		3.35		1.1		4.15		0.76		2.86		0.65		2.45		1.2		4.52	
Trichloroethene (TCE)	79-01-6		3	C	0.02	U	0.10	U	0.02	U	0.10	U	0.02	U	0.10	U	0.02	U	0.10	U	0.02	U	0.10	U
			8.8	NC																				
Trichlorofluoromethane (Freon 11)	75-69-4		3,100	NC	0.73		4.10		0.33		1.85		0.44		2.47		0.73		4.10		0.27		1.52	
Xylenes (m&p)	1330-20-7		440	NC	0.52		2.26		0.69		3.00		0.39		1.69		0.41		1.78		0.8		3.47	
Xylenes (o)	95-47-6		440	NC	0.18	J	0.78	J	0.24		1.04		0.14	J	0.61	J	0.16	J	0.69	J	0.28		1.22	
Xylenes (total)	1330-20-7		440	NC	0.7		3.04		0.93		4.04		0.53		2.30		0.57		2.48		1.1		4.78	

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no USEPA criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level
USEPA VI Screening Levels obtained from USEPA Vapor Intrusion Screening Le
Calculator Version 3.2, November 2013 RSL (Regional Screening Level)
NC - Non-carcinogenic
C - Carcinogenic
The soil gas samples presented in this table are sub-slab samples.

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 1-1
Summary of Detected Constituents in Soil Gas and Indoor Air Samples - On-Site Investigation
Second Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

Sample Name:		IA-BG-05				IA-BG-06				IA-BG-07			
Sample Matrix:		Ambient Air				Ambient Air				Ambient Air			
Sample Date:		9/16/2009				9/16/2009				9/16/2009			
Lab ID:		JA28238-6				JA28238-7				JA28238-8			
Compound	CAS #	ppbv	Q	ug/m^3	Q	ppbv	Q	ug/m^3	Q	ppbv	Q	ug/m^3	Q
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	0.02	U	0.17	U	0.34		2.61		0.02	U	0.17	U
1,2,4-Trimethylbenzene	95-63-6	0.48		2.36		0.23		1.13		0.02	U	0.10	U
1,3,5-Trimethylbenzene	108-67-8	0.12	J	0.59	J	0.03	U	0.13	U	0.03	U	0.13	U
2,2,4-Trimethylpentane	540-84-1	0.23		1.07		0.02	U	0.09	U	0.02	U	0.09	U
2-Butanone (Methyl ethyl ketone)	78-93-3	0.45		1.33		0.72		2.12		0.22		0.65	
2-Hexanone	591-78-6	0.03	U	0.12	U	0.03	U	0.12	U	0.03	U	0.12	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	0.04	U	0.21	U	0.04	U	0.21	U	0.04	U	0.21	U
4-Methyl-2-pentanone (MIBK)	108-10-1	0.05	U	0.18	U	0.12	J	0.49	J	0.05	U	0.18	U
Acetone (2-propanone)	67-64-1	7.1		16.87		8.5		20.19		5.1		12.11	
Benzene	71-43-2	0.24		0.77		0.15	J	0.48	J	0.02	U	0.07	U
Carbon disulfide	75-15-0	0.03	U	0.11	U	0.03	U	0.11	U	0.03	U	0.11	U
Carbon tetrachloride	56-23-5	0.02	U	0.14	U	0.02	U	0.14	U	0.02	U	0.14	U
Chloroform	67-66-3	0.03	U	0.14	U	0.03	U	0.14	U	0.03	U	0.14	U
Chloromethane (Methyl chloride)	74-87-3	0.58		1.20		1		2.07		0.51		1.05	
Ethanol	64-17-5	4		7.54		48.8	E	91.95	E	1.7		3.20	
Ethyl Acetate	141-78-6	0.05	U	0.18	U	0.05	U	0.18	U	0.05	U	0.18	U
Ethylbenzene	100-41-4	0.12	J	0.52	J	0.02	U	0.08	U	0.02	U	0.08	U
Isopropyl Alcohol	67-63-0	0.04	U	0.09	U	2.2		5.41		0.04	U	0.09	U
Methylene chloride	75-09-2	0.03	U	0.09	U	0.57		1.98		0.03	U	0.09	U
MTBE (Methyl tert-butyl ether)	1634-04-4	0.29		1.05		0.02	U	0.08	U	0.02	U	0.08	U
n-Heptane	142-82-5	0.16	J	0.66	J	0.03	U	0.11	U	0.03	U	0.11	U
n-Hexane	110-54-3	0.42		1.48		0.02	U	0.07	U	0.02	U	0.07	U
Propylene	115-07-1	0.06	U	0.10	U	0.06	U	0.10	U	0.06	U	0.10	U
Styrene	100-42-5	0.02	U	0.08	U	0.02	U	0.08	U	0.02	U	0.08	U
Tertiary butyl alcohol (TBA)	75-65-0	0.02	U	0.07	U	0.02	U	0.07	U	0.02	U	0.07	U
Tetrachloroethene (PCE)	127-18-4	0.08		0.54		0.05		0.34		0.02	U	0.14	U
Tetrahydrofuran	109-99-9	0.03	U	0.09	U	0.03	U	0.09	U	0.03	U	0.09	U
Toluene	108-88-3	0.69		2.60		0.36		1.36		0.13	J	0.49	J
Trichloroethene (TCE)	79-01-6	0.02	U	0.10	U	0.02	U	0.10	U	0.02	U	0.10	U
Trichlorofluoromethane (Freon 11)	75-69-4	0.27		1.52		1.1		6.18		0.24		1.35	
Xylenes (m&p)	1330-20-7	0.45		1.95		0.26		1.13		0.05	U	0.20	U
Xylenes (o)	95-47-6	0.16	J	0.69	J	0.11	J	0.48	J	0.02	U	0.10	U
Xylenes (total)	1330-20-7	0.61		2.65		0.37		1.61		0.02	U	0.10	U

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no USEPA criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level
USEPA VI Screening Levels obtained from USEPA Vapor Intrusion Screening Le
Calculator Version 3.2, November 2013 RSL (Regional Screening Level)
NC - Non-carcinogenic
C - Carcinogenic
The soil gas samples presented in this table are sub-slab samples.

Prepared by: LCG 10/10/13
Checked by: KMW 10/14/13

Revised by: KMW 04/29/14
Checked by: MJM 5/20/14

Revised by: LCG 4/10/2015
Checked by: MJM 4/13/2015

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 1-2
Sub-Slab Soil Gas Sample Results - Off-Site Investigation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Name:		USEPA Commercial SGSLs		SG-01OS				SG-02OS				SG-02OS DUP			
Lab ID:				JA28237-1				JA28237-2				JA28237-3			
Sample Date:				9/17/2009				9/17/2009				9/17/2009			
Compound	**CAS #**	ppbv	ug/m^3	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q
1,1,1-Trichloroethane	71-55-6			0.1	U	0.53	U	0.1	U	0.53	U	0.1	U	0.53	U
1,1,2,2-Tetrachloroethane	79-34-5			0.09	U	0.62	U	0.09	U	0.62	U	0.09	U	0.62	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		1,300,000	1.7		13.0		0.09	U	0.67	U	0.09	U	0.67	U
1,1,2-Trichloroethane	79-00-5			0.09	U	0.46	U	0.09	U	0.46	U	0.09	U	0.46	U
1,1-Dichloroethane	75-34-3			0.13	U	0.53	U	0.13	U	0.53	U	0.13	U	0.53	U
1,1-Dichloroethene	75-35-4			0.18	U	0.71	U	0.18	U	0.71	U	0.18	U	0.71	U
1,2,4-Trichlorobenzene	120-82-1			0.26	U	1.93	U	0.26	U	1.93	U	0.26	U	1.93	U
1,2,4-Trimethylbenzene	95-63-6		310	14.8		72.8		11.9		58.5		16.2		79.6	
1,2-Dibromoethane	106-93-4			0.08	U	0.63	U	0.08	U	0.63	U	0.08	U	0.63	U
1,2-Dichlorobenzene	95-50-1			0.15	U	0.90	U	0.15	U	0.90	U	0.15	U	0.90	U
1,2-Dichloroethane	107-06-2			0.14	U	0.57	U	0.14	U	0.57	U	0.14	U	0.57	U
1,2-Dichloroethene (cis)	156-59-2			0.11	U	0.44	U	0.11	U	0.44	U	0.11	U	0.44	U
1,2-Dichloroethene (trans)	156-60-5			0.14	U	0.56	U	0.14	U	0.56	U	0.14	U	0.56	U
1,2-Dichloropropane	78-87-5			0.11	U	0.51	U	0.11	U	0.51	U	0.11	U	0.51	U
1,2-Dichlorotetrafluoroethane (Freon 114	76-14-2			0.09	U	0.62	U	0.09	U	0.62	U	0.09	U	0.62	U
1,3,5-Trimethylbenzene	108-67-8		na	3.1		15.2		2.5		12.3		3.5		17.2	
1,3-Butadiene	106-99-0			0.14	U	0.31	U	0.14	U	0.31	U	0.14	U	0.31	U
1,3-Dichlorobenzene	541-73-1			0.13	U	0.78	U	0.13	U	0.78	U	0.13	U	0.78	U
1,4-Dichlorobenzene	106-46-7			0.13	U	0.78	U	0.13	U	0.78	U	0.13	U	0.78	U
1,4-Dioxane	123-91-1			0.25	U	0.90	U	0.25	U	0.90	U	0.25	U	0.90	U
2,2,4-Trimethylpentane	540-84-1			0.08	U	0.38	U	0.08	U	0.38	U	0.08	U	0.38	U
2-Butanone (Methyl ethyl ketone)	78-93-3		220,000	11.5		33.9		7.4		21.8		6.2		18.3	
2-Chlorotoluene (o-Chlorotoluene)	95-49-8			0.09	U	0.45	U	0.09	U	0.45	U	0.09	U	0.45	U
2-Hexanone	591-78-6		1,300	4.2		17.2		2.5		10.2		2.5		10.2	
3-Chloropropene (allyl chloride)	107-05-1			0.12	U	0.38	U	0.12	U	0.38	U	0.12	U	0.38	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8			6.4		31.5		5.5		27.0		7.7		37.9	
4-Methyl-2-pentanone (MIBK)	108-10-1			0.18	U	0.74	U	0.18	U	0.74	U	0.18	U	0.74	U
Acetone (2-propanone)	67-64-1		1,400,000	18.1		43.0		58.7		139.4		14.6		34.7	
Benzene	71-43-2		16	7		**22.4**		4.4		14.1		7		**22.4**	
Benzyl Chloride	100-44-7			0.13	U	0.67	U	0.13	U	0.67	U	0.13	U	0.67	U
Bromodichloromethane	75-27-4			0.11	U	0.74	U	0.11	U	0.74	U	0.11	U	0.74	U
Bromoethene	593-60-2			0.07	U	0.32	U	0.07	U	0.32	U	0.07	U	0.32	U
Bromoform	75-25-2			0.09	U	0.91	U	0.09	U	0.91	U	0.09	U	0.91	U
Bromomethane (Methyl bromide)	74-83-9			0.1	U	0.37	U	0.1	U	0.37	U	0.1	U	0.37	U
Carbon disulfide	75-15-0			0.13	U	0.40	U	0.13	U	0.40	U	0.13	U	0.40	U
Carbon tetrachloride	56-23-5		20	0.09	U	0.55	U	0.62	J	3.90	J	0.76	J	4.78	J
Chlorobenzene	108-90-7			0.1	U	0.46	U	0.1	U	0.46	U	0.1	U	0.46	U
Chloroethane	75-00-3			0.16	U	0.42	U	0.16	U	0.42	U	0.16	U	0.42	U
Chloroform	67-66-3		5.3	8.8		**43.0**		5.8		**28.3**		7.5		**36.6**	
Chloromethane (Methyl chloride)	74-87-3			0.19	U	0.39	U	0.19	U	0.39	U	0.19	U	0.39	U
cis-1,3-Dichloropropene	10061-01-5			0.08	U	0.35	U	0.08	U	0.35	U	0.08	U	0.35	U
Cyclohexane	110-82-7			0.24	U	0.83	U	0.24	U	0.83	U	0.24	U	0.83	U
Dibromochloromethane	124-48-1			0.14	U	1.19	U	0.14	U	1.19	U	0.14	U	1.19	U

Table 1-2
Sub-Slab Soil Gas Sample Results - Off-Site Investigation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Name:		**USEPA Commercial SGSLs**		SG-01OS		SG-02OS		SG-02OS DUP	
Lab ID:				JA28237-1		JA28237-2		JA28237-3	
Sample Date:				9/17/2009		9/17/2009		9/17/2009	
Compound	**CAS #**	ppbv	ug/m^3	ppbv Q	ug/m3 Q	ppbv Q	ug/m3 Q	ppbv Q	ug/m3 Q
Dichlorodifluoromethane	75-71-8		4,400	0.44 J	2.18 J	0.48 J	2.37 J	0.1 U	0.47 U
Ethanol	64-17-5			25	47.1	33.5	63.1	17.1	32.2
Ethyl Acetate	141-78-6		3,100	22.4	80.6	1.8	6.48	0.21 U	0.76 U
Ethylbenzene	100-41-4		49	18.5	**80.4**	13.9	**60.4**	18.2	**79.1**
Hexachlorobutadiene	87-68-3			0.17 U	1.81 U	0.17 U	1.81 U	0.17 U	1.81 U
Isopropyl Alcohol	67-63-0			17.2	42.3	3	7.37	1.3	3.20
Methylene chloride	75-09-2		12,000	1.3	4.52	0.87	3.02	0.1 U	0.35 U
MTBE (Methyl tert-butyl ether)	1634-04-4			0.09 U	0.32 U	0.09 U	0.32 U	0.09 U	0.32 U
n-Heptane	142-82-5		na	2.4	9.84	1.5	6.15	1.8	7.38
n-Hexane	110-54-3		31,000	2.8	9.87	1.8	6.34	2.2	7.75
Propylene	115-07-1		130,000	0.25 U	0.43 U	1.9 J	3.26 J	0.92 J	1.58 J
Styrene	100-42-5		44,000	0.51 J	2.17 J	0.46 J	1.96 J	0.6 J	2.55 J
Tertiary butyl alcohol (TBA)	75-65-0		na	0.97	2.94	0.09 U	0.28 U	0.09 U	0.28 U
Tetrachloroethene (PCE)	127-18-4		470	0.69	4.68	0.52	3.53	2.1	14.2
Tetrahydrofuran	109-99-9			0.13 U	0.38 U	0.13 U	0.38 U	0.13 U	0.38 U
Toluene	108-88-3		220,000	221	832.8	191	719.8	183	689.6
trans-1,3-Dichloropropene	10061-02-6			0.06 U	0.29 U	0.06 U	0.29 U	0.06 U	0.29 U
Trichloroethene (TCE)	79-01-6		30	0.93	5.00	0.07 U	0.40 U	1.7	9.14
Trichlorofluoromethane (Freon 11)	75-69-4		31,000	0.78 J	4.38 J	0.86	4.83	0.53 J	2.98 J
Vinyl Acetate	108-05-4			0.18 U	0.63 U	0.18 U	0.63 U	0.18 U	0.63 U
Vinyl chloride	75-01-4			0.09 U	0.24 U	0.09 U	0.24 U	0.09 U	0.24 U
Xylenes (m&p)	1330-20-7		4,400	83.3	361.8	64.7	281.0	86.7	376.6
Xylenes (o)	95-47-6		4,400	18.3	79.5	14.4	62.5	19.4	84.3
Xylenes (total)	1330-20-7		4,400	102	443.0	79	343.1	106	460.4

Notes:
SGSLs - Soil Gas Screening Levels
na: not available (no USEPA) criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level
USEPA VI Screening Levels obtained from USEPA Vapor Intrusion Screening Level (VISL)
Calculator Version 3.2, November 2013 RSL (Regional Screening Level)
The soil gas samples presented in this table are sub-slab samples.

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Prepared by: LCG 10/10/2013
Reviewed by: KMW 10/14/2013

Revised by: KMW 04/29/14
Checked by: MJM 8/20/14

Revised by: LCG 4/10/2015
Checked by: MJM 4/13/2015

Table 1-3
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

chemical_name	Number of Detects	Number of Samples	Minimum SQL for Non-Detects (mg/L)	Maximum SQL for Non-Detects (mg/L)	Minimum Detection (mg/L)	Maximum Detection (mg/L)	Maximum Detection (µg/L)	USEPA GWSL VI (µg/L)	Average of All Samples
1,1,1-TRICHLOROETHANE	0	35	0.0001	0.005					0.00036
1,1,2,2-TETRACHLOROETHANE	28	35	0.0001	0.005	0.0002	0.008	8	14	0.0027
1,1,2-TRICHLOROETHANE	0	35	0.0001	0.005					0.00036
1,1-DICHLOROETHANE	3	35	0.0001	0.005	0.0001	0.0005	0.5	33	0.00044
1,1-DICHLOROETHYLENE	3	13	0.0001	0.005	0.0001	0.0023	2.3	820	0.00052
1,2,4-TRICHLOROBENZENE	31	35	0.0001	0.0005	0.0001	0.3	**300**	150	0.16
1,2-CIS-DICHLOROETHYLENE	32	35	0.0008	0.005	0.0002	0.075	75	NA	0.012
1,2-DIBROMOETHANE	0	22	0.001	0.001					0.00050
1,2-DICHLOROBENZENE	32	35	0.0001	0.0005	0.0001	0.59	590	11,000	0.096
1,2-DICHLOROETHANE	33	35	0.0001	0.005	0.0003	0.036	**36**	9.8	0.012
1,2-DICHLOROPROPANE	0	13	0.0001	0.005					0.00030
1,2-TRANS-DICHLOROETHYLENE	20	35	0.0001	0.005	0.0001	0.008	8	1,600	0.0019
1,3-CIS-DICHLOROPROPYLENE	0	13	0.0001	0.005					0.00030
1,3-DICHLOROBENZENE	31	35	0.0001	0.0005	0.0005	0.065	65	NA	0.017
1,3-TRANS-DICHLOROPROPYLENE	0	13	0.0001	0.005					0.00030
1,4-DICHLOROBENZENE	31	35	0.0001	0.0005	0.0015	0.18	**180**	11	0.042
1,4-DIOXANE	3	35	0.02	1	0.026	0.14	140	NA	0.049
ACETONE	6	35	0.003	0.15	0.004	0.02	20	95,000,000	0.0069
ACROLEIN	0	13	0.004	0.2					0.012
ACRYLONITRILE	0	13	0.001	0.05					0.0030
BENZENE	32	35	0.0001	0.0001	0.0005	1.8	**1,800**	6.9	0.071
BROMOFORM	0	13	0.0001	0.005					0.00030
CARBON DISULFIDE	2	13	0.0004	0.02	0.0006	0.0009	0.9	5,200	0.0013
CARBON TETRACHLORIDE	0	35	0.0001	0.005					0.00043
CHLOROBENZENE	34	35	0.0005	0.0005	0.0001	8.1	**8,100**	1,700	0.44
CHLORODIBROMOMETHANE	0	13	0.0001	0.005					0.00030
CHLOROETHANE	0	13	0.0001	0.005					0.00030
CHLOROFORM	9	35	0.0001	0.005	0.0003	0.002	2	3.6	0.00053
DICHLOROBROMOMETHANE	0	13	0.0001	0.005					0.00030
DICHLORODIFLUOROMETHANE	0	13	0.0001	0.005				31	0.00030
ETHYLBENZENE	31	35	0.0001	0.0001	0.0001	0.28	**280**	15	0.030
METHYL ACETATE	0	13	0.0003	0.015					0.00090
METHYL BROMIDE	0	13	0.0001	0.005					0.00030
METHYL CHLORIDE	0	13	0.0002	0.01					0.00060
METHYL ETHYL KETONE	0	13	0.001	0.05					0.0030
METHYL ISOBUTYL KETONE	0	13	0.001	0.05					0.0030
METHYLENE CHLORIDE	1	35	0.0002	0.01	0.003	0.003	3	9,200	0.00091
METHYL-T-BUTYL ETHER	10	13	0.0001	0.005	0.0003	0.0014	1.4	2,000	0.00088
NAPHTHALENE	7	13	0.0001	0.0005	0.0005	0.036	**36**	20	0.0046
STYRENE	0	13	0.0001	0.005				39,000	0.00030
t-Butyl Alcohol	1	13	0.004	0.2	0.013	0.013	13	NA	0.013
TETRACHLOROETHYLENE	27	35	0.0001	0.005	0.0001	0.003	3	65	0.0012
TOLUENE	31	35	0.0001	0.0001	0.0002	4	4,000	81,000	0.20
TRICHLOROETHYLENE	32	35	0.0001	0.005	0.0002	0.007	7	7.4	0.0035
TRICHLOROFLUOROMETHANE	0	13	0.0001	0.005					0.00030
VINYL CHLORIDE	16	35	0.00008	0.004	0.0001	0.015	**15**	2.5	0.0026
XYLENES,TOTAL	32	35	0.0001	0.0001	0.0003	1.2	1,200	2,100	0.12

Notes:
All concentrations mg/L unless otherwise specified
GWSL VI - USEPA Generic Vapor Intrusion
Groundwater Screening Level; Commercial Scenario
USEPA VI Screening Levels obtained from USEPA
Vapor Intrusion Screening Level (VISL) Calculator Version 3.2, November 2013 RSL
(Regional Screening Level)
mg/L - milligrams per liter
µg/l - micrograms per liter
U - not detected, value is the reporting limit
J - value is estimated
NA - not available
Bolded and underlined indicates maximum concentration greater than GWSL VI

Table 1-3
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

chemical_name	CPS-01 CPS-1-072612 7/26/2012	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A- 012012 1/20/2012	CPS-03A CPS-03A- 021612 2/16/2012	CPS-03A CPS-03A- 042712 4/27/2012	CPS-03A CPS-03A- 051612 5/16/2012	CPS-03A CPS-03A- 071812 7/18/2012	CPS-03A CPS-03A- 072712 7/27/2012	CPS-03A CPS-03A- 081712 8/17/2012	CPS-03A CPS-03A- 091712 9/17/2012	CPS-03A CPS-03A- 101911 10/19/2011	CPS-03A CPS-03A- 111611 11/16/2011	CPS-03A CPS-03A- 121311 12/13/2011	CPS-03A CPS-3A-031912 3/19/2012
1,1,1-TRICHLOROETHANE	0.0005 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0001 U	0.0008 U	0.0008 U		0.0008 U		0.0008 U
1,1,2,2-TETRACHLOROETHANE	0.0009	0.001 J	0.003 J	0.003 J	0.002 J	0.002 J	0.002 J	0.0019	0.002 J	0.002 J		0.003 J		0.003 J
1,1,2-TRICHLOROETHANE	0.0005 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0001 U	0.0008 U	0.0008 U		0.0008 U		0.0008 U
1,1-DICHLOROETHANE	0.0005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002	0.001 U	0.001 U		0.001 U		0.001 U
1,1-DICHLOROETHYLENE	0.0005 U							0.0006						
1,2,4-TRICHLOROBENZENE	0.029	0.18	0.2	0.2	0.14	0.17	0.14	0.16	0.16	0.15		0.18		0.18
1,2-CIS-DICHLOROETHYLENE	0.0025	0.017	0.028	0.023	0.01	0.011	0.034	0.036	0.048	0.028		0.054		0.012
1,2-DIBROMOETHANE		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U		0.001 U		0.001 U
1,2-DICHLOROBENZENE	0.034	0.15	0.2	0.18	0.14	0.15	0.13	0.14	0.13	0.13		0.2		0.17
1,2-DICHLOROETHANE	0.0043	0.018	0.02	0.018	0.017	0.018	0.014	0.015	0.015	0.013		0.02		0.019
1,2-DICHLOROPROPANE	0.0005 U							0.0001 U						
1,2-TRANS-DICHLOROETHYLENE	0.0016	0.003 J	0.004 J	0.004 J	0.001 J	0.001 J	0.005 J	0.006	0.007	0.005		0.007		0.002 J
1,3-CIS-DICHLOROPROPYLENE	0.0005 U							0.0001 U						
1,3-DICHLOROBENZENE	0.032	0.004 J	0.009	0.006	0.004 J	0.004 J	0.004 J	0.0038	0.003 J	0.003 J		0.009		0.005
1,3-TRANS-DICHLOROPROPYLENE	0.0005 U							0.0001 U						
1,4-DICHLOROBENZENE	0.084	0.014	0.028	0.021	0.013	0.013	0.013	0.014	0.013	0.012		0.029		0.018
1,4-DIOXANE	0.1 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.02 U	0.07 U	0.07 U		0.07 U		0.07 U
ACETONE	0.015 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0067	0.006 U	0.006 U		0.006 U		0.006 U
ACROLEIN	0.02 U							0.004 U						
ACRYLONITRILE	0.005 U							0.001 U						
BENZENE	0.034	0.021	0.032	0.027	0.012	0.015	0.03	0.03	0.038	0.026		0.043		0.019
BROMOFORM	0.0005 U							0.0001 U						
CARBON DISULFIDE	0.002 U							0.0006						
CARBON TETRACHLORIDE	0.0005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0001 U	0.001 U	0.001 U		0.001 U		0.001 U
CHLOROBENZENE	0.72	0.1	0.14	0.12	0.064	0.078	0.091	0.088	0.093	0.081		0.18		0.084
CHLORODIBROMOMETHANE	0.0005 U							0.0001 U						
CHLOROETHANE	0.0005 U							0.0001 U						
CHLOROFORM	0.0005 U	0.0008 U	0.001 J	0.001 J	0.0008 U	0.001 J	0.0008 U	0.0007	0.0008 U	0.0008 U		0.001 J		0.001 J
DICHLOROBROMOMETHANE	0.0005 U							0.0001 U						
DICHLORODIFLUOROMETHANE	0.0005 U							0.0001 U						
ETHYLBENZENE	0.038	0.01	0.017	0.014	0.008	0.009	0.009	0.0098	0.009	0.007		0.021		0.011
METHYL ACETATE	0.0015 U							0.0003 U						
METHYL BROMIDE	0.0005 U							0.0001 U						
METHYL CHLORIDE	0.001 U							0.0002 U						
METHYL ETHYL KETONE	0.005 U							0.001 U						
METHYL ISOBUTYL KETONE	0.005 U							0.001 U						
METHYLENE CHLORIDE	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0002 U	0.002 U	0.002 U		0.002 U		0.002 U
METHYL-T-BUTYL ETHER	0.0005							0.0005						
NAPHTHALENE	0.0031							0.0009						
STYRENE	0.0005 U							0.0001 U						
t-Butyl Alcohol	0.02 U							0.004 U						
TETRACHLOROETHYLENE	0.0005 U	0.001 J	0.001 J	0.001 J	0.001 J	0.001 J	0.0009 J	0.0012	0.001 J	0.001 J		0.001 J		0.001 J
TOLUENE	0.06	0.057	0.11	0.095	0.027	0.033	0.069	0.064	0.087	0.073		0.16		0.064
TRICHLOROETHYLENE	0.0008	0.004 J	0.004 J	0.004 J	0.004 J	0.004 J	0.004 J	0.004	0.005 J	0.004 J		0.005 J		0.004 J
TRICHLOROFLUOROMETHANE	0.0005 U							0.0001 U						
VINYL CHLORIDE	0.0029	0.001 U	0.007	0.007	0.001 U	0.002 J	0.008	0.012	0.001 U	0.007		0.01		0.001 U
XYLENES,TOTAL	0.17	0.033	0.058	0.049	0.026	0.027	0.031	0.034	0.031	0.023		0.074		0.035

Notes:
All concentrations mg/L unless otherwise specified
GWSL VI - USEPA Generic Vapor Intrusion
Groundwater Screening Level; Commercial Scenario
USEPA VI Screening Levels obtained from USEPA
Vapor Intrusion Screening Level (VISL) Calculator Version 3.2, November 2013 RSL
(Regional Screening Level)
mg/L - milligrams per liter
µg/l - micrograms per liter
U - not detected, value is the reporting limit
J - value is estimated
NA - not available

Table 1-3
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

chemical_name	CPS-03A CPS-3A-042312 4/23/2012	CPS-03A CPS-3A-101911 10/19/2011	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-08 CPS-8-072712 7/27/2012	CPS-08 CPS-8-D-072712 7/27/2012	IRM-PZ-4 IRM-PZ-4-072612 7/26/2012	IRM-PZ-9 IRM-PZ-9-072612 7/26/2012	IRM-TP-2 IRM-TP-2-072612 7/26/2012	IRM-TP-4 IRM-TP-4-072612 7/26/2012	MI-04 MI-04-072612 7/26/2012	SRI-GW-16 SRI-GW-16-092512 9/25/2012 7-8 ft	SRI-GW-18 SRI-GW-18-092512 9/25/2012 7-8 ft	WCC-6S WCC-6S-072712 7/27/2012	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2Rb-012012 1/20/2012
1,1,1-TRICHLOROETHANE		0.0008 U	0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U		0.0008 U	0.0008 U
1,1,2,2-TETRACHLOROETHANE		0.003 J	0.005 U	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.003	0.0006		0.0001 U	0.0005 U		0.003 J	0.007
1,1,2-TRICHLOROETHANE		0.0008 U	0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U		0.0008 U	0.0008 U
1,1-DICHLOROETHANE		0.001 U	0.005 U	0.0001	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0005		0.0001 U	0.0005 U		0.001 U	0.001 U
1,1-DICHLOROETHYLENE			0.005 U	0.0023	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001		0.0001 U	0.0005 U			
1,2,4-TRICHLOROBENZENE		0.17	0.011	0.019	0.0001	0.0001 U	0.0015	0.0001 U	0.17	0.008		0.0001 U	0.0005 U		0.3	0.3
1,2-CIS-DICHLOROETHYLENE		0.075	0.005 U	0.0026	0.0002	0.0002	0.0012	0.0002	0.0024	0.007		0.0004	0.0035		0.002 J	0.001 J
1,2-DIBROMOETHANE		0.001 U													0.001 U	0.001 U
1,2-DICHLOROBENZENE		0.21	0.023	0.0036	0.0001	0.0001 U	0.0049	0.0011	0.59	0.018		0.0001 U	0.0005 U		0.072	0.063
1,2-DICHLOROETHANE		0.027	0.005 U	0.0052	0.0005 J	0.0004 J	0.0003	0.0001 U	0.005	0.036		0.0035	0.0022		0.014	0.015
1,2-DICHLOROPROPANE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
1,2-TRANS-DICHLOROETHYLENE		0.008	0.005 U	0.0002	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0015	0.0004		0.0001 U	0.0005 U		0.0008 U	0.0008 U
1,3-CIS-DICHLOROPROPYLENE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
1,3-DICHLOROBENZENE		0.01	0.019	0.0005	0.0001 U	0.0001 U	0.007	0.0005	0.065	0.0022		0.0001 U	0.0005 U		0.039	0.036
1,3-TRANS-DICHLOROPROPYLENE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
1,4-DICHLOROBENZENE		0.031	0.043	0.0018	0.0001 U	0.0001 U	0.021	0.0015	0.18	0.0041		0.0001 U	0.0005 U		0.088	0.075
1,4-DIOXANE		0.07 U	1 U	0.02 U	0.026	0.02 U	0.02 U	0.02 U	0.1 U	0.033		0.14	0.1 U		0.07 U	0.07 U
ACETONE		0.006 U	0.15 U	0.003 U	0.003 U	0.003 U	0.004	0.003 U	0.015 U	0.003 U		0.003 U	0.015 U		0.006 U	0.006 U
ACROLEIN			0.2 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.02 U	0.004 U		0.004 U	0.02 U			
ACRYLONITRILE			0.05 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U			
BENZENE		0.063	1.8	0.0017	0.0001 U	0.0001 U	0.0096	0.0011	0.0088	0.026		0.0001 U	0.0005		0.019	0.018
BROMOFORM			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
CARBON DISULFIDE			0.02 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0009		0.0004 U	0.002 U			
CARBON TETRACHLORIDE		0.001 U	0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U		0.001 U	0.001 U
CHLOROBENZENE		0.2	8.1	0.0017	0.0001	0.0001	0.096	0.0091	0.12	0.021		0.0002	0.0005 U		0.44	0.41
CHLORODIBROMOMETHANE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
CHLOROETHANE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
CHLOROFORM		0.002 J	0.005 U	0.0003	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0005		0.0001 U	0.0005 U		0.0008 U	0.0008 U
DICHLOROBROMOMETHANE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
DICHLORODIFLUOROMETHANE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
ETHYLBENZENE		0.025	0.28	0.0004	0.0001 U	0.0001 U	0.0003	0.0001 U	0.0077	0.0001		0.0001 U	0.16		0.039	0.028
METHYL ACETATE			0.015 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0015 U	0.0003 U		0.0003 U	0.0015 U			
METHYL BROMIDE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
METHYL CHLORIDE			0.01 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.001 U	0.0002 U		0.0002 U	0.001 U			
METHYL ETHYL KETONE			0.05 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U			
METHYL ISOBUTYL KETONE			0.05 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U			
METHYLENE CHLORIDE		0.002 U	0.01 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.001 U	0.0002 U		0.0002 U	0.001 U		0.002 U	0.002 U
METHYL-T-BUTYL ETHER			0.005 U	0.0003	0.001	0.001	0.0001 U	0.0001 U	0.0007	0.0014		0.0013	0.0013			
NAPHTHALENE			0.036	0.0001 U	0.0001 U	0.0001 U	0.011	0.0001 U	0.0036	0.0005		0.0001 U	0.0005 U			
STYRENE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
t-Butyl Alcohol			0.2 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.02 U	0.013		0.004 U	0.02 U			
TETRACHLOROETHYLENE		0.001 J	0.005 U	0.0001	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0016	0.0003		0.0001 U	0.0005 U		0.002 J	0.002 J
TOLUENE		0.24	4	0.0001 U	0.0001 U	0.0001 U	0.0012	0.0002	0.0025	0.0003		0.0001 U	0.0011		0.15	0.08
TRICHLOROETHYLENE		0.004 J	0.005 U	0.0015	0.0002	0.0002	0.0001 U	0.0001 U	0.0024	0.0047		0.0002	0.0016		0.004 J	0.006
TRICHLOROFLUOROMETHANE			0.005 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U			
VINYL CHLORIDE		0.015	0.004 U	0.0015	0.00008 U	0.00008 U	0.0001	0.00008 U	0.0026	0.0021		0.00008 U	0.0004 U		0.001 U	0.001 U
XYLENES,TOTAL		0.097	1.2	0.0012	0.0001 U	0.0001 U	0.057	0.0003	0.012	0.0003		0.0001 U	0.52		0.16	0.1

Notes:
All concentrations mg/L unless otherwise specified
GWSL VI - USEPA Generic Vapor Intrusion
Groundwater Screening Level; Commercial Scenario
USEPA VI Screening Levels obtained from USEPA
Vapor Intrusion Screening Level (VISL) Calculator Version 3.2, November 2013 RSL
(Regional Screening Level)
mg/L - milligrams per liter
µg/l - micrograms per liter
U - not detected, value is the reporting limit
J - value is estimated
NA - not available

Table 1-3
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

chemical_name	WE-2RB WE-2RB-021612 2/16/2012	WE-2RB WE-2RB-031912 3/19/2012	WE-2RB WE-2RB-042312 4/23/2012	WE-2RB WE-2Rb-042712 4/27/2012	WE-2RB WE-2RB-051612 5/16/2012	WE-2RB WE-2Rb-071812 7/18/2012	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2RB-081712 8/17/2012	WE-2RB WE-2Rb-091712 9/17/2012	WE-2RB WE-2RB-101911 10/19/2011	WE-2RB WE-2RB-102111 10/21/2011	WE-2RB WE-2Rb-111611 11/16/2011	WE-2RB WE-2RB-121311 12/13/2011
1,1,1-TRICHLOROETHANE	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U	0.0005 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	
1,1,2,2-TETRACHLOROETHANE	0.007	0.006		0.004 J	0.004 J	0.003 J	0.0036	0.005 J	0.004 J	0.008		0.006	
1,1,2-TRICHLOROETHANE	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U	0.0005 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	
1,1-DICHLOROETHANE	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U	0.0005 U	0.001 U	0.001 U	0.001 U		0.001 U	
1,1-DICHLOROETHYLENE							0.0005 U						
1,2,4-TRICHLOROBENZENE	0.28	0.26		0.26	0.24	0.24	0.29	0.24	0.27	0.24		0.29	
1,2-CIS-DICHLOROETHYLENE	0.0008 U	0.0009 J		0.0008 U	0.001 J	0.004 J	0.003	0.003 J	0.003 J	0.001 J		0.0009 J	
1,2-DIBROMOETHANE	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U		0.001 U	
1,2-DICHLOROBENZENE	0.056	0.063		0.059	0.071	0.07	0.066	0.069	0.077	0.052		0.049	
1,2-DICHLOROETHANE	0.014	0.015		0.014	0.012	0.011	0.011	0.014	0.012	0.017		0.014	
1,2-DICHLOROPROPANE							0.0005 U						
1,2-TRANS-DICHLOROETHYLENE	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0009 J	0.0007	0.0008 U	0.001 J	0.0008 U		0.0008 U	
1,3-CIS-DICHLOROPROPYLENE							0.0005 U						
1,3-DICHLOROBENZENE	0.029	0.034		0.032	0.039	0.039	0.036	0.037	0.035	0.026		0.026	
1,3-TRANS-DICHLOROPROPYLENE							0.0005 U						
1,4-DICHLOROBENZENE	0.064	0.074		0.068	0.088	0.094	0.089	0.093	0.09	0.052		0.053	
1,4-DIOXANE	0.07 U	0.07 U		0.07 U	0.07 U	0.07 U	0.1 U	0.07 U	0.07 U	0.07 U		0.07 U	
ACETONE	0.006 U	0.006 U		0.006 U	0.006 U	0.017 J	0.02	0.013 J	0.017 J	0.006 U		0.006 U	
ACROLEIN							0.02 U						
ACRYLONITRILE							0.005 U						
BENZENE	0.013	0.016		0.015	0.021	0.029	0.025	0.027	0.028	0.015		0.012	
BROMOFORM							0.0005 U						
CARBON DISULFIDE							0.002 U						
CARBON TETRACHLORIDE	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U	0.0005 U	0.001 U	0.001 U	0.001 U		0.001 U	
CHLOROBENZENE	0.36	0.37		0.32	0.42	0.47	0.53	0.45	0.45	0.34		0.32	
CHLORODIBROMOMETHANE							0.0005 U						
CHLOROETHANE							0.0005 U						
CHLOROFORM	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U	0.0005 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	
DICHLOROBROMOMETHANE							0.0005 U						
DICHLORODIFLUOROMETHANE							0.0005 U						
ETHYLBENZENE	0.017	0.029		0.021	0.038	0.047	0.038	0.06	0.05	0.021		0.016	
METHYL ACETATE							0.0015 U						
METHYL BROMIDE							0.0005 U						
METHYL CHLORIDE							0.001 U						
METHYL ETHYL KETONE							0.005 U						
METHYL ISOBUTYL KETONE							0.005 U						
METHYLENE CHLORIDE	0.002 U	0.002 U		0.002 U	0.002 U	0.002 U	0.001 U	0.002 U	0.003 J	0.002 U		0.002 U	
METHYL-T-BUTYL ETHER							0.0008						
NAPHTHALENE							0.0047						
STYRENE							0.0005 U						
t-Butyl Alcohol							0.02 U						
TETRACHLOROETHYLENE	0.003 J	0.002 J		0.002 J	0.002 J	0.001 J	0.0013	0.002 J	0.001 J	0.003 J		0.002 J	
TOLUENE	0.042	0.071		0.058	0.12	0.29	0.4	0.29	0.3	0.14		0.066	
TRICHLOROETHYLENE	0.006	0.005		0.005 J	0.004 J	0.003 J	0.003	0.005 J	0.004 J	0.007		0.006	
TRICHLOROFLUOROMETHANE							0.0005 U						
VINYL CHLORIDE	0.001 U	0.001 U		0.001 U	0.001 U	0.002 J	0.0014	0.001 U	0.002 J	0.001 U		0.001 U	
XYLENES,TOTAL	0.058	0.11		0.078	0.15	0.2	0.13	0.27	0.22	0.075		0.056	

Notes:
All concentrations mg/L unless otherwise specified
GWSL VI - USEPA Generic Vapor Intrusion
Groundwater Screening Level; Commercial Scenario
USEPA VI Screening Levels obtained from USEPA
Vapor Intrusion Screening Level (VISL) Calculator Version 3.2, November 2013 RSL
(Regional Screening Level)
mg/L - milligrams per liter
µg/l - micrograms per liter
U - not detected, value is the reporting limit
J - value is estimated
NA - not available

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Reviewed by: MJM 5/20/14

Revised By: LCG 4/10/2015
Reviewed by: MJM 4/13/2015

Table 1-4
Comparison of Area 2 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
Second Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	Number of Detects	Number of Samples	Minimum SQL for Non-Detects (mg/L)	Maximum SQL for Non-Detects (mg/L)	Minimum Detection (mg/L)	Maximum Detection (mg/L)	Maximum Detection (µg/L)	GWSL VI (ug/L)	Average of All Samples
1,1,1-TRICHLOROETHANE	0	10	0.0001	0.0001					0.000050
1,1,2,2-TETRACHLOROETHANE	0	10	0.0001	0.0001					0.000050
1,1,2-TRICHLOROETHANE	0	10	0.0001	0.0001					0.000050
1,1-DICHLOROETHANE	0	10	0.0001	0.0001					0.000050
1,1-DICHLOROETHYLENE	0	10	0.0001	0.0001					0.000050
1,2,4-TRICHLOROBENZENE	2	10	0.0001	0.0001	0.0001	0.0002	0.2	150	0.000070
1,2-CIS-DICHLOROETHYLENE	3	10	0.0001	0.0001	0.0001	0.001	1	NA	0.000165
1,2-DICHLOROBENZENE	1	10	0.0001	0.0001	0.0004	0.0004	0.4	11,000	0.000085
1,2-DICHLOROETHANE	2	10	0.0001	0.0001	0.0003	0.0004	0.4	9.8	0.000110
1,2-DICHLOROPROPANE	0	10	0.0001	0.0001					0.000050
1,2-TRANS-DICHLOROETHYLENE	0	10	0.0001	0.0001					0.000050
1,3-CIS-DICHLOROPROPYLENE	0	10	0.0001	0.0001					0.000050
1,3-DICHLOROBENZENE	0	10	0.0001	0.0001					0.000050
1,3-TRANS-DICHLOROPROPYLENE	0	10	0.0001	0.0001					0.000050
1,4-DICHLOROBENZENE	0	10	0.0001	0.0001					0.000050
1,4-DIOXANE	0	10	0.02	0.02					0.010000
ACETONE	0	10	0.003	0.003					0.001500
ACROLEIN	0	10	0.004	0.004					0.002000
ACRYLONITRILE	0	10	0.001	0.001					0.000500
BENZENE	0	10	0.0001	0.0001					0.000050
BROMOFORM	0	10	0.0001	0.0001					0.000050
CARBON DISULFIDE	0	10	0.0004	0.0004					0.000200
CARBON TETRACHLORIDE	0	10	0.0001	0.0001					0.000050
CHLOROBENZENE	4	10	0.0001	0.0001	0.0001	0.0004	0.4	1,700	0.000120
CHLORODIBROMOMETHANE	0	10	0.0001	0.0001					0.000050
CHLOROETHANE	0	10	0.0001	0.0001					0.000050
CHLOROFORM	1	10	0.0001	0.0001	0.0002	0.0002	0.2	3.6	0.000065
DICHLOROBROMOMETHANE	0	10	0.0001	0.0001					0.000050
DICHLORODIFLUOROMETHANE	0	10	0.0001	0.0001					0.000050
ETHYLBENZENE	0	10	0.0001	0.0001					0.000050
METHYL ACETATE	0	10	0.0003	0.0003					0.000150
METHYL BROMIDE	0	10	0.0001	0.0001					0.000050
METHYL CHLORIDE	0	10	0.0002	0.0002					0.000100
METHYL ETHYL KETONE	0	10	0.001	0.001					0.000500
METHYL ISOBUTYL KETONE	0	10	0.001	0.001					0.000500
METHYLENE CHLORIDE	0	10	0.0002	0.0002					0.000100
METHYL-T-BUTYL ETHER	8	10	0.0001	0.0001	0.0001	0.0009	0.9	2,000	0.000240
NAPHTHALENE	0	10	0.0001	0.0001					0.000050
STYRENE	0	10	0.0001	0.0001					0.000050
t-Butyl Alcohol	0	10	0.004	0.004					0.002000
TETRACHLOROETHYLENE	1	10	0.0001	0.0001	0.0002	0.0002	0.2	65	0.000065
TOLUENE	2	10	0.0001	0.0001	0.0001	0.0002	0.2	81,000	0.000070
TRICHLOROETHYLENE	3	10	0.0001	0.0001	0.0001	0.0003	0.3	7.4	0.000095
TRICHLOROFLUOROMETHANE	0	10	0.0001	0.0001					0.000050
VINYL CHLORIDE	0	10	0.00008	0.00008					0.000040
XYLENES,TOTAL	0	10	0.0001	0.0001					0.000050

Notes:
All concentrations mg/L unless otherwise specified
GWSL VI - USEPA Generic Vapor Intrusion
Groundwater Screening Level
USEPA VI Screening Levels obtained from USEPA
Vapor Intrusion Screening Level (VISL)
Calculator Version 3.2, Novmeber 2013 RSL (Regional Screening Level)
mg/L - milligrams per liter
µg/l - micrograms per liter
U - not detected, value is the reporting limit
J - value is estimated
NA - not available
Bolded and underlined indicates maximum concentration greater than GWSL VI

Table 1-4
Comparison of Area 2 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
Second Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	SRI-GW-17 SRI-GW-17- 092512	SRI-GW-19 SRI-GW-19- 092612	SRI-GW-19 SRI-GW-19-D- 092612	SRI-GW-20 SRI-GW-20- 092612	SRI-GW-21 SRI-GW-21- 092612	SRI-GW-22 SRI-GW-22- 092612	SRI-GW-23 SRI-GW-23- 092712	SRI-GW-24 SRI-GW-24- 092712	SRI-GW-25 SRI-GW-25- 092712	SRI-GW-26 SRI-GW-26- 092712
1,1,1-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1,2-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2,4-TRICHLOROBENZENE	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001	0.0001 U
1,2-CIS-DICHLOROETHYLENE	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001	0.001
1,2-DICHLOROBENZENE	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROETHANE	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0003
1,2-DICHLOROPROPANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,4-DIOXANE	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
ACETONE	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
ACROLEIN	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
ACRYLONITRILE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
BENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
BROMOFORM	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CARBON DISULFIDE	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CARBON TETRACHLORIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROBENZENE	0.0004	0.0002	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001
CHLORODIBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROFORM	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002	0.0001 U	0.0001 U	0.0001 U
DICHLOROBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
ETHYLBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
METHYL ACETATE	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
METHYL BROMIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
METHYL CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
METHYLENE CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	0.0009	0.0001	0.0001	0.0001 U	0.0002	0.0001 U	0.0002	0.0001	0.0001	0.0006
NAPHTHALENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
STYRENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
t-Butyl Alcohol	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
TETRACHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
TOLUENE	0.0001	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U
TRICHLOROETHYLENE	0.0002	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0003
TRICHLOROFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
VINYL CHLORIDE	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U
XYLENES,TOTAL	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U

Notes:
All concentrations mg/L unless otherwise specified
GWSL VI - USEPA Generic Vapor Intrusion
Groundwater Screening Level
USEPA VI Screening Levels obtained from USEPA
Vapor Intrusion Screening Level (VISL)
Calculator Version 3.2, Novmeber 2013 RSL (Regional Screening Level)
mg/L - milligrams per liter
µg/l - micrograms per liter
U - not detected, value is the reporting limit
J - value is estimated
NA - not available

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Revised By: LCG 4/10/2015
Reviewed by: MJM 4/13/2015

Table 1-5
Comparison of Area 3 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
Second Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	Number of Detects	Number of Samples	Minimum SQL for Non-Detects (mg/L)	Maximum SQL for Non-Detects (mg/L)	Minimum Detection (mg/L)	Maximum Detection (mg/L)	Maximum Detection (µg/L)	USEPA GWSL VI (µg/L)	Average of All Samples	SRI-GW-27 SRI-GW-27-092412 9/24/2012 7-8 ft	SRI-GW-28 SRI-GW-28-092412 9/24/2012 7-8 ft	SRI-GW-29 SRI-GW-29-092412 9/24/2012 7-8 ft
1,1,1-TRICHLOROETHANE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,1,2-TRICHLOROETHANE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHYLENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,2,4-TRICHLOROBENZENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,2-CIS-DICHLOROETHYLENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROBENZENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROETHANE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROPROPANE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,3-TRANS-DICHLOROPROPYLENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
1,4-DIOXANE	0	3	0.02	0.02					0.010	0.02 U	0.02 U	0.02 U
ACETONE	1	3	0.003	0.003	0.0044	0.0044	4.4	95,000,000	0.002466667	0.003 U	0.0044	0.003 U
ACROLEIN	0	3	0.004	0.004					0.0020	0.004 U	0.004 U	0.004 U
ACRYLONITRILE	0	3	0.001	0.001					0.00050	0.001 U	0.001 U	0.001 U
BENZENE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
BROMOFORM	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
CARBON DISULFIDE	3	3			0.0004	0.0006	0.6	5,200	0.00050	0.0006	0.0005	0.0004
CARBON TETRACHLORIDE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
CHLOROBENZENE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
CHLORODIBROMOMETHANE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
CHLOROETHANE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
CHLOROFORM	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
DICHLOROBROMOMETHANE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
ETHYLBENZENE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
METHYL ACETATE	0	3	0.0003	0.0003					0.00015	0.0003 U	0.0003 U	0.0003 U
METHYL BROMIDE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
METHYL CHLORIDE	0	3	0.0002	0.0002					0.00010	0.0002 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0	3	0.001	0.001					0.00050	0.001 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0	3	0.001	0.001					0.00050	0.001 U	0.001 U	0.001 U
METHYLENE CHLORIDE	0	3	0.0002	0.0002					0.00010	0.0002 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	1	3	0.0001	0.0001	0.0003	0.0003	0.3	2,000	0.000133333	0.0001 U	0.0001 U	0.0003
NAPHTHALENE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
STYRENE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
t-Butyl Alcohol	0	3	0.004	0.004					0.0020	0.004 U	0.004 U	0.004 U
TETRACHLOROETHYLENE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
TOLUENE	0	3	0.0001	0.0001					0.00005	0.0001 U	0.0001 U	0.0001 U
TRICHLOROETHYLENE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
TRICHLOROFLUOROMETHANE	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U
VINYL CHLORIDE	0	3	0.00008	0.00008					0.0000400	0.00008 U	0.00008 U	0.00008 U
XYLENES,TOTAL	0	3	0.0001	0.0001					0.000050	0.0001 U	0.0001 U	0.0001 U

Notes:
All concentrations mg/L unless otherwise specified
GWSL VI - USEPA Generic Vapor Intrusion
Groundwater Screening Level
USEPA VI Screening Levels obtained from USEPA
Vapor Intrusion Screening Level (VISL)
Calculator Version 3.2, November 2013 RSL (Regional
Screening Level)
mg/L - milligrams per liter
µg/l - micrograms per liter
U - not detected, value is the reporting limit
J - value is estimated
NA - not available
Bolded and underlined indicates maximum
concentration greater than GWSL VI

Prepared by: KJC 11/08/13
Reviewed by: LCG 11/13/2013

Revised by: KMW 4/29/14
Reviewed by: MJM 5/20/14

Table 1-6
Selection of Exposure Pathways
Baseline Human Health
Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe	Medium	Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale	Data to be Used in HHRA
Current Use	Soil	Surface Soil	Areas 1, 2, and 3 (1)	Trespasser	Adolescent / Adult	Incidental Ingestion	Quantitative	The site is currently mostly covered with pavement; however, because some soil areas are exposed and because exposure potential is highest in surface soils (vs. subsurface soils), contact with surface soil is conservatively assumed for a trespasser under current conditions. Inhalation of soil-derived particulates in ambient air is anticipated to be a "de-minimus" exposure and is not evaluated. Volatilization of VOCs from surface soils to overlying ambient air is anticipated to be small or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-2 ft. and pre-SRI data 0-2 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
		Combined Soil (0 - 10 ft bgs)	Areas 1, 2, and 3 (1)			Incidental Ingestion	No	There is currently no access to subsurface soil for off-site residents who may trespass on the property as their activities are limited to the ground surface.	NA
						Dermal Contact	No		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
	Groundwater	Groundwater	Wells screened within the plume			Incidental Ingestion	No	There is no current exposure to on-Site groundwater. This pathway is not evaluated.	NA
						Dermal Contact	No		
						Inhalation of Volatiles	No		
	Surface Water	Surface Water	On-site portion of Prickett's Brook			Ingestion	No	The on-site portion of the brook is dry most of the year, hence potential for exposure is limited to non-existent.	NA
						Dermal	No		
						Inhalation of Volatiles	No		
			Off-site portion of Prickett's Brook and Prickett's Pond			Incidental Ingestion	No	The Groundwater/Surface Water Interaction Evaluation concluded that surface water and sediment are not media of concern (incomplete pathway). VOCs in streambed groundwater will be screened against the tapwater RSLs. Metals are not considered COPC in media other than groundwater, per the AOC/SOW.	NA
						Dermal Contact	No		
						Inhalation of Volatiles	No		
	Sediment	Sediment	On-site portion of Prickett's Brook			Incidental Ingestion	No	Since the on-site portion of the brook is dry most of the year, no sediment exposures will be evaluated.	NA
						Dermal Contact	No		
			Off-site portion of Prickett's Brook and Prickett's Pond			Incidental Ingestion	No	The Groundwater/Surface Water Interaction Evaluation concluded that surface water and sediment are not media of concern. VOCs in streambed groundwater were low relative to applicable criteria and hence the pathway need not be further evaluated. Metals are not considered COPC in media other than groundwater, per the AOC/SOW.	NA
						Dermal Contact	No		
	All	All	All	Outdoor Commercial/Industrial Worker	Adult	All	No	There are currently no outdoor commercial/industrial workers at the Site; therefore, there is no exposure to media on- or off-Site for this receptor.	NA
	All	All	All	Indoor Commercial/Industrial Worker	Adult	All	No	There are currently no indoor commercial/industrial workers at the Site; therefore, there is no exposure to media on- or off-Site for this receptor.	NA
	All	All	All	Construction Worker	Adult	All	No	A construction worker is associated with a future scenario, and thus there is no current exposure to on- or off-Site media for this receptor.	NA
	All	All	All	Utility Worker	Adult	All	No	A utility worker is associated with a future scenario, and thus there is no current exposure to on- or off-Site media for this receptor.	NA
	All	All	All	Hypothetical On-site Resident	Child/Adult	All	No	A resident is associated with a hypothetical future scenario, and thus there is no current exposure to on- or off-Site media for this receptor.	NA

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Baseline Human Health
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Old Bridge, New Jersey

Scenario Timeframe	Medium	Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale	Data to be Used in HHRA
Potential Future Use	Soil	Surface Soil	Areas 1, 2, and 3 (1)	Trespasser	Adolescent / Adult	Incidental Ingestion	No	Evaluated under a current scenario	NA
						Dermal Contact	No		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
		Combined soil (0 - 10 ft bgs)	Areas 1, 2, and 3 (1)			Incidental Ingestion	Quantitative	Future development of the Site could result in exposed ground surfaces. Additionally, future development of the Site could result in subsurface soil (soils from 0-10 ft bgs) being brought to the ground surface. Thus exposure to subsurface soils (1) is quantitatively evaluated for incidental ingestion and dermal contact. Inhalation of soil-derived particulates in ambient air is anticipated to be a "de-minimus" exposure and is not evaluated. Volatilization of VOCs from surface soils to overlying ambient air is anticipated to be small or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-10 ft. and pre-SRI data 0-10 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
	Groundwater	Groundwater	Wells screened within the plume			Incidental Ingestion	No	Under future use, the trespasser is not anticipated to be exposed to potable groundwater. This pathway is not evaluated.	NA
						Dermal Contact	No		
						Inhalation of Volatiles	No		
	Surface Water	Surface Water	On-site portion of Prickett's Brook			Ingestion	No	The on-site portion of the brook is dry most of the year, hence potential for exposure is limited to non-existent.	NA
						Dermal	No		
						Inhalation of Volatiles	No		
			Off-site portion of Prickett's Brook and Prickett's Pond			Incidental Ingestion	No	The Groundwater/Surface Water Interaction Evaluation concluded that surface water and sediment are not media of concern (incomplete pathway). VOCs in streambed groundwater will be screened against the tapwater RSLs. Metals are not considered COPC in media other than groundwater, per the AOC/SOW.	NA
						Dermal Contact	No		
						Inhalation of Volatiles	No		
	Sediment	Sediment	On-site portion of Prickett's Brook			Incidental Ingestion	No	Since the on-site portion of the brook is dry most of the year, no sediment exposures will be evaluated.	NA
						Dermal Contact	No		
			Off-site portion of Prickett's Brook and Prickett's Pond			Incidental Ingestion	No	The Groundwater/Surface Water Interaction Evaluation concluded that surface water and sediment are not media of concern. VOCs in streambed groundwater were low relative to applicable criteria and hence the pathway need not be further evaluated. Metals are not considered COPC in media other than groundwater, per the AOC/SOW.	NA
						Dermal Contact	No		
	Soil	Surface Soil	Areas 1, 2, and 3 (1)	Outdoor Commercial/Industrial Worker (3)	Adult	Incidental Ingestion	Quantitative	Potential exposure to surface soils are evaluated for a worker under future conditions, assuming the site is used in the future. Volatilization of VOCs from surface soils to overlying ambient air is anticipated to be minimal or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-2 ft.and pre-SRI data 0-2 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	Quantitative		
						Inhalation of Volatiles	No		
		Combined soil (0 - 10 ft bgs)	Areas 1, 2, and 3 (1)			Incidental Ingestion	Quantitative	Under future conditions it is assumed that exposure could occur as subsurface soils can be brought to the surface should the site be redeveloped. Volatilization of VOCs from subsurface soils to overlying ambient air is anticipated to be minimal or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-10 ft. and pre-SRI data 0-10 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	Quantitative		
						Inhalation of Volatiles	No		
	Groundwater	Groundwater	Wells screened within the plume			Incidental Ingestion	Quantitative	It is conservatively assumed that the on-property groundwater could be used as a potable resource. This evaluation assumes that an outdoor worker comes inside to drink potable water. No activities that would result in dermal contact with or inhalation of volatiles from the groundwater are anticipated	Analytical data from monitoring wells within the CPS Plume.
						Dermal Contact	No		
						Inhalation of Volatiles	No		
	Surface Water	Surface Water	On-site portion of Prickett's Brook			Ingestion	No	The on-site portion of the brook is dry most of the year, hence potential for exposure is limited to non-existent.	NA
						Dermal	No		
						Inhalation of Volatiles	No		
			Off-site portion of Prickett's Brook and Prickett's Pond			Incidental Ingestion	No	The Groundwater/Surface Water Interaction Evaluation concluded that surface water and sediment are not media of concern. VOCs in streambed groundwater were low relative to applicable criteria and hence it was determined that the pathway need not be further evaluated. Metals are not considered COPC in media other than groundwater, per the AOC/SOW.	NA
						Dermal Contact	No		
						Inhalation of Volatiles	No		
	Sediment	Sediment	On-site portion of Prickett's Brook			Incidental Ingestion	No	Since the on-site portion of the brook is dry most of the year, sediment exposures will not be evaluated.	NA
						Dermal Contact	No		
			Off-site portion of Prickett's Brook and Prickett's Pond			Incidental Ingestion	No	The Groundwater/Surface Water Interaction Evaluation concluded that surface water and sediment are not media of concern (incomplete pathway). VOCs in streambed groundwater were low relative to applicable criteria and hence the pathway need not be further evaluated. Metals are not considered COPC in media other than groundwater, per the AOC/SOW.	NA
						Dermal Contact	No		

Table 1-6
Selection of Exposure Pathways
Baseline Human Health
Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe	Medium	Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	Type of Analysis	Rationale	Data to be Used in HHRA
Potential Future Use (cont.)	Soil	Surface Soil	Areas 1, 2, and 3 (1)	Indoor Commercial/Industrial Worker (3)	Adult	Incidental Ingestion	Quantitative	An indoor worker is assumed to spend most of his/her time indoors (i.e., an office worker), however, per USEPA guidance, some exposure to soil is assumed (3). Inhalation of soil-derived particulates in ambient air is anticipated to be a "de-minimus" exposure and is not evaluated. Volatilization of VOCs from surface soils to overlying ambient air is anticipated to be small or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-2 ft. and pre-SRI data 0-2 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
		Combined soil (0 - 10 ft bgs)	Areas 1, 2, and 3 (1)			Incidental Ingestion	Quantitative	An indoor worker is assumed to spend most of his/her time indoors (i.e., an office worker), however, per USEPA guidance, some exposure to soil is assumed (3). Volatilization of VOCs from surface soils to overlying ambient air is anticipated to be small or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-10 ft. and pre-SRI data 0-10 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
	Groundwater	Groundwater	Wells and/or well screened within the plume			Incidental Ingestion	Quantitative	It is conservatively assumed that on-property groundwater could be used as a potable resource. No activities that would result in dermal contact with or inhalation of volatiles from the groundwater are anticipated.	Analytical data from monitoring wells within the CPS Plume.
						Dermal Contact	No		
						Inhalation of Volatiles	No		
	Indoor Air	Indoor Air	On-site Area 2			Inhalation of Volatiles	Qualitative	Although the vapor intrusion evaluation determined that the vapor intrusion pathway was incomplete, an evaluation of exposure to indoor air was performed to document risks associated with this route of exposure.	Recent indoor air data.
	Soil	Combined soil (0 - 10 ft bgs)	Areas 1, 2, and 3 (1) and Sewer Line Exposure Area	Construction Worker/ Utility Worker	Adult	Incidental Ingestion	Quantitative	Workers may come into contact with constituents detected in soil in an excavation scenario.	Recent (SRI) soil data 0-10 ft. and pre-SRI data 0-10 ft and Recent (SRI) soil data 0-10 ft. and pre-SRI data 0-10 ft within the Sewer Line Exposure Area.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	Quantitative		
						Inhalation of Volatiles	Quantitative		
	Groundwater	Groundwater (1)	Areas 1, 2, and 3 (1)			Incidental Ingestion	Quantitative	Workers may come into contact with constituents detected in groundwater in an excavation scenario.	Most recent (2011) shallow on-site groundwater data from contaminated zone.
						Dermal Contact	Quantitative		
						Inhalation of Volatiles	Quantitative		
	Soil	Surface Soil	Areas 1, 2, and 3 (1)	Hypothetical On-site Resident	Child/Adult	Incidental Ingestion	Quantitative	Potential exposure to surface and subsurface soils are evaluated for a hypothetical resident, in the very unlikely scenario that the site is redeveloped for residential use. This scenario is highly unrealistic and is evaluated for the purpose of determining the need for institutional controls and/or further remediation. Inhalation of soil-derived particulates in ambient air is anticipated to be a "de-minimus" exposure and is not evaluated. Volatilization of VOCs from soils to overlying ambient air is anticipated to be small or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-2 ft. and pre-SRI data 0-2 ft. Recent (SRI) soil data 0-10 ft. and pre-SRI data 0-10 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
	Soil	Combined soil (0 - 10 ft bgs)	Areas 1, 2, and 3 (1)		Child/Adult	Incidental Ingestion	Quantitative	Potential exposure to surface and subsurface soils are evaluated for a hypothetical resident, in the very unlikely scenario that the site is redeveloped for residential use. This scenario is highly unrealistic and is evaluated for the purpose of determining the need for institutional controls and/or further remediation. Inhalation of soil-derived particulates in ambient air is anticipated to be a "de-minimus" exposure and is not evaluated. Volatilization of VOCs from soils to overlying ambient air is anticipated to be small or not a complete pathway and thus not evaluated.	Recent (SRI) soil data 0-2 ft. and pre-SRI data 0-2 ft. Recent (SRI) soil data 0-10 ft. and pre-SRI data 0-10 ft.
						Dermal Contact	Quantitative		
						Inhalation of Particulates	No		
						Inhalation of Volatiles	No		
	Groundwater	Groundwater (2*)	Wells and/or well screened within the plume			Intentional Ingestion	Quantitative	On-site groundwater within the contaminated zone would be used for potable use. This scenario is highly unlikely. It is evaluated because site groundwater is within a drinking water source area and also to assist in guiding further cleanup (remedial goals).	Analytical data from monitoring wells within the CPS Plume.
						Dermal Contact	Quantitative		
						Inhalation of Volatiles (showering)	Quantitative		

Notes:
1.Three soil exposure points/areas will be evaluated: the on-site main plant area has been divided into Areas 1 (former tank farm) and 2 (former plant), and on-site side-lot is Area 3. Soil exposures beyond the property boundary are not evaluated as soil contamination attributable to CPS was not found to extend beyond the former CPS property boundary. Consistent with that specified in the USEPA Scope of Work, dated October 2005, this risk assessment addresses two operable units (OU): OU1, which pertains to groundwater and includes both CPS-related VOC releases and Madison-related metals releases and OU2, which pertains to soils that act as groundwater sources and contact hazards on the CPS property. This risk assessment does not address OU3 (consistent with that stated in the 2005 USEPA SOW), which pertains to soils that act as groundwater sources and contact hazards on the Madison property. Metals in soil sourced from the Madison release(s), which are found on the former CPS parcel will be addressed to be able to assess total site risk for the CPS property.
2. The risk assessment for groundwater will include compounds associated with the former CPS VOC release, the Madison Metals release and the EPLC VOC release. The contaminant plumes from these sites are co-mingled; therefore, inclusion of these constituents is necessary for addressing cumulative risk. The Hercules TBA plume will not be addressed, as the Hercules plume is not co-mingled with the CPS plume (except in a very small area downgradient near Prickett's Pond).
3. Exposure pathways are based on USEPA's Supplemental Guidance For Developing Soil Screening Levels For Superfund Sites. Solid Waste and Emergency Response. OSWER 9355.4-24. December 2002.

Prepared by/ Date: KJC 05/16/11
Revised by/Date: MJM 03/21/13
Revised by/Date: KMW 11/17/2013
Revised by/Date: KMW 04/29/2014
Revised by/Date: LCG 4/13/2015
Checked by: MJM 4/13/2015

Table 2-1
Data Summary and Selection of Chemicals of Potential Concern - Soil Area 1 (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Volatile Organics															
71-55-6	1,1,1-TRICHLOROETHANE	0.249		0.249		mg/Kg	RDSB38	1 / 214	0 : 8.41	0.249		870 ns			No	BSL
79-34-5	1,1,2,2-TETRACHLOROETHANE	0.009	J	170		mg/Kg	RDSB14	14 / 214	0 : 16.5	170		0.56 c			Yes	ASL
79-00-5	1,1,2-TRICHLOROETHANE	0.002		1.59		mg/Kg	RDSB31	5 / 214	0 : 10.7	1.59		0.16 n			No	FOD
87-61-6	1,2,3-TRICHLOROBENZENE	0.08018		450		mg/Kg	SRI-SS-33	20 / 44	0.001 : 7.69	450		4.9 n			Yes	ASL
120-82-1	1,2,4-TRICHLOROBENZENE	0.001		1145		mg/Kg	RDSB23	35 / 74	0.001 : 8.05	1145		6.2 n			Yes	ASL
95-63-6	1,2,4-TRIMETHYLBENZENE	0.0524	J	4.20		mg/Kg	RDSB32	8 / 30	0.0538 : 6.80	4.20		6.2 n			No	BSL
156-59-2	1,2-CIS-DICHLOROETHYLENE	0.0365	J	150		mg/Kg	RDSB5	34 / 163	0.001 : 5.37	150		16 n			Yes	ASL
106-93-4	1,2-DIBROMOETHANE	0.150		0.150		mg/Kg	RDSB38	1 / 74	0.001 : 7.69	0.150		0.034 c			No	FOD
95-50-1	1,2-DICHLOROBENZENE	0.004		8700		mg/Kg	SRI-SM-20	103 / 215	0 : 2	8700		190 n			Yes	ASL
107-06-2	1,2-DICHLOROETHANE	0.011		45		mg/Kg	RDSB10	23 / 221	0 : 5.90	45		0.43 c**			Yes	ASL
540-59-0	1,2-DICHLOROETHYLENE	0.005		0.015		mg/Kg	SB5-11	2 / 35	0 : 0	0.015		70 n			No	BSL
78-87-5	1,2-DICHLOROPROPANE	0.608		13		mg/Kg	RDSB7	3 / 210	0 : 10.2	13		0.94 c**			Yes	ASL
156-60-5	1,2-TRANS-DICHLOROETHYLENE	0.095		2		mg/Kg	SRI-SM-20	9 / 199	0 : 9.84	2		15 n			No	BSL
108-67-8	1,3,5-TRIMETHYLBENZENE	0.0347	J	1.24		mg/Kg	RDSB32	5 / 30	0.0693 : 8.76	1.24		78 n			No	BSL
541-73-1	1,3-DICHLOROBENZENE	0.0037		27		mg/Kg	RDSB18	44 / 215	0 : 6.44	27					Yes	NSL
142-28-9	1,3-DICHLOROPROPANE	0.270		0.270		mg/Kg	RDSB38	1 / 30	0.0775 : 10.2	0.270		160 n			No	BSL
106-46-7	1,4-DICHLOROBENZENE	0.003		220		mg/Kg	RDSB18	93 / 215	0 : 6.80	220		2.4 c			Yes	ASL
109-69-3	1-CHLOROBUTANE	0.108		62.9		mg/Kg	RDSB32	13 / 30	0.0651 : 6.49	62.9		310 n			No	BSL
95-49-8	2-CHLOROTOLUENE	0.121		0.377		mg/Kg	RDSB31	5 / 30	0.0863 : 10.9	0.377		160 n			No	BSL
67-64-1	ACETONE	0.0044		34	E	mg/Kg	RDSB10 SB2-5	79 / 218	0 : 41	34		6100 n			No	BSL
107-13-1	ACRYLONITRILE	0.400	J	0.400	J	mg/Kg	RDSB38	1 / 193	0 : 31.3	0.400		0.24 c**			No	FOD
71-43-2	BENZENE	0.001		98		mg/Kg	RDSB5	70 / 213	0 : 4.11	98		1.1 c**			Yes	ASL
108-86-1	BROMOBENZENE	0.238		0.238		mg/Kg	RDSB38	1 / 30	0.0707 : 9.30	0.238		30 n			No	BSL
75-15-0	CARBON DISULFIDE	0.001		0.0059	J	mg/Kg	SBR14	5 / 105	0 : 6.62	0.0059		82 n			No	BSL
108-90-7	CHLOROBENZENE	0.001		310		mg/Kg	RDSB18	108 / 221	0 : 8.76	310		29 n			Yes	ASL
67-66-3	CHLOROFORM	0.008		0.271		mg/Kg	RDSB38	2 / 214	0 : 5.90	0.271		0.29 c*			No	BSL
110-82-7	CYCLOHEXANE	0.008		53		mg/Kg	SRI-SS-35	5 / 14	0.001 : 0.073	53		700 ns			No	BSL
108-87-2	CYCLOHEXANE, METHYL-	0.002		210		mg/Kg	SRI-SS-35	5 / 14	0.001 : 0.073	210					Yes	NSL
75-27-4	DICHLOROBROMOMETHANE	0.172		0.172		mg/Kg	RDSB38	1 / 210	0 : 5.8	0.172		0.27 c			No	BSL
100-41-4	ETHYLBENZENE	0.0025	J	77		mg/Kg	RDSB5	115 / 221	0 : 3.02	77		5.4 c*			Yes	ASL
87-68-3	HEXACHLOROBUTADIENE	0.970		0.970		mg/Kg	RDSB38	1 / 30	0.0720 : 9.48	0.970		6.1 n			No	BSL
98-82-8	ISOPROPYLBENZENE	0.037		0.77		mg/Kg	SRI-SS-30	6 / 44	0.001 : 5.54	0.77		210 n			No	BSL
179601-23-1	M+P-XYLENE	0.018		18		mg/Kg	SRI-SS-44	7 / 14	0.001 : 0.001	18		63 n			No	BSL
79-20-9	METHYL ACETATE	0.11		0.71		mg/Kg	SRI-SS-33	4 / 44	0.002 : 3.9	0.71		7800 n			No	BSL
96-33-3	METHYL ACRYLATE	3.82		3.82		mg/Kg	RDSB32	1 / 30	0.0748 : 9.84	3.82		15 n			No	BSL
78-93-3	METHYL ETHYL KETONE	0.022		0.706		mg/Kg	RDSB31	3 / 112	0 : 10.4	0.706		2800 n			No	BSL
108-10-1	METHYL ISOBUTYL KETONE	0.08		0.18	J	mg/Kg	SRI-18	3 / 114	0 : 12.5	0.18		530 n			No	BSL
80-62-6	METHYL METHACRYLATE	0.907		40.4		mg/Kg	RDSB32	2 / 30	0.109 : 14.3	40.4		480 n			No	BSL
74-95-3	METHYLENE BROMIDE	0.164		0.164		mg/Kg	RDSB38	1 / 30	0.0503 : 6.62	0.164		2.5 n			No	BSL
75-09-2	METHYLENE CHLORIDE	0.0016	J	350		mg/Kg	RDSB10	48 / 214	0 : 12	350		36 n			Yes	ASL
91-20-3	NAPHTHALENE	0.310		1.15		mg/Kg	RDSB32	3 / 30	0.0396 : 5.01	1.15		3.6 c**			No	BSL
104-51-8	N-BUTYLBENZENE	0.441		0.441		mg/Kg	RDSB38	1 / 30	0.0544 : 7.15	0.441		390 ns			No	BSL
103-65-1	N-PROPYLBENZENE	0.311		0.770		mg/Kg	RDSB32	3 / 30	0.0495 : 6.26	0.770		340 ns			No	BSL
95-47-6	O-XYLENE	0.003		110		mg/Kg	RDSB5 RDSB7	83 / 133	0.001 : 7.15	110		69 n			Yes	ASL
106-43-4	P-CHLOROTOLUENE	0.108		4.85		mg/Kg	RDSB31	8 / 30	0.0792 : 10.0	4.85		160 n			No	BSL
99-87-6	P-ISOPROPYLTOLUENE	0.114		0.374		mg/Kg	RDSB38	4 / 30	0.0453 : 5.72	0.374					Yes	NSL
135-98-8	SEC-BUTYLBENZENE	0.370		0.370		mg/Kg	RDSB38	1 / 30	0.0584 : 7.69	0.370		780 ns			No	BSL
100-42-5	STYRENE	0.275		0.275		mg/Kg	RDSB38	1 / 107	0 : 9.84	0.275		630 n			No	BSL
75-65-0	t-Butyl Alcohol	0.024		4.6		mg/Kg	SRI-SS-30	2 / 44	0.02 : 39	4.6					No	FOD
98-06-6	TERT-BUTYLBENZENE	0.119		0.346		mg/Kg	RDSB38	2 / 30	0.0584 : 7.69	0.346		780 ns			No	BSL
127-18-4	TETRACHLOROETHYLENE	0.0021	J	19		mg/Kg	RDSB5	21 / 214	0 : 5.8	19		8.6 n			Yes	ASL
108-88-3	TOLUENE	0.001		2100		mg/Kg	RDSB5	146 / 221	0 : 2	2100		500 n			Yes	ASL
79-01-6	TRICHLOROETHYLENE	0.02		1200		mg/Kg	RDSB5	34 / 211	0 : 7.69	1200		0.44 n			Yes	ASL
75-01-4	VINYL CHLORIDE	0.209	J	1.9		mg/Kg	RDSB6	6 / 214	0 : 25.6	1.9		0.06 c			No	FOD
1330-20-7	XYLENES,TOTAL	0.002	J	320		mg/Kg	RDSB7	134 / 207	0 : 2.55	320		63 n			Yes	ASL

Table 2-1
Data Summary and Selection of Chemicals of Potential Concern - Soil Area 1 (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)		Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Semivolatile Organics																
95-94-3	1,2,4,5-TETRACHLOROBENZENE	0.1		2.1		mg/Kg	SRI-SS-35	2 / 14	0.018 : 0.69	2.1		1.8	n			Yes	ASL
120-82-1	1,2,4-TRICHLOROBENZENE	0.32		11		mg/Kg	SB5-11	4 / 14	0 : 0	11		6.2	n			Yes	ASL
541-73-1	1,3-DICHLOROBENZENE	0.11	J	0.11	J	mg/Kg	SB1-1	1 / 14	0 : 0	0.11						No	NSL
106-46-7	1,4-DICHLOROBENZENE	0.13	J	0.18		mg/Kg	SBR22	2 / 14	0 : 0	0.18		2.4	c			No	BSL
105-67-9	2,4-DIMETHYLPHENOL	3		3		mg/Kg	SRI-SM-20	1 / 36	0 : 0.69	3		120	n			No	BSL
91-57-6	2-METHYLNAPHTHALENE	0.067		13		mg/Kg	SRI-SM-20	5 / 30	0.004 : 0.14	13		23	n			No	BSL
99-09-2	3-NITROANILINE	0.26		0.26		mg/Kg	SRI-SS-28	1 / 22	0 : 2.8	0.26						No	FOD
83-32-9	ACENAPHTHENE	0.12		0.12		mg/Kg	SRI-SS-35	1 / 44	0 : 0.4	0.12		340	n			No	BSL
208-96-8	ACENAPHTHYLENE	0.15		0.15		mg/Kg	SRI-SS-35	1 / 44	0 : 0.4	0.15		170	n			No	BSL
120-12-7	ANTHRACENE	0.043	J	0.043	J	mg/Kg	SRI-SS-41	1 / 44	0 : 0.4	0.043		1700	n			No	BSL
56-55-3	BENZO(A)ANTHRACENE	0.043		0.29	J	mg/Kg	SRI-SS-41	3 / 44	0 : 0.4	0.29		0.15	c			Yes	ASL
50-32-8	BENZO(A)PYRENE	0.048		0.25	J	mg/Kg	SRI-SS-41	4 / 44	0 : 0.4	0.25		0.015	c			Yes	ASL
205-99-2	BENZO(B)FLUORANTHENE	0.044		0.34	J	mg/Kg	SRI-SS-41	6 / 44	0 : 0.4	0.34		0.15	c			Yes	ASL
191-24-2	BENZO(GHI)PERYLENE	0.047		0.17	J	mg/Kg	SRI-SS-41	2 / 44	0 : 0.4	0.17		170	n			No	BSL
207-08-9	BENZO(K)FLUORANTHENE	0.07		0.19	J	mg/Kg	SRI-SS-41	2 / 44	0 : 0.4	0.19		1.5	c			No	BSL
85-68-7	BENZYL BUTYL PHTHALATE	0.18		1.2		mg/Kg	SRI-SM-20	2 / 44	0 : 2.8	1.2		260	c**			No	BSL
92-52-4	Biphenyl	0.045		500		mg/Kg	SRI-SS-30	14 / 30	0.018 : 0.69	500		5.1	n			Yes	ASL
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.083		30		mg/Kg	SRI-SM-20	19 / 44	0 : 2.8	30		35	c**			No	BSL
86-74-8	CARBAZOLE	0.044		0.69		mg/Kg	SRI-SM-20	2 / 38	0 : 0.69	0.69						No	NSL
218-01-9	CHRYSENE	0.043		4.1		mg/Kg	SRI-SS-33	10 / 44	0 : 0.4	4.1		15	c			No	BSL
106-44-5	CRESOL,P	0.12		0.54		mg/Kg	SRI-SS-30	3 / 30	0.018 : 0.8	0.54		610	n			No	BSL
53-70-3	DIBENZO(A,H)ANTHRACENE	0.044	J	0.044	J	mg/Kg	SRI-SS-41	1 / 44	0 : 0.4	0.044		0.015	c			No	FOD
132-64-9	DIBENZOFURAN	0.044		0.044		mg/Kg	SRI-SS-35	1 / 14	0.018 : 0.69	0.044		7.8	n			No	BSL
84-74-2	DI-N-BUTYL PHTHALATE	0.22		24		mg/Kg	SRI-SM-20	6 / 44	0 : 2.8	24		610	n			No	BSL
117-84-0	DI-N-OCTYL PHTHALATE	0.098		0.27		mg/Kg	SB5-11	4 / 44	0 : 2.8	0.27		61	n			No	BSL
206-44-0	FLUORANTHENE	0.069		0.58	J	mg/Kg	SRI-SS-41	7 / 44	0 : 0.4	0.58		230	n			No	BSL
86-73-7	FLUORENE	0.045		1		mg/Kg	SRI-SM-20	6 / 44	0 : 0.14	1		230	n			No	BSL
193-39-5	INDENO(1,2,3-CD)PYRENE	0.048		0.15	J	mg/Kg	SRI-SS-41	2 / 44	0 : 0.4	0.15		0.15	c			No	FOD
91-20-3	NAPHTHALENE	0.091		5.3		mg/Kg	SRI-SM-20	6 / 44	0 : 0.14	5.3		3.6	c**			Yes	ASL
85-01-8	PHENANTHRENE	0.03		0.85		mg/Kg	SRI-SM-20	11 / 44	0 : 0.14	0.85		170	n			No	BSL
108-95-2	PHENOL	0.1		26		mg/Kg	SRI-SM-20	6 / 36	0 : 0.69	26		1800	n			No	BSL
129-00-0	PYRENE	0.021		0.52	J	mg/Kg	SRI-SS-41	8 / 44	0 : 0.4	0.52		170	n			No	BSL
	PCBs																
11097-69-1	PCB-1254 (AROCLOR 1254)	0.011		0.011		mg/Kg	SRI-SS-41	1 / 3	0.0036 : 0.0037	0.011		0.11	n			No	BSL
11096-82-5	PCB-1260 (AROCLOR 1260)	0.016		0.044	J	mg/Kg	SRI-SS-44	2 / 3	0.0054 : 0.0054	0.044		0.22	c			No	BSL
	Inorganics																
7429-90-5	ALUMINUM	2.1		11600		mg/kg	SRI-SM-15	31 / 31		11600		7700	n			Yes	ASL
7440-36-0	ANTIMONY	1.01		4.03		mg/kg	SRI-SM-15	8 / 41	0 : 5.97	4.03		3.1	n			Yes	ASL
7440-38-2	ARSENIC	0.0019		32.8		mg/kg	SRI-SM-15	28 / 40	0.0011 : 5.67	32.8		0.61	c**R			Yes	ASL
7440-39-3	BARIUM	2.22		25.5		mg/kg	SRI-SS-33	24 / 31	0.021 : 0.024	25.5		1500	n			No	BSL
7440-41-7	BERYLLIUM	0.0717		3.27		mg/kg	SRI-SM-1	14 / 41	0 : 0.0849	3.27		16	n			No	BSL
7440-43-9	CADMIUM	0.001		3.18		mg/kg	SRI-SM-1	17 / 41	0 : 0.175	3.18		7	n			No	BSL
7440-70-2	CALCIUM	0.89		22700		mg/kg	SRI-SS-33	30 / 31	0.58 : 0.58	22700						No	E
7440-47-3	CHROMIUM	0.0088		144		mg/kg	SRI-SM-15	39 / 39		144		0.29	c*			Yes	ASL
7440-48-4	COBALT	0.0065		4.4		mg/kg	SRI-SS-28	16 / 31	0.0053 : 0.237	4.4		2.3	n			Yes	ASL
7440-50-8	COPPER	0.003		1310	J	mg/kg	SRI-SM-1	41 / 41	:	1310		310	n			Yes	ASL
7439-89-6	IRON	2.8		142000		mg/kg	SRI-SM-1	31 / 31		142000		5500	n			No	E
7439-92-1	LEAD	0.013		130		mg/kg	SB1-1	37 / 41	0.011 : 0.687	13.2		400	L			No	BSL
7439-95-4	MAGNESIUM	0.98		2920		mg/kg	SRI-SS-28	27 / 29	0.57 : 0.58	2920						No	E
7439-96-5	MANGANESE	0.006		103		mg/kg	SRI-SS-28	31 / 31		103		180	n			No	BSL
7439-97-6	MERCURY	0.0178		1.2		mg/kg	SRI-SS-31	9 / 41	0 : 0.0144	1.2		1	n			Yes	ASL
7440-02-0	NICKEL	0.0044		57		mg/kg	SB4-12	32 / 41	0 : 0.216	57		150	n			No	BSL
7440-09-7	POTASSIUM	26.4		1330		mg/kg	SRI-SM-15	24 / 31	0.53 : 0.59	1330						No	E
7782-49-2	SELENIUM	3.93		3.93		mg/kg	SRI-SM-15	1 / 41	0 : 5.85	3.93		39	n			No	BSL
7440-22-4	SILVER	0.135		1.5		mg/kg	SB1-1	3 / 41	0 : 0.225	1.5		39	n			No	BSL

Table 2-1
Data Summary and Selection of Chemicals of Potential Concern - Soil Area 1 (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)		Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
7440-23-5	SODIUM	13.1		3360		mg/kg	SRI-SS-30	13 / 31	0.53 : 46.5	3360						No	E
7440-28-0	THALLIUM	0.461		1.32		mg/kg	SRI-SS-33	6 / 41	0 : 8.66	1.32		0.078	n			Yes	ASL
7440-62-2	VANADIUM	0.017		304		mg/kg	SRI-SM-15	29 / 29		304		39	n			Yes	ASL
7440-66-6	ZINC	0.0066		1000		mg/kg	SB1-1	39 / 39		1000		2300	n			No	BSL

(1) Minimum or maximum concentration detected in data set. Samples included in data set are identified in Attachment A.
(2) The concentration used for screening is the maximum detected concentration for all analytes except for lead, which was screened using the mean lead concentration.
(3) Background concentrations were not included in the COPC screening.
(4) Values are the Regional Screening Levels (RSLs) obtained from USEPA November 2013.
Values used for screening are the residential soil RSLs for the lesser of cancer risks equal to 1E-06 or non-cancer risks equal to a hazard index of 0.1.
RSL for xylenes used for m+p-xylene.
RSL for pyrene used for phenanthrene, acenaphthylene, benzo(ghi)perylene.
RSL for chromium (VI) used for chromium.
RSL for Vanadium and compounds used for vanadium.
n - RSL is based on a non-cancer hazard quotient of 0.1
c - RSL is based on an excess lifetime cancer risk of 1 in 1 million
c* - where n RSL < 100X c RSL.
c** - where n RSL < 10 x c RSL
ns - RSL is based on a non-cancer hazard quotient of 0.1; concentration may exceed Csat
R - RBA applied
(5) There are no Applicable or Relevant and Appropriate Requirements / To Be Considered (ARAR/TBC) for soil.
(6) Analyte is selected as a COPC if the concentration used for screening exceeds the RSL or if no screening value is available.
ASL - Concentration used for screening is greater than the screening toxicity value; the analyte was selected as a COPC.
BSL - Concentration used for screening is less than the screening toxicity value; the analyte was not selected as a COPC.
NSL - No screening level available; the anlayte was selected as a COPC.
FOD - Analyte detected in less than 5% of the samples.
E - Compound is an essential nutrient.

mg/Kg - milligrams per kilogram.
COPC - Chemical of potential concern.
J - Value is estimated.
RBA - relative bioavailability factor

Prepared by / Date: KJC 04/24/14
Checked by / Date: KMW 04/29/14
Revised by / Date: LCG 4/13/2015
Checked by / Date: MJM 4/13/2015

Table 2-2
Data Summary and Selection of Chemicals of Potential Concern - Soil Area 2 (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)		Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Volatile Organics																
87-61-6	1,2,3-TRICHLOROBENZENE	0.001		0.001		mg/Kg	SRI-SS-45	1 / 19	0.001 : 0.00	0.001		4.9	n			No	BSL
120-82-1	1,2,4-TRICHLOROBENZENE	0.002	J	0.002	J	mg/Kg	SRI-SS-43 SRI-SS-45	2 / 34	0.001 : 0.06	0.002		6.2	n			No	BSL
95-50-1	1,2-DICHLOROBENZENE	0.005		0.005		mg/Kg	SRI-SS-45	1 / 70	0 : 0.16	0.005		190	n			No	BSL
541-73-1	1,3-DICHLOROBENZENE	0.002		0.002		mg/Kg	SRI-SS-24	1 / 70	0 : 0.16	0.002						No	FOD
106-46-7	1,4-DICHLOROBENZENE	0.005		0.005		mg/Kg	SRI-SS-24	1 / 70	0 : 0.16	0.005		2.4	c			No	BSL
67-64-1	ACETONE	0.008		45		mg/Kg	SBR17	44 / 68	0 : 1.1	45		6100	n			No	BSL
71-43-2	BENZENE	0.001		0.03		mg/Kg	SRI-7	5 / 66	0 : 0.16	0.03		1.1	c**			No	BSL
75-15-0	CARBON DISULFIDE	0.001		0.004		mg/Kg	SRI-SS-45	3 / 47	0 : 0.06	0.004		82	n			No	BSL
56-23-5	CARBON TETRACHLORIDE	0.001		0.001		mg/Kg	SRI-SS-39	1 / 71	0 : 0.16	0.001		0.61	c*			No	BSL
108-90-7	CHLOROBENZENE	0.037		0.037		mg/Kg	SB4-10	1 / 71	0 : 0.16	0.037		29	n			No	BSL
100-41-4	ETHYLBENZENE	0.012		28		mg/Kg	RDSB2	5 / 71	0 : 0.16	28		5.4	c*			Yes	ASL
179601-23-1	M+P-XYLENE	0.002		0.008		mg/Kg	SRI-SS-43	2 / 19	0.001 : 0.002	0.008		63	n			No	BSL
79-20-9	METHYL ACETATE	0.19		0.32		mg/Kg	SRI-SS-20	3 / 34	0.002 : 0.003	0.32		7800	n			No	BSL
78-93-3	METHYL ETHYL KETONE	0.035		0.035		mg/Kg	SRI-SS-43	1 / 47	0 : 0.2	0.035		2800	n			No	BSL
75-09-2	METHYLENE CHLORIDE	0.004		0.009		mg/Kg	SRI-SS-46	3 / 71	0 : 0.33	0.009		36	n			No	BSL
95-47-6	O-XYLENE	0.004		16		mg/Kg	RDSB2	4 / 31	0.001 : 0.16	16		69	n			No	BSL
75-65-0	t-Butyl Alcohol	0.031		0.031		mg/Kg	SRI-SS-42	1 / 34	0.019 : 1.2	0.031						No	FOD
127-18-4	TETRACHLOROETHYLENE	0.004	J	0.019		mg/Kg	SBBG	5 / 71	0 : 0.16	0.019		8.6	n			No	BSL
108-88-3	TOLUENE	0.002	J	0.3		mg/Kg	SRI-SS-46	21 / 71	0 : 0.16	0.3		500	n			No	BSL
1330-20-7	XYLENES,TOTAL	0.001		94		mg/Kg	RDSB2	10 / 52	0 : 0.16	94		63	n			Yes	ASL
	Semivolatile Organics																
95-50-1	1,2-DICHLOROBENZENE	0.08		0.08		mg/Kg	SBBG	1 / 4	0 : 0	0.08		190	n			No	BSL
51-28-5	2,4-DINITROPHENOL	0.42		0.42		mg/Kg	SRI-SS-29	1 / 33	0 : 7.1	0.42		12	n			No	BSL
91-57-6	2-METHYLNAPHTHALENE	0.07		0.37		mg/Kg	SRI-SS-29	4 / 32	0.004 : 0.35	0.37		23	n			No	BSL
83-32-9	ACENAPHTHENE	0.041		0.089	J	mg/Kg	SBBG	3 / 36	0 : 0.35	0.089		340	n			No	BSL
208-96-8	ACENAPHTHYLENE	0.045		0.045		mg/Kg	SRI-SS-20	1 / 36	0 : 0.35	0.045		170	n			No	BSL
120-12-7	ANTHRACENE	0.045	J	0.19		mg/Kg	SRI-SS-18	4 / 36	0 : 0.35	0.19		1700	n			No	BSL
56-55-3	BENZO(A)ANTHRACENE	0.009		1		mg/Kg	SRI-SS-20	7 / 36	0 : 0.35	1		0.15	c			Yes	ASL
50-32-8	BENZO(A)PYRENE	0.011		1.4		mg/Kg	SRI-SS-20	7 / 36	0 : 0.35	1.4		0.015	c			Yes	ASL
205-99-2	BENZO(B)FLUORANTHENE	0.018		2.4		mg/Kg	SRI-SS-20	8 / 36	0 : 0.35	2.4		0.15	c			Yes	ASL
191-24-2	BENZO(GHI)PERYLENE	0.007		1.3		mg/Kg	SRI-SS-20	7 / 36	0 : 0.35	1.3		170	n			No	BSL
207-08-9	BENZO(K)FLUORANTHENE	0.004		1.1		mg/Kg	SRI-SS-20	6 / 36	0 : 0.35	1.1		1.5	c			No	BSL
92-52-4	Biphenyl	0.057		8		mg/Kg	SRI-SS-24	4 / 32	0.019 : 0.35	8		5.1	n			Yes	ASL
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.094		14		mg/Kg	SRI-SS-29	9 / 36	0 : 0.71	14		35	c**			No	BSL
86-74-8	CARBAZOLE	0.13		0.18		mg/Kg	SRI-SS-18	3 / 35	0 : 0.35	0.18						No	NSL
218-01-9	CHRYSENE	0.005		1.9		mg/Kg	SRI-SS-18	11 / 36	0 : 0.35	1.9		15	c			No	BSL
53-70-3	DIBENZO(A,H)ANTHRACENE	0.004		0.34		mg/Kg	SRI-SS-20	5 / 36	0 : 0.35	0.34		0.015	c			Yes	ASL
132-64-9	DIBENZOFURAN	0.12		0.12		mg/Kg	SRI-SS-29	1 / 19	0.019 : 0.094	0.12		7.8	n			No	BSL
206-44-0	FLUORANTHENE	0.005		2.1		mg/Kg	SRI-SS-18	11 / 36	0 : 0.35	2.1		230	n			No	BSL
86-73-7	FLUORENE	0.039		0.11		mg/Kg	SRI-SS-18	5 / 36	0 : 0.35	0.11		230	n			No	BSL
193-39-5	INDENO(1,2,3-CD)PYRENE	0.007		1.2		mg/Kg	SRI-SS-20	6 / 36	0 : 0.35	1.2		0.15	c			Yes	ASL
78-59-1	ISOPHORONE	0.091	J	0.091	J	mg/Kg	SBBG	1 / 36	0 : 0.35	0.091		510	c**			No	BSL
91-20-3	NAPHTHALENE	0.048		0.22	J	mg/Kg	SBBG	5 / 36	0 : 0.35	0.22		3.6	c**			No	BSL
85-01-8	PHENANTHRENE	0.004		1.3		mg/Kg	SRI-SS-18	8 / 36	0 : 0.35	1.3		170	n			No	BSL
129-00-0	PYRENE	0.005		2.1	J	mg/Kg	SRI-SS-18	11 / 36	0 : 0.35	2.1		170	n			No	BSL
	PCBs																
12672-29-6	PCB-1248 (AROCLOR 1248)	0.0085		0.016	J	mg/Kg	SRI-SS-45	2 / 5	0.0037 : 0.0041	0.016		0.22	c			No	BSL
11097-69-1	PCB-1254 (AROCLOR 1254)	0.011	J	0.011	J	mg/Kg	SRI-SS-45	1 / 5	0.0037 : 0.0041	0.011		0.11	n			No	BSL
11096-82-5	PCB-1260 (AROCLOR 1260)	0.0094		0.025	J	mg/Kg	SRI-SS-42	3 / 5	0.0055 : 0.0061	0.025		0.22	c			No	BSL

Table 2-2
Data Summary and Selection of Chemicals of Potential Concern - Soil Area 2 (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)		Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Inorganics																
7429-90-5	ALUMINUM	3.4		20600		mg/kg	SRI-SS-22	22 / 22		20600		7700	n			Yes	ASL
7440-36-0	ANTIMONY	1.3	J	2		mg/kg	SRI-SS-17	2 / 24	0 : 5.7	2		3.1	n			No	BSL
7440-38-2	ARSENIC	1.3	J	13.5		mg/kg	SRI-7	19 / 23	0.0012 : 5.42	13.5		0.61	c**R			Yes	ASL
7440-39-3	BARIUM	4.4	J	50.9		mg/kg	SRI-SS-22	22 / 23	0.024 : 0.024	50.9		1500	n			No	BSL
7440-41-7	BERYLLIUM	0.0989	J	0.734		mg/kg	SRI-7	19 / 24	0 : 0.0762	0.734		16	n			No	BSL
7440-43-9	CADMIUM	0.178	J	0.988		mg/kg	SRI-SS-18	16 / 24	0 : 0.798	0.988		7	n			No	BSL
7440-70-2	CALCIUM	1.8		73500		mg/kg	SRI-SS-18	19 / 22	107 : 132	73500						No	E
7440-47-3	CHROMIUM	0.0081		59.2	J	mg/kg	SRI-SS-18	22 / 22		59.2		0.29	c*			Yes	ASL
7440-48-4	COBALT	0.402	J	6.63		mg/kg	SRI-SS-18	22 / 23	0.0061 : 0.0061	6.63		2.3	n			Yes	ASL
7440-50-8	COPPER	0.0058		540		mg/kg	SRI-SS-18	22 / 24	8.7 : 12.9	540		310	n			Yes	ASL
7439-89-6	IRON	2.6		35900		mg/kg	SRI-7	22 / 22		35900		5500	n			No	E
7439-92-1	LEAD	2.61		140		mg/kg	SRI-SS-18	23 / 24	0.012 : 0.012	23		400	L			No	BSL
7439-95-4	MAGNESIUM	95.9		2030		mg/kg	SRI-SM-9	13 / 14	0.61 : 0.61	2030						No	E
7439-96-5	MANGANESE	0.03		275	J	mg/kg	SRI-SS-18	23 / 23		275		180	n			Yes	ASL
7439-97-6	MERCURY	0.0001		1		mg/kg	SRI-SS-18	9 / 24	0 : 0.13	1		1	n			No	BSL
7440-02-0	NICKEL	1.06		23.8		mg/kg	SRI-SS-18	22 / 24	0.0049 : 1.03	23.8		150	n			No	BSL
7440-09-7	POTASSIUM	198	J	1080		mg/kg	SRI-SS-29	22 / 23	0.61 : 0.61	1080						No	E
7440-22-4	SILVER	0.139		0.285	J	mg/kg	SRI-SS-18	4 / 24	0 : 0.258	0.285		39	n			No	BSL
7440-23-5	SODIUM	10.1		683		mg/kg	SRI-SS-17	17 / 23	0.61 : 44	683						No	E
7440-28-0	THALLIUM	0.555		2.39	J	mg/kg	SRI-SS-18	7 / 24	0 : 8.27	2.39		0.078	n			Yes	ASL
7440-62-2	VANADIUM	0.0079		73	J	mg/kg	SRI-7	21 / 21		73		39	n			Yes	ASL
7440-66-6	ZINC	0.017		711	J	mg/kg	SRI-SS-18	22 / 22		711		2300	n			No	BSL

(1) Minimum or maximum concentration detected in data set. Samples included in data set are identified in Attachment A.
(2) The concentration used for screening is the maximum detected concentration for all analytes except for lead, which was screened using the mean lead concentration.
(3) Background concentrations were not included in the COPC screening.
(4) Values are the Regional Screening Levels (RSLs) obtained from USEPA November 2013.
Values used for screening are the residential soil RSLs for the lesser of cancer risks equal to 1E-06 or non-cancer risks equal to a hazard index of 0.1.
RSL for xylenes used for m+p-xylene.
RSL for pyrene used for phenanthrene, acenaphthylene, benzo(ghi)perylene.
RSL for chromium (VI) used for chromium.
RSL for Vanadium and compounds used for vanadium.
n - RSL is based on a non-cancer hazard quotient of 0.1
c - RSL is based on an excess lifetime cancer risk of 1 in 1 million
c* - where n RSL < 100X c RSL.
c** - where nSL < 10 x cSL
ns - RSL is based on a non-cancer hazard quotient of 0.1; concentration may exceed Csat
R - RBA applied
(5) There are no Applicable or Relevant and Appropriate Requirements / To Be Considered (ARAR/TBC) for soil.
(6) Analyte is selected as a COPC if the concentration used for screening exceeds the RSL or if no screening value is available.
ASL - Concentration used for screening is greater than the screening toxicity value; the analyte was selected as a COPC.
BSL - Concentration used for screening is less than the screening toxicity value; the analyte was not selected as a COPC.
NSL - No screening level available; the anlayte was selected as a COPC.
FOD - Analyte detected in less than 5% of the samples.
E - Compound is an essential nutrient.

mg/Kg - milligrams per kilogram.
COPC - Chemical of potential concern.
J - Value is estimated.
RBA - relative bioavailability factor

Prepared by / Date: KJC 04/24/14
Checked by / Date: KMW 04/29/14
Revised by / Date: LCG 4/13/2015
Checked by / Date: MJM 4/13/2015

Table 2-3
Data Summary and Selection of Chemicals of Potential Concern - Soil Area 3 (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)		Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Volatile Organics																
79-34-5	1,1,2,2-TETRACHLOROETHANE	0.001	J	0.009		mg/Kg	SRI-SS-8	2 / 37	0 : 0.1	0.009		0.56	c			No	BSL
120-82-1	1,2,4-TRICHLOROBENZENE	0.019		0.019		mg/Kg	SRI-SS-8	1 / 33	0.001 : 0.06	0.019		6.2	n			No	BSL
95-50-1	1,2-DICHLOROBENZENE	0.027		0.027		mg/Kg	SRI-SS-8	1 / 36	0 : 0.063	0.027		190	n			No	BSL
541-73-1	1,3-DICHLOROBENZENE	0.036		0.036		mg/Kg	SRI-SS-8	1 / 36	0 : 0.06	0.036						No	FOD
106-46-7	1,4-DICHLOROBENZENE	0.22		0.22		mg/Kg	SRI-SS-8	1 / 36	0 : 0.06	0.22		2.4	c			No	BSL
67-64-1	ACETONE	0.012		14	J	mg/Kg	SRI-SS-5	18 / 40	0 : 0.44	14		6100	n			No	BSL
71-43-2	BENZENE	0.0007		0.009		mg/Kg	SRI-SS-8	2 / 36	0 : 0.03	0.009		1.1	c**			No	BSL
75-15-0	CARBON DISULFIDE	0.003	J	0.003	J	mg/Kg	SRI-SS-4	1 / 36	0 : 0.06	0.003		82	n			No	BSL
108-90-7	CHLOROBENZENE	0.002		3.2		mg/Kg	SRI-SS-8	3 / 37	0 : 0.06	3.2		29	n			No	BSL
67-66-3	CHLOROFORM	0.001		0.001		mg/Kg	SRI-SS-8	1 / 37	0 : 0.06	0.001		0.29	c*			No	BSL
110-82-7	CYCLOHEXANE	0.11		0.11		mg/Kg	SRI-SS-52	1 / 12	0.001 : 0.002	0.11		700	ns			No	BSL
108-87-2	CYCLOHEXANE, METHYL-	0.59		0.59		mg/Kg	SRI-SS-52	1 / 12	0.001 : 0.002	0.59						Yes	NSL
100-41-4	ETHYLBENZENE	0.3		0.43		mg/Kg	SRI-SS-52	2 / 37	0 : 0.06	0.43		5.4	c*			No	BSL
98-82-8	ISOPROPYLBENZENE	0.61		0.61		mg/Kg	SRI-SS-52	1 / 12	0.001 : 0.00	0.61		210	n			No	BSL
179601-23-1	M+P-XYLENE	0.44		0.44		mg/Kg	SRI-SS-52	1 / 12	0.001 : 0.002	0.44		63	n			No	BSL
79-20-9	METHYL ACETATE	0.17		0.17		mg/Kg	SRI-SS-52	1 / 33	0.002 : 0.12	0.17		7800	n			No	BSL
75-09-2	METHYLENE CHLORIDE	0.002	J	0.44	E	mg/Kg	SRI-SS-8	11 / 44	0 : 0.13	0.44		36	n			No	BSL
127-18-4	TETRACHLOROETHYLENE	0.0032	J	0.07		mg/Kg	SRI-SS-7	4 / 37	0 : 0.063	0.07		8.6	n			No	BSL
108-88-3	TOLUENE	0.002		0.077		mg/Kg	SRI-SS-8	3 / 37	0 : 0.063	0.077		500	n			No	BSL
1330-20-7	XYLENES,TOTAL	2.6		2.6		mg/Kg	SRI-SS-8	1 / 25	0 : 0.06	2.6		63	n			No	BSL
	Semivolatile Organics																
91-57-6	2-METHYLNAPHTHALENE	0.019		91		mg/Kg	SRI-SS-52	4 / 44	0.004 : 0.043	91		23	n			Yes	ASL
83-32-9	ACENAPHTHENE	0.007		3.6		mg/Kg	SRI-SS-52	2 / 45	0 : 0.2	3.6		340	n			No	BSL
208-96-8	ACENAPHTHYLENE	0.007		0.021		mg/Kg	SRI-SS-51	2 / 45	0 : 0.2	0.021		170	n			No	BSL
120-12-7	ANTHRACENE	0.02		1		mg/Kg	SRI-SS-52	3 / 45	0 : 0.2	1		1700	n			No	BSL
56-55-3	BENZO(A)ANTHRACENE	0.008		0.091		mg/Kg	SRI-SS-1	8 / 45	0 : 0.2	0.091		0.15	c			No	BSL
50-32-8	BENZO(A)PYRENE	0.008		0.1		mg/Kg	SRI-SS-1	8 / 45	0 : 0.2	0.1		0.015	c			Yes	ASL
205-99-2	BENZO(B)FLUORANTHENE	0.007		0.15		mg/Kg	SRI-SS-1	10 / 45	0 : 0.2	0.15		0.15	c			Yes	ASL
191-24-2	BENZO(GHI)PERYLENE	0.006		0.097		mg/Kg	SRI-SS-51	9 / 45	0 : 0.2	0.097		170	n			No	BSL
207-08-9	BENZO(K)FLUORANTHENE	0.007		0.063		mg/Kg	SRI-SS-1	8 / 45	0 : 0.2	0.063		1.5	c			No	BSL
92-52-4	Biphenyl	0.066		45		mg/Kg	SRI-SS-8	4 / 44	0.018 : 0.17	45		5.1	n			Yes	ASL
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.11		6.5		mg/Kg	SRI-SS-8	4 / 45	0.071 : 0.8	6.5		35	c**			No	BSL
218-01-9	CHRYSENE	0.011		0.16		mg/Kg	SRI-SS-52	9 / 45	0 : 0.2	0.16		15	c			No	BSL
53-70-3	DIBENZO(A,H)ANTHRACENE	0.009		0.044		mg/Kg	SRI-SS-52	2 / 45	0 : 0.2	0.044		0.015	c			No	FOD
132-64-9	DIBENZOFURAN	2.9		2.9		mg/Kg	SRI-SS-52	1 / 12	0.018 : 0.17	2.9		7.8	n			No	BSL
117-84-0	DI-N-OCTYL PHTHALATE	0.056		0.056		mg/Kg	CPS2H	1 / 45	0.071 : 0.8	0.056		61	n			No	BSL
206-44-0	FLUORANTHENE	0.004		0.23		mg/Kg	SRI-SS-52	12 / 45	0 : 0.2	0.23		230	n			No	BSL
86-73-7	FLUORENE	0.008		6		mg/Kg	SRI-SS-52	2 / 45	0 : 0.2	6		230	n			No	BSL
67-72-1	HEXACHLOROETHANE	0.13		0.13		mg/Kg	SRI-SS-7	1 / 45	0 : 0.4	0.13		4.3	n			No	BSL
193-39-5	INDENO(1,2,3-CD)PYRENE	0.007		0.1		mg/Kg	SRI-SS-52	8 / 45	0 : 0.2	0.1		0.15	c			No	BSL
91-20-3	NAPHTHALENE	0.004		15		mg/Kg	SRI-SS-52	3 / 45	0 : 0.043	15		3.6	c**			Yes	ASL
85-01-8	PHENANTHRENE	0.004		12		mg/Kg	SRI-SS-52	8 / 45	0 : 0.2	12		170	n			No	BSL
129-00-0	PYRENE	0.012		0.45		mg/Kg	SRI-SS-52	10 / 45	0 : 0.2	0.45		170	n			No	BSL
	Inorganics																
7429-90-5	ALUMINUM	1.8		7930	J	mg/kg	SRI-SS-11	35 / 35		7930		7700	n			Yes	ASL
7440-36-0	ANTIMONY	1.52	J	1.77	J	mg/kg	SRI-SS-11	2 / 35	0.0066 : 1.27	1.77		3.1	n			No	BSL
7440-38-2	ARSENIC	0.0072		15.9		mg/kg	SRI-SS-2	27 / 35	1.05 : 1.21	15.9		0.61	c**R			Yes	ASL
7440-39-3	BARIUM	1.6		20.9	J	mg/kg	SRI-SS-8	34 / 35	0.022 : 0.022	20.9		1500	n			No	BSL
7440-41-7	BERYLLIUM	0.0811	J	0.705		mg/kg	SRI-SS-11	8 / 35	0.00055 : 0.0863	0.705		16	n			No	BSL
7440-43-9	CADMIUM	0.244	J	0.593		mg/kg	SRI-SS-1	6 / 35	0.00055 : 0.178	0.593		7	n			No	BSL
7440-70-2	CALCIUM	9.6	J	1060		mg/kg	SRI-SS-8	21 / 35	0.55 : 129	1060						No	E
7440-47-3	CHROMIUM	0.038		73.2		mg/kg	SRI-SS-11	34 / 35	0.741 0.741	73.2		0.29	c*			Yes	ASL
7440-48-4	COBALT	0.262	J	2.07		mg/kg	SRI-SS-8	18 / 35	0.0055 : 0.241	2.07		2.3	n			No	BSL
7440-50-8	COPPER	0.023		185		mg/kg	SRI-SS-1	26 / 35	2.58 : 27.9	185		310	n			No	BSL
7439-89-6	IRON	3.9		41700		mg/kg	SRI-SS-11	35 / 35		41700		5500	n			No	E

Table 2-3
Data Summary and Selection of Chemicals of Potential Concern - Soil Area 3 (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)		Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
7439-92-1	LEAD	1.85		81		mg/kg	SRI-SS-8	33 / 35	0.011 : 0.754	11.1		400	L			No	BSL
7439-95-4	MAGNESIUM	40.1		643		mg/kg	SRI-SS-38	32 / 33	0.55 : 0.55	643						No	E
7439-96-5	MANGANESE	0.019		44		mg/kg	SRI-SS-8	35 / 35		44		180	n			No	BSL
7439-97-6	MERCURY	0.0124	J	0.0362	J	mg/kg	SRI-SS-8	7 / 35	0.0001 : 0.0145	0.0362		1	n			No	BSL
7440-02-0	NICKEL	0.367	J	15.3		mg/kg	SRI-SS-8	32 / 35	0.0044 : 1.2	15.3		150	n			No	BSL
7440-09-7	POTASSIUM	33.2	J	705		mg/kg	SRI-SS-3	34 / 35	0.55 : 0.55	705						No	E
7440-22-4	SILVER	0.399	J	0.399	J	mg/kg	SRI-SS-1	1 / 35	0.0011 : 0.228	0.399		39	n			No	BSL
7440-23-5	SODIUM	35.3		69.5	J	mg/kg	SRI-SS-1	6 / 35	0.55 : 47.3	69.5						No	E
7440-62-2	VANADIUM	0.033		182	J	mg/kg	SRI-SS-2	35 / 35		182		39	n			Yes	ASL
7440-66-6	ZINC	0.044		306		mg/kg	SRI-SS-1	26 / 35	6.51 : 22.6	306		2300	n			No	BSL

(1) Minimum or maximum concentration detected in data set. Samples included in data set are identified in Attachment A.
(2) The concentration used for screening is the maximum detected concentration for all analytes except for lead, which was screened using the mean lead concentration.
(3) Background concentrations were not included in the COPC screening.
(4) Values are the Regional Screening Levels (RSLs) obtained from USEPA November 2013.
Values used for screening are the residential soil RSLs for the lesser of cancer risks equal to 1E-06 or non-cancer risks equal to a hazard index of 0.1.
RSL for xylenes used for m+p-xylene.
RSL for pyrene used for phenanthrene, acenaphthylene, benzo(ghi)perylene.
RSL for chromium (VI) used for chromium.
RSL for Vanadium and compounds used for vanadium.
n - RSL is based on a non-cancer hazard quotient of 0.1
c - RSL is based on an excess lifetime cancer risk of 1 in 1 million
c* - where n RSL < 100X c RSL.
c** - where nSL < 10 x cSL
ns - RSL is based on a non-cancer hazard quotient of 0.1; concentration may exceed Csat
R - RBA applied
(5) There are no Applicable or Relevant and Appropriate Requirements / To Be Considered (ARAR/TBC) for soil.
(6) Analyte is selected as a COPC if the concentration used for screening exceeds the RSL or if no screening value is available.
ASL - Concentration used for screening is greater than the screening toxicity value; the analyte was selected as a COPC.
BSL - Concentration used for screening is less than the screening toxicity value; the analyte was not selected as a COPC.
NSL - No screening level available; the anlayte was selected as a COPC.
FOD - Analyte detected in less than 5% of the samples.
E - Compound is an essential nutrient.

mg/Kg - milligrams per kilogram.
COPC - Chemical of potential concern.
J - Value is estimated.
RBA - relative bioavailability factor

Prepared by / Date: KJC 04/24/14
Checked by / Date: KMW 04/29/14
Revised by / Date: LCG 4/13/2015
Checked by / Date: MJM 4/13/2015

Table 2-4
Data Summary and Selection of Chemicals of Potential Concern - Groundwater
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)		Maximum (1) Concentration (Qualifier)		Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)		Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Volatile Organics (mg/L)																
79-34-5	1,1,2,2-TETRACHLOROETHANE	0.0001		0.015		mg/L	CPS-03	37 / 66	0 : 0.005	0.015		0.000066	c			Yes	ASL
79-00-5	1,1,2-TRICHLOROETHANE	0.0001		0.00755		mg/L	TP-6	11 / 66	0 : 0.005	0.00755		0.000041	n	0.005		Yes	ASL
75-34-3	1,1-DICHLOROETHANE	0.0001		0.01762		mg/L	TP-6	17 / 66	0 : 0.005	0.01762		0.0024	c			Yes	ASL
75-35-4	1,1-DICHLOROETHYLENE	0.0001		0.00543		mg/L	TP-6	22 / 66	0 : 0.005	0.00543		0.026	n	0.007		No	BSL
87-61-6	1,2,3-TRICHLOROBENZENE	0.00056		0.40593		mg/L	TP-6	13 / 20	0.00043 : 0.00215	0.40593		0.00052	n			Yes	ASL
120-82-1	1,2,4-TRICHLOROBENZENE	0.0001		1.9796		mg/L	TP-6	39 / 58	0.0001 : 0.005	1.9796		0.00039	n	0.07		Yes	ASL
95-63-6	1,2,4-TRIMETHYLBENZENE	0.00028	J	0.07274		mg/L	WE-2R	19 / 21	0.00038 : 0.0019	0.07274		0.0015	n			Yes	ASL
156-59-2	1,2-CIS-DICHLOROETHYLENE	0.0001		1.1163		mg/L	TP-4	49 / 63	0.0001 : 0.005	1.1163		0.0028	n	0.07		Yes	ASL
95-50-1	1,2-DICHLOROBENZENE	0.0001		1.254		mg/L	TP-1	46 / 63	0.0001 : 0.00056	1.254		0.028	n	0.6		Yes	ASL
107-06-2	1,2-DICHLOROETHANE	0.0001		0.1946		mg/L	TP-6	50 / 68	0 : 0.005	0.1946		0.00015	c**	0.005		Yes	ASL
540-59-0	1,2-DICHLOROETHYLENE	0.0001		0.079		mg/L	RS-2C	13 / 14	0 : 0	0.079		0.013	n			Yes	ASL
78-87-5	1,2-DICHLOROPROPANE	0.02048		0.02048		mg/L	TP-6	1 / 66	0 : 0.005	0.02048		0.00038	c**	0.005		Yes	ASL
156-60-5	1,2-TRANS-DICHLOROETHYLENE	0.0002		0.2703		mg/L	TP-4	28 / 66	0 : 0.005	0.2703		0.0086	n	0.1		Yes	ASL
108-67-8	1,3,5-TRIMETHYLBENZENE	0.00026	J	0.0165		mg/L	WE-2R	15 / 21	0.0001 : 0.00245	0.0165		0.0087	n			Yes	ASL
541-73-1	1,3-DICHLOROBENZENE	0.0001		0.2369		mg/L	TP-1	39 / 63	0.0001 : 0.0006	0.2369						Yes	NSL
106-46-7	1,4-DICHLOROBENZENE	0.0001		0.8657		mg/L	TP-1	47 / 63	0.0001 : 0.00048	0.8657		0.00042	c	0.075		Yes	ASL
109-69-3	1-CHLOROBUTANE	0.0003		0.4451		mg/L	TP-6	11 / 20	0.00058 : 0.00288	0.4451		0.048	n			Yes	ASL
95-49-8	2-CHLOROTOLUENE	0.00039	J	0.3955		mg/L	TP-6	16 / 19	0.00061 : 0.00305	0.3955		0.018	n			Yes	ASL
591-78-6	2-HEXANONE	0.00188		0.00188		mg/L	TP-2	1 / 21	0.0006 : 0.00308	0.00188		0.0034	n			No	BSL
589-34-4	3-METHYL HEXANE	0.014	J	0.014	J	mg/L	CPS-03	1 / 1		0.014						Yes	NSL
67-64-1	ACETONE	0.00186	J	0.5455		mg/L	TP-4	20 / 66	0 : 0.15	0.5455		1.2	n			No	BSL
71-43-2	BENZENE	0.0001		2.0598		mg/L	TP-4	52 / 69	0 : 0.00028	2.0598		0.00039	c**	0.005		Yes	ASL
75-15-0	CARBON DISULFIDE	0.0006		0.0009		mg/L	TP-3	2 / 56	0.0004 : 0.02	0.0009		0.072	n			No	BSL
108-90-7	CHLOROBENZENE	0.0001		8.1		mg/L	CPS-06	52 / 69	0 : 0.00071	8.1		0.0072	n	0.1		Yes	ASL
75-00-3	CHLOROETHANE	0.0001		0.0004		mg/L	RS-2A	5 / 66	0 : 0.005	0.0004		2.1	n			No	BSL
67-66-3	CHLOROFORM	0.0001		0.00569		mg/L	TP-6	22 / 66	0 : 0.005	0.00569		0.00019	c*			Yes	ASL
108-87-2	CYCLOHEXANE, METHYL-	0.031	J	0.031	J	mg/L	CPS-03	1 / 1		0.031						Yes	NSL
60-29-7	DIETHYL ETHER	0.00465		0.02545		mg/L	CPS-01	4 / 21	0.0002 : 0.00434	0.02545		0.31	n			No	BSL
75-18-3	DIMETHYLSULFIDE	0.02	J	0.02	J	mg/L	CPS-03	1 / 1		0.02						Yes	NSL
100-41-4	ETHYLBENZENE	0.0001		2.0816		mg/L	TP-4	29 / 66	0 : 0.00039	2.0816		0.0013	c*	0.7		Yes	ASL
98-82-8	ISOPROPYLBENZENE	0.0002		0.02007		mg/L	TP-4	13 / 21	0.00031 : 0.00155	0.02007		0.039	n			No	BSL
179601-23-1	M+P-XYLENE	0.0032		0.1		mg/L	CPS-03A	5 / 23	0.0002 : 0.001	0.1		0.019	n			Yes	ASL
74-87-3	METHYL CHLORIDE	0.0004		0.0004		mg/L	RS-2B	1 / 66	0 : 0.01	0.0004		0.019	n			No	BSL
78-93-3	METHYL ETHYL KETONE	0.00319		0.03436		mg/L	TP-4	3 / 56	0.001 : 0.05	0.03436		0.49	n			No	BSL
108-10-1	METHYL ISOBUTYL KETONE	0.04636		0.1256		mg/L	TP-4	2 / 56	0.0006 : 0.05	0.1256		0.1	n			No	FOD
75-09-2	METHYLENE CHLORIDE	0.0002		2.7338		mg/L	TP-6	14 / 67	0 : 0.01	2.7338		0.0084	n	0.005		Yes	ASL
1634-04-4	METHYL-T-BUTYL ETHER	0.0002		0.04047		mg/L	TP-4	45 / 57	0.0001 : 0.005	0.04047		0.012	c*			Yes	ASL
91-20-3	NAPHTHALENE	0.0001		0.036		mg/L	CPS-06	26 / 52	0.0001 : 0.00097	0.036		0.00014	c**			Yes	ASL
103-65-1	N-PROPYLBENZENE	0.00086		0.00643		mg/L	TP-5	7 / 21	0.0001 : 0.00175	0.00643		0.053	n			No	BSL
95-47-6	O-XYLENE	0.0005		1.2796		mg/L	TP-4	23 / 51	0.0001 : 0.001	1.2796		0.019	n			Yes	ASL
106-43-4	P-CHLOROTOLUENE	0.00029	J	0.5621		mg/L	TP-6	17 / 20	0.00056 : 0.0028	0.5621		0.019	n			Yes	ASL
99-87-6	P-ISOPROPYLTOLUENE	0.00113		0.01067		mg/L	TP-6	5 / 21	0.0001 : 0.00164	0.01067						Yes	NSL
115-07-1	PROPYLENE (PROPENE)	0.006	J	0.047	J	mg/L	CPS-03	2 / 2		0.047		0.63	n			No	BSL
135-98-8	SEC-BUTYLBENZENE	0.00073		0.00971		mg/L	TP-5	3 / 21	0.0001 : 0.00215	0.00971		0.16	n			No	BSL
7446-09-5	SULFUR DIOXIDE	0.18	J	1.1	J	mg/L	CPS-03	2 / 2		1.1						Yes	NSL
75-65-0	t-Butyl Alcohol	0.005		0.063		mg/L	WCC-11VS	10 / 38	0.004 : 0.2	0.063						Yes	NSL
98-06-6	TERT-BUTYLBENZENE	0.0001		0.0001		mg/L	TP-3	1 / 21	0.00043 : 0.00215	0.0001		0.051	n			No	BSL
127-18-4	TETRACHLOROETHYLENE	0.0001		0.004		mg/L	TP-6	18 / 66	0 : 0.005	0.004		0.0035	n	0.005		Yes	ASL
109-99-9	TETRAHYDROFURAN	0.00935		0.31399		mg/L	TP-6	5 / 19	0.002 : 0.0295	0.31399		0.32	n			No	BSL
108-88-3	TOLUENE	0.0001		13.8097		mg/L	TP-6	28 / 66	0 : 0.0005	13.8097		0.086	n	1		Yes	ASL
79-01-6	TRICHLOROETHYLENE	0.0002		0.018		mg/L	CPS-03	45 / 68	0 : 0.005	0.018		0.00026	n	0.005		Yes	ASL
75-01-4	VINYL CHLORIDE	0.0001		0.3397		mg/L	TP-4	36 / 66	0 : 0.004	0.3397		0.000015	c	0.002		Yes	ASL
1330-20-7	XYLENES,TOTAL	0.0001		3.2943		mg/L	TP-4	29 / 65	0 : 0.001	3.2943		0.019	n	10		Yes	ASL
	Semivolatile Organics (mg/L)																
95-50-1	1,2-DICHLOROBENZENE	0.005		0.005		mg/L	RW-4	1 / 4	0 : 0	0.005		0.028	n	0.6		No	BSL
106-46-7	1,4-DICHLOROBENZENE	0.002		0.002		mg/L	RW-4	1 / 4	0 : 0	0.002		0.00042	c	0.075		Yes	ASL
123-91-1	1,4-DIOXANE	0.002		0.039		mg/L	CPS-06	12 / 16	0.0009 : 0.001	0.039		0.00067	c*			Yes	ASL
105-67-9	2,4-DIMETHYLPHENOL	0.005		0.1		mg/L	CPS-06	3 / 21	0.0005 : 0.003	0.1		0.027	n			Yes	ASL
606-20-2	2,6-DINITROTOLUENE	0.00069		0.00069		mg/L	CPS-01	1 / 21	0.0005 : 0.00182	0.00069		0.000042	c*			No	FOD
95-57-8	2-CHLOROPHENOL	0.00053		0.006		mg/L	CPS-06	2 / 21	0.0005 : 0.00104	0.006		0.0071	n			No	BSL
91-57-6	2-METHYLNAPHTHALENE	0.0004		0.005		mg/L	CPS-06	4 / 21	0.00009 : 0.0009	0.005		0.0027	n			Yes	ASL
99-09-2	3-NITROANILINE	0.00058		0.00346		mg/L	CPS-01	2 / 21	0.0005 : 0.001	0.00346						Yes	NSL
83-32-9	ACENAPHTHENE	0.0004		0.0004		mg/L	CPS-01	1 / 21	0.00009 : 0.001	0.0004		0.04	n			No	BSL
208-96-8	ACENAPHTHYLENE	0.0002		0.0002		mg/L	DEP-2	1 / 21	0.00009 : 0.001	0.0002		0.0087	n			No	BSL
98-86-2	ACETOPHENONE	0.006		0.006		mg/L	CPS-06	1 / 16	0.0005 : 0.0005	0.006		0.15	n			No	BSL
62-53-3	ANILINE	0.00378		0.4701		mg/L	CPS-01	3 / 3		0.4701		0.011	n			Yes	ASL

Table 2-4
Data Summary and Selection of Chemicals of Potential Concern - Groundwater
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)	Maximum (1) Concentration (Qualifier)	Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
65-85-0	BENZOIC ACID	0.00222	0.00318	mg/L	CPS-03A	2 / 3	0.00149 : 0.00149	0.00318		5.8 n			No	BSL
100-51-6	BENZYL ALCOHOL	0.00136	0.00168	mg/L	WE-2R	2 / 3	0.00122 : 0.00122	0.00168		0.15 n			No	BSL
85-68-7	BENZYL BUTYL PHTHALATE	0.00014	0.002	mg/L	CPS-03A	2 / 21	0.00037 : 0.002	0.002		0.014 c**			No	BSL
92-52-4	Biphenyl	0.0006	0.024	mg/L	CPS-06	3 / 16	0.0005 : 0.0005	0.024		0.000083 n			Yes	ASL
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	0.00557	0.018	mg/L	CPS-03A	4 / 21	0.002 : 0.002	0.018		0.0048 c**	0.006		Yes	ASL
95-48-7	CRESOL,O	0.001	0.02304	mg/L	CPS-01	4 / 21	0.0005 : 0.00132	0.02304		0.072 n			No	BSL
106-44-5	CRESOL,P	0.003	0.02	mg/L	CPS-06	2 / 21	0.0005 : 0.002	0.02		0.14 n			No	BSL
84-74-2	DI-N-BUTYL PHTHALATE	0.004	0.025	mg/L	CPS-03A	4 / 21	0.002 : 0.002	0.025		0.067 n			No	BSL
86-73-7	FLUORENE	0.0001	0.0005	mg/L	CPS-06	2 / 21	0.00009 : 0.001	0.0005		0.022 n			No	BSL
91-20-3	NAPHTHALENE	0.0001	0.018	mg/L	CPS-06	3 / 16	0.00009 : 0.0001	0.018		0.00014 c**			Yes	ASL
98-95-3	NITROBENZENE	0.00997	0.00997	mg/L	WE-2R	1 / 21	0.0005 : 0.00132	0.00997		0.00012 c**			No	FOD
85-01-8	PHENANTHRENE	0.0002	0.0002	mg/L	DEP-2	1 / 21	0.00009 : 0.001	0.0002		0.0087 n			No	BSL
	Pesticides (mg/L)													
50-29-3	4,4'-DDT	0.00001	0.00001	mg/L	CPS-03	1 / 2	0.0000067 : 0.0000067	0.00001		0.0002 c**			No	BSL
309-00-2	ALDRIN	0.0000079	0.0000079	mg/L	WE-2R	1 / 2	0.000003 : 0.000003	0.0000079		0.000004 c*			Yes	ASL
319-85-7	BETA-BHC	0.00001	0.00001	mg/L	WE-2R	1 / 2	0.000002 : 0.000002	0.00001		0.000022 c			No	BSL
33213-65-9	ENDOSULFAN II	0.00003	0.00003	mg/L	CPS-03	1 / 2	0.00001 : 0.00001	0.00003		0.0078 n			No	BSL
58-89-9	GAMMA-BHC (LINDANE)	0.00002	0.00002	mg/L	CPS-03	1 / 2	0.0000019 : 0.0000019	0.00002		0.000036 c**	0.0002		No	BSL
1024-57-3	HEPTACHLOR EPOXIDE	0.0000026	0.00001	mg/L	CPS-03	2 / 2		0.00001		0.0000033 c**	0.0002		Yes	ASL
	Metals, Total (mg/L)													
7429-90-5	ALUMINUM	0.25	189	mg/L	TP-6	39 / 39		189		1.6 n			Yes	ASL
7440-38-2	ARSENIC	0.0065	0.138	mg/L	TP-1	14 / 39	0.005 : 0.0098	0.138		0.000045 c*	0.01		Yes	ASL
7440-39-3	BARIUM	0.0236	1.03	mg/L	TP-6	34 / 39	0.2 : 0.2	1.03		0.29 n	2		Yes	ASL
7440-41-7	BERYLLIUM	0.0014	0.0096	mg/L	TP-6	26 / 39	0.0014 : 0.005	0.0096		0.0016 n	0.004		Yes	ASL
7440-43-9	CADMIUM	0.00055	0.613	mg/L	RS-1A	22 / 49	0 : 0.004	0.613		0.00069 n	0.005		Yes	ASL
7440-70-2	CALCIUM	0.716	190	mg/L	WE-4	40 / 40		190					No	E
7440-47-3	CHROMIUM	0.0012	2.06	mg/L	TP-6	12 / 39	0.0034 : 0.01	2.06		0.000031 c*	0.1		Yes	ASL
7440-48-4	COBALT	0.0051	0.0745	mg/L	DEP-1	30 / 39	0.0023 : 0.05	0.0745		0.00047 n			Yes	ASL
7440-50-8	COPPER	0.0034	123	mg/L	RS-2A	31 / 42	0 : 0.025	123		0.062 n	1.3		Yes	ASL
7439-89-6	IRON	0.0562	770	mg/L	WE-4	38 / 40	0.0522 : 0.0522	770		1.1 n			Yes	ASL
7439-92-1	LEAD	0.002	0.83	mg/L	CPS-02	20 / 54	0 : 0.01	0.057		L	0.015		Yes	NSL
7439-95-4	MAGNESIUM	0.46	16.8	mg/L	TP-6	37 / 40	5 : 5	16.8					No	E
7439-96-5	MANGANESE	0.0246	1.91	mg/L	TP-6	40 / 40		1.91		0.032 n			Yes	ASL
7439-97-6	MERCURY	0.00066	0.01	mg/L	TP-1	4 / 39	0.000026 : 0.00031	0.01		0.000063 n	0.002		Yes	ASL
7440-02-0	NICKEL	0.0052	0.595	mg/L	RS-2A	33 / 39	0.003 : 0.04	0.595		0.03 n			Yes	ASL
7440-09-7	POTASSIUM	0.691	24.2	mg/L	TP-6	35 / 39	5 : 5	24.2					No	E
7782-49-2	SELENIUM	0.0138	0.0278	mg/L	TP-1	3 / 39	0.005 : 0.0094	0.0278		0.0078 n	0.05		Yes	ASL
7440-22-4	SILVER	0.0023	0.021	mg/L	CPS-02	3 / 39	0.00091 : 0.01	0.021		0.0071 n			Yes	ASL
7440-23-5	SODIUM	2.68	142	mg/L	TP-1	39 / 39		142					No	E
7440-28-0	THALLIUM	0.0104	0.0206	mg/L	TP-6	4 / 39	0.0042 : 0.014	0.0206		0.000016 n	0.002		Yes	ASL
7440-62-2	VANADIUM	0.0026	2.03	mg/L	TP-6	21 / 39	0.0025 : 0.05	2.03		0.0063 n			Yes	ASL
7440-66-6	ZINC	0.148	914	mg/L	RS-1A	46 / 47	0.02 : 0.02	914		0.47 n			Yes	ASL

Table 2-4
Data Summary and Selection of Chemicals of Potential Concern - Groundwater
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)	Maximum (1) Concentration (Qualifier)	Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Metals, Dissolved (mg/L)													
7429-90-5	ALUMINUM	0.229	35	mg/l	WE-3	32 / 35	0.2 : 0.2	35		1.6 n			Yes	ASL
7440-36-0	ANTIMONY	0.0059	0.018	mg/l	WCC-5S	5 / 35	0.005 : 0.01	0.018		0.0006 n	0.006		Yes	ASL
7440-38-2	ARSENIC	0.0065	0.0126	mg/l	CPS-01	6 / 35	0.005 : 0.0098	0.0126		0.000045 c*	0.01		Yes	ASL
7440-39-3	BARIUM	0.0244	0.0985	mg/l	DW-5S	28 / 35	0.2 : 0.2	0.0985		0.29 n	2		No	BSL
7440-41-7	BERYLLIUM	0.0017	0.0069	mg/l	MI-08	18 / 35	0.0014 : 0.005	0.0069		0.0016 n	0.004		Yes	ASL
7440-43-9	CADMIUM	0.0042	0.0522	mg/l	MI-08	9 / 35	0.002 : 0.004	0.0522		0.00069 n	0.005		Yes	ASL
7440-70-2	CALCIUM	0.731	69	mg/l	WE-4	34 / 35	5 : 5	69					No	E
7440-47-3	CHROMIUM	0.0065	0.011	mg/l	CPS-02	3 / 35	0.0034 : 0.01	0.011		0.000031 c*	0.1		Yes	ASL
7440-48-4	COBALT	0.0024	0.0748	mg/l	DEP-1	27 / 35	0.0023 : 0.05	0.0748		0.00047 n			Yes	ASL
7440-50-8	COPPER	0.0031	121	mg/l	RS-2A	27 / 32	0.0027 : 0.025	121		0.062 n	1.3		Yes	ASL
7439-89-6	IRON	0.0613	53	mg/l	CPS-03	28 / 36	0.0522 : 0.1	53		1.1 n			Yes	ASL
7439-92-1	LEAD	0.0032	0.0959	mg/l	RS-2A	8 / 35	0.003 : 0.0069	0.008		L	0.015		Yes	NSL
7439-95-4	MAGNESIUM	0.472	5.89	mg/l	DEP-1	30 / 36	5 : 5	5.89					No	E
7439-96-5	MANGANESE	0.0244	0.893	mg/l	RS-2A	36 / 36		0.893		0.032 n			Yes	ASL
7440-02-0	NICKEL	0.0042	0.608	mg/l	RS-2A	30 / 35	0.003 : 0.04	0.608		0.03 n			Yes	ASL
7440-09-7	POTASSIUM	0.616	6.5	mg/l	WE-2RA	29 / 35	5 : 5	6.5					No	E
7440-23-5	SODIUM	2.69	98.2	mg/l	WCC-11VS	35 / 35		98.2					No	E
7440-62-2	VANADIUM	0.003	0.13	mg/l	RS-2A	8 / 35	0.0025 : 0.05	0.13		0.0063 n			Yes	ASL
7440-66-6	ZINC	0.133	36.7		RS-2A	30 / 33	0.02 : 0.02	36.7		0.47 n			Yes	ASL

(1) Minimum or maximum concentration detected in data set. Samples included in data set are identified in Attachment A.
(2) The concentration used for screening is the maximum detected concentration, except for lead which uses the mean.
(3) Background concentrations were not included in the COPC screening.
(4) Values are the Regional Screening Levels (RSLs) obtained from USEPA November 2013
Values used for screening are the tapwater RSLs for the lesser of cancer risks equal to 1E-06 or non-cancer risks equal to a hazard index of 0.1.
RSL for xylenes used for m+p-xylene.
RSL for pyrene used for phenanthrene and acenaphthylene
RSL for chromium (III) used for chromium.
RSL for Endosulfan used for Endosulfan II
RSL for vanadium and compounds used for vanadium.
n - RSL is based on a non-cancer hazard quotient of 0.1
c - RSL is based on an excess lifetime cancer risk of 1 in 1 million
c* - where n RSL < 100X c RSL.
c** - where nSL < 10 x cSL
L - Refer to the RSL User's Guide for lead.
(5) The Applicable or Relevant and Appropriate Requirements / To Be Considered (ARAR/TBC) groundwater values for this HHRA
are the USEPA Maximum Contaminant Levels (MCLs). USEPA MCLs or Treatment Technique (TT) Action Levels are presented in this column.
(6) Analyte is selected as a COPC if the concentration used for screening exceeds the RSL or if no screening value is available.
ASL - Concentration used for screening is greater than the screening toxicity value; the analyte was selected as a COPC.
BSL - Concentration used for screening is less than the screening toxicity value; the analyte was not selected as a COPC.
NSL - No screening level available; the anlayte was selected as a COPC.
FOD - Analyte detected in less than 5% of the samples; analyte not selected as a COPC.
E - Compound is an essential nutrient; analyte not selected as a COPC.
mg/L - milligrams per liter
COPC - Chemical of potential concern.
J - Value is estimated.

Prepared by / Date: KMW 11/13/2013
Checked by / Date: BJR 11/18/2013
Revised by / Date: KMW 04/30/2014
Checked by / Date: MJM 5/20/14

Table 2-5
Data Summary and Selection of Chemicals of Potential Concern - Groundwater Discharging to Surface Water
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

CAS Number	Chemical	Minimum (1) Concentration (Qualifier)	Maximum (1) Concentration (Qualifier)	Units	Location of Maximum Concentration	Frequency of Detection	Range of Reporting Limits for Non Detects	Concentration Used for Screening (2)	Background Value (3)	Screening Toxicity Value (4)	Potential ARAR/TBC Value (5)	Potential ARAR/TBC Source	Retain as COPC? (6)	Rationale for Contaminant Deletion or Selection
	Volatile Organics (mg/L)													
79-34-5	1,1,2,2-TETRACHLOROETHANE	0.0002	0.0002	mg/L	GW-SW-5	1 / 5	0.0001 : 0.0001	0.0002		0.000066 c			Yes	ASL
75-35-4	1,1-DICHLOROETHYLENE	0.0003	0.001	mg/L	GW-SW-4 GW-SW-5	3 / 5	0.0001 : 0.0001	0.001		0.026 n			No	BSL
120-82-1	1,2,4-TRICHLOROBENZENE	0.0002	0.017	mg/L	GW-SW-5	3 / 5	0.0001 : 0.0001	0.017		0.00039 n			Yes	ASL
156-59-2	1,2-CIS-DICHLOROETHYLENE	0.0001	0.0005	mg/L	GW-SW-5	4 / 5	0.0001 : 0.0001	0.0005		0.0028 n			No	BSL
95-50-1	1,2-DICHLOROBENZENE	0.0008	0.0034	mg/L	GW-SW-5	4 / 5	0.0001 : 0.0001	0.0034		0.028 n			No	BSL
107-06-2	1,2-DICHLOROETHANE	0.0002	0.0015	mg/L	GW-SW-5	5 / 5		0.0015		0.00015 c**			Yes	ASL
156-60-5	1,2-TRANS-DICHLOROETHYLENE	0.0001	0.0001	mg/L	GW-SW-5	1 / 5	0.0001 : 0.0001	0.0001		0.0086 n			No	BSL
541-73-1	1,3-DICHLOROBENZENE	0.0001	0.0016	mg/L	GW-SW-5	4 / 5	0.0001 : 0.0001	0.0016					Yes	NSL
106-46-7	1,4-DICHLOROBENZENE	0.0008	0.0022	mg/L	GW-SW-7	4 / 5	0.0001 : 0.0001	0.0022		0.00042 c			Yes	ASL
67-64-1	ACETONE	0.011	0.1	mg/L	GW-SW-4	2 / 5	0.003 : 0.012	0.1		1.2 n			No	BSL
71-43-2	BENZENE	0.0005	0.0009	mg/L	GW-SW-5	3 / 5	0.0001 : 0.0001	0.0009		0.00039 c**			Yes	ASL
108-90-7	CHLOROBENZENE	0.0002	0.0024	mg/L	GW-SW-5	4 / 5	0.0001 : 0.0001	0.0024		0.0072 n			No	BSL
100-41-4	ETHYLBENZENE	0.0001	0.0001	mg/L	GW-SW-5	1 / 5	0.0001 : 0.0001	0.0001		0.0013 c*			No	BSL
1634-04-4	METHYL-T-BUTYL ETHER	0.0001	0.024	mg/L	GW-SW-7	5 / 5		0.024		0.012 c*			Yes	ASL
75-65-0	t-Butyl Alcohol	0.0044	0.05	mg/L	GW-SW-7	4 / 5	0.004 : 0.004	0.05					Yes	NSL
127-18-4	TETRACHLOROETHYLENE	0.0001	0.0001	mg/L	GW-SW-5	1 / 5	0.0001 : 0.0001	0.0001		0.0035 n			No	BSL
108-88-3	TOLUENE	0.0005	0.0005	mg/L	GW-SW-4	1 / 5	0.0001 : 0.0001	0.0005		0.086 n			No	BSL
79-01-6	TRICHLOROETHYLENE	0.0001	0.0007	mg/L	GW-SW-5	3 / 5	0.0001 : 0.0001	0.0007		0.00026 n			Yes	ASL
75-01-4	VINYL CHLORIDE	0.0001	0.0005	mg/L	GW-SW-4 GW-SW-5	4 / 5	0.00008 : 0.00008	0.0005		0.000015 c			Yes	ASL

(1) Minimum or maximum concentration detected in data set. Samples included in data set are identified in Attachment A.
(2) The concentration used for screening is the maximum detected concentration.
(3) Background concentrations were not included in the COPC screening.
(4) Values are the Regional Screening Levels (RSLs) obtained from USEPA November 2013
Values used for screening are the tapwater RSLs for the lesser of cancer risks equal to 1E-06 or non-cancer risks equal to a hazard index of 0.1.
n - RSL is based on a non-cancer hazard quotient of 0.1
c - RSL is based on an excess lifetime cancer risk of 1 in 1 million
c* - where n RSL < 100X c RSL.
c** - where nSL < 10 x cSL
(5) There are no Applicable or Relevant and Appropriate Requirements / To Be Considered (ARAR/TBC) for groundwater
(6) Analyte is selected as a COPC if the concentration used for screening exceeds the RSL or if no screening value is available.
ASL - Concentration used for screening is greater than the screening toxicity value; the analyte was selected as a COPC.
BSL - Concentration used for screening is less than the screening toxicity value; the analyte was not selected as a COPC.
NSL - No screening level available; the anlayte was selected as a COPC.

mg/L - milligrams per liter
COPC - Chemical of potential concern.

Prepared by / Date: KMW 11/06/2013
Checked by / Date: BJR 11/7/2013

Table 2-6
Summary of COPCs by Media
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

CAS Number	Analyte	Media of Concern					
		Soil Area 1	Soil Area 2	Soil Area 3	Groundwater	Indoor Air	Surface Water [1]
79-34-5	1,1,2,2-TETRACHLOROETHANE	X			X		X
79-00-5	1,1,2-TRICHLOROETHANE				X		
75-34-3	1,1-DICHLOROETHANE				X		
87-61-6	1,2,3-TRICHLOROBENZENE	X			X		
120-82-1	1,2,4-TRICHLOROBENZENE	X [2]			X		X
95-94-3	1,2,4,5 -TETRACHLOROBENZENE	X					
95-63-6	1,2,4-TRIMETHYLBENZENE				X	X	
156-59-2	1,2-CIS-DICHLOROETHYLENE	X			X		
95-50-1	1,2-DICHLOROBENZENE	X			X		
107-06-2	1,2-DICHLOROETHANE	X			X		X
540-59-0	1,2-DICHLOROETHYLENE				X		
78-87-5	1,2-DICHLOROPROPANE	X			X		
156-60-5	1,2-TRANS-DICHLOROETHYLENE				X		
108-67-8	1,3,5-TRIMETHYLBENZENE				X	X	
541-73-1	1,3-DICHLOROBENZENE	X			X		X
106-46-7	1,4-DICHLOROBENZENE	X			X [2]		X
123-91-1	1,4-DIOXANE				X		
109-69-3	1-CHLOROBUTANE				X		
105-67-9	2,4-DIMETHYLPHENOL				X		
95-49-8	2-CHLOROTOLUENE				X		
540-84-1	2,2,4-TRIMETHYLPENTANE					X	
91-57-6	2-METHYLNAPHTHALENE			X	X		
622-96-8	4-ETHYLTOLUENE (P-ETHYLTOLUENE)					X	
589-34-4	3-METHYL HEXANE				X		
99-09-2	3-NITROANILINE				X		
309-00-2	ALDRIN				X		
67-64-1	ACETONE						
7429-90-5	ALUMINUM	X	X	X	X		
62-53-3	ANILINE				X		
7440-36-0	ANTIMONY	X			X		
7440-38-2	ARSENIC	X	X	X	X		
7440-39-3	BARIUM				X		
71-43-2	BENZENE	X			X	X	X
56-55-3	BENZO(A)ANTHRACENE	X	X				
50-32-8	BENZO(A)PYRENE	X	X	X			
205-99-2	BENZO(B)FLUORANTHENE	X	X	X			
7440-41-7	BERYLLIUM				X		
92-52-4	BIPHENYL	X	X	X	X		
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE				X		
7440-43-9	CADMIUM				X		
108-90-7	CHLOROBENZENE	X			X		
67-66-3	CHLOROFORM				X		

Table 2-6
Summary of COPCs by Media
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

CAS Number	Analyte	Media of Concern					
		Soil Area 1	Soil Area 2	Soil Area 3	Groundwater	Indoor Air	Surface Water [1]
7440-47-3	CHROMIUM	X	X	X	X		
7440-48-4	COBALT	X	X		X		
7440-50-8	COPPER	X	X		X		
108-87-2	CYCLOHEXANE, METHYL-	X		X	X		
53-70-3	DIBENZO(A,H)ANTHRACENE		X				
64-17-5	ETHANOL					X	
141-78-6	ETHYL ACETATE					X	
75-18-3	DIMETHYLSULFIDE				X		
100-41-4	ETHYLBENZENE	X	X		X		
1024-57-3	HEPTACHLOR EPOXIDE				X		
7439-89-6	IRON				X		
193-39-5	INDENO(1,2,3-CD)PYRENE		X				
7439-92-1	LEAD				X		
179601-23-1	M+P-XYLENE				X		
7439-96-5	MANGANESE		X		X		
7439-97-6	MERCURY	X			X		
79-20-9	METHYL ACETATE						
75-09-2	METHYLENE CHLORIDE	X			X		
1634-04-4	METHYL-T-BUTYL ETHER				X		X
91-20-3	NAPHTHALENE	X		X	X [2]		
142-82-5	N-HEPTANE					X	
7440-02-0	NICKEL				X		
95-47-6	O-XYLENE	X			X		
106-43-4	P-CHLOROTOLUENE				X		
99-87-6	P-ISOPROPYLTOLUENE	X			X		
7782-49-2	SELENIUM				X		
7440-22-4	SILVER				X		
7446-09-5	SULFUR DIOXIDE				X		
75-65-0	T-BUTYL ALCOHOL				X		X
127-18-4	TETRACHLOROETHYLENE	X			X		
7440-28-0	THALLIUM	X	X		X		
108-88-3	TOLUENE	X			X		
79-01-6	TRICHLOROETHYLENE	X			X		X
7440-62-2	VANADIUM	X	X	X	X		
75-01-4	VINYL CHLORIDE				X		X
1330-20-7	XYLENES,TOTAL	X	X		X		
7440-66-6	ZINC				X		

X - INDICATES THAT THE ANALYTE IS A COPC IN THE INDICATED MEDIA
COPC - CHEMICAL OF POTENTIAL CONCERN

Prepared by: KMW 11/14/13
Checked by: LCG 11/21/13
Revised by: LCG 4/30/14
Checked by: KMW 04/30/14

Notes:
1 "Surface Water" COPCs were selected by screening groundwater discharging to surface water against The United States Environmental Protection Agency Regional Screening Levels for tapwater (adjusted)
2 Identified as a COPC based on both VOC and SVOC results.

Table 3-1
Exposure Point Concentration - Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (2)		Maximum (3) Concentration (Qualifier)		Exposure Point Concentration			
								EPC	Units	Statistic	Rationale
	Volatile Organics										
79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/kg	1.1	0.772	N[a]	11		0.772	mg/kg	UCL - N[a]	(5)
87-61-6	1,2,3-TRICHLOROBENZENE	mg/kg	39	107	G[f]	450		107	mg/kg	UCL - G[f]	(5)
120-82-1	1,2,4-TRICHLOROBENZENE	mg/kg	162	260.1	N[a]	1145		260.1	mg/kg	UCL - N[a]	(5)
156-59-2	1,2-CIS-DICHLOROETHYLENE	mg/kg	2.2	3.2	N[b]	26		3.2	mg/kg	UCL - N[b]	(5)
95-50-1	1,2-DICHLOROBENZENE	mg/kg	98	179.6	G[d]	1000		179.6	mg/kg	UCL - G[d]	(5)
107-06-2	1,2-DICHLOROETHANE	mg/kg	0.85	0.932	N[b]	9.5		0.932	mg/kg	UCL - N[b]	(5)
78-87-5	1,2-DICHLOROPROPANE	mg/kg	0.76	1.802	NP[k]	13		1.802	mg/kg	UCL - NP[k]	(5)
541-73-1	1,3-DICHLOROBENZENE	mg/kg	0.58	0.656	G[e]	6		0.656	mg/kg	UCL - G[e]	(5)
106-46-7	1,4-DICHLOROBENZENE	mg/kg	3.5	6.391	G[e]	54		6.391	mg/kg	UCL - G[e]	(5)
71-43-2	BENZENE	mg/kg	1.5	2.72	G[e]	19		2.72	mg/kg	UCL - G[e]	(5)
108-90-7	CHLOROBENZENE	mg/kg	2.5	6.345	LG[h]	42		6.345	mg/kg	UCL - LG[h]	(5)
108-87-2	CYCLOHEXANE, METHYL-	mg/kg	19	313.3	G[f]	210		210	mg/kg	Maximum	(4)
100-41-4	ETHYLBENZENE	mg/kg	6.1	10.69	G[e]	67		10.69	mg/kg	UCL - G[e]	(5)
75-09-2	METHYLENE CHLORIDE	mg/kg	2.8	6.393	G[e]	51		6.393	mg/kg	UCL - G[e]	(5)
95-47-6	O-XYLENE	mg/kg	9.0	15.15	G[e]	110		15.15	mg/kg	UCL - G[e]	(5)
99-87-6	P-ISOPROPYLTOLUENE	mg/kg	0.78	NC	NC[l]	0.31		0.31	mg/kg	Maximum	(4)
127-18-4	TETRACHLOROETHYLENE	mg/kg	0.49	0.744	G[e]	5.9		0.744	mg/kg	UCL - G[e]	(5)
108-88-3	TOLUENE	mg/kg	109	198.7	G[d]	1300		198.7	mg/kg	UCL - G[d]	(5)
79-01-6	TRICHLOROETHYLENE	mg/kg	1.3	1.638	N[a]	15		1.638	mg/kg	UCL - N[a]	(5)
1330-20-7	XYLENES,TOTAL	mg/kg	34	58.55	G[g]	320		58.55	mg/kg	UCL - G[g]	(5)
	Semivolatile Organics										
95-94-3	1,2,4,5-TETRACHLOROBENZENE	mg/kg	0.241	2.729	NP[j]	2.1		2.1	mg/kg	Maximum	(4)
56-55-3	BENZO(A)ANTHRACENE	mg/kg	0.049	0.0942	N[a]	0.29	J	0.0942	mg/kg	UCL - N[a]	(5)
50-32-8	BENZO(A)PYRENE	mg/kg	0.059	0.102	N[a]	0.25	J	0.102	mg/kg	UCL - N[a]	(5)
205-99-2	BENZO(B)FLUORANTHENE	mg/kg	0.074	0.129	N[a] &[b]	0.34	J	0.129	mg/kg	UCL - N[a] &[b]	(5)
92-52-4	Biphenyl	mg/kg	46	527.5	LG[i]	500		500	mg/kg	Maximum	(4)
91-20-3	NAPHTHALENE	mg/kg	0.25	0.665	N[a]	2.3		0.665	mg/kg	UCL - N[a]	(5)
	Inorganics										
7429-90-5	ALUMINUM	mg/kg	5019	6708	N[c]	8580		6708	mg/kg	UCL - N[c]	(5)
7440-36-0	ANTIMONY	mg/kg	0.67	1.114	N[a]	1.41		1.114	mg/kg	UCL - N[a]	(5)
7440-38-2	ARSENIC	mg/kg	3.3	4.564	N[c]	7.82		4.564	mg/kg	UCL - N[c]	(5)
7440-47-3	CHROMIUM	mg/kg	19.5	26.86	N[c]	38		26.86	mg/kg	UCL - N[c]	(5)
7440-48-4	COBALT	mg/kg	1.8	2.796	N[c]	4.4		2.796	mg/kg	UCL - N[c]	(5)
7440-50-8	COPPER	mg/kg	58	77.49	N[c]	122		77.49	mg/kg	UCL - N[c]	(5)
7439-97-6	MERCURY	mg/kg	0.30	0.584	N[a]	1.2		0.584	mg/kg	UCL - N[a]	(5)
7440-28-0	THALLIUM	mg/kg	0.81	1.135	N[a]	1.32		1.135	mg/kg	UCL - N[a]	(5)
7440-62-2	VANADIUM	mg/kg	29	40.25	N[c]	51.8		40.25	mg/kg	UCL - N[c]	(5)

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-1
(2) Notes indicate distribution type and specific UCL selected.
(3) 95% UCL is calculated using ProUCL software (Version 5.0); calculation presented in Attachment B.

Prepared By: LCG 11/11/2013
Checked By: KMW 11/12/2013
Revised By: LCG 04/29/2014
Checked By: KMW 05/07/2014
Prepared By: LCG 4/1/2015
Checked By: LM 4/2/2015

N - Normal Distribution
[a] 95% KM (t) UCL
[b] 95 KM (% Bootstrap)
[c] 95% Student's-t UCL

G - Gamma Distribution
[d] 95% GROS (Approximate Gamma) UCL
[e] 95% Approximate Gamma KM UCL
[f] 95% Adjusted Gamma KM UCL
[g] 95% GROS Adjusted Gamma UCL

LG- Lognormal Distribution
[h] 95% KM (Chebyshev) UCL Non-Parametric
[i] 99% KM (Chebyshev) UCL Non-Parametric

NP - Non-Parametric Distribution
[j] 99% KM (Chebyshev) UCL
[k] 97.5% KM (Chebyshev) UCL

NC - Not Calculated
[l] Insufficient data to calculate meaninful statistics; no UCL calculated

(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.
(5) The 95% UCL is used as the EPC because the calculated 95% UCL is less than the maximum detected concentration.

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
J - Value is estimated.

Table 3-2
Exposure Point Concentration - Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (2)		Maximum (3) Concentration (Qualifier)		Exposure Point Concentration			
								EPC	Units	Statistic	Rationale
	Volatile Organics										
100-41-4	ETHYLBENZENE	mg/kg	ND	ND		ND		ND	mg/kg	NA	
1330-20-7	XYLENES,TOTAL	mg/kg	0.087	0.396	NP[d]	0.27		0.27	mg/kg	Maximum	(4)
	Semivolatile Organics										
56-55-3	BENZO(A)ANTHRACENE	mg/kg	0.13	0.261	N[a]	1		0.261	mg/kg	UCL - N[a]	(5)
50-32-8	BENZO(A)PYRENE	mg/kg	0.16	0.334	N[a]	1.4		0.334	mg/kg	UCL - N[a]	(5)
205-99-2	BENZO(B)FLUORANTHENE	mg/kg	0.27	1.148	G[c]	2.4		1.148	mg/kg	UCL - G[c]	(5)
92-52-4	Biphenyl	mg/kg	0.51	1.427	N[a]	8		1.427	mg/kg	UCL - N[a]	(5)
53-70-3	DIBENZO(A,H)ANTHRACENE	mg/kg	0.047	0.081	N[a]	0.34		0.081	mg/kg	UCL - N[a]	(5)
193-39-5	INDENO(1,2,3-CD)PYRENE	mg/kg	0.13	0.266	N[a]	1.2		0.266	mg/kg	UCL - N[a]	(5)
	Inorganics										(4)
7429-90-5	ALUMINUM	mg/kg	8185	10864	N[b]	20600		10864	mg/kg	UCL - N[b]	(5)
7440-38-2	ARSENIC	mg/kg	3.16	3.997	G[c]	7.39		3.997	mg/kg	UCL - G[c]	(5)
7440-47-3	CHROMIUM	mg/kg	14.50	19.9	G[c]	37.9		19.9	mg/kg	UCL - G[c]	(5)
7440-48-4	COBALT	mg/kg	2.28	3.301	N[b]	6.63		3.301	mg/kg	UCL - N[b]	(5)
7440-50-8	COPPER	mg/kg	102	260	G[c]	540		260	mg/kg	UCL - G[c]	(5)
7439-96-5	MANGANESE	mg/kg	67	103.4	N[b]	275	J	103.4	mg/kg	UCL - N[b]	(5)
7440-28-0	THALLIUM	mg/kg	0.88	1.262	N[a]	2.39	J	1.262	mg/kg	UCL - N[a]	(5)
7440-62-2	VANADIUM	mg/kg	22	26.36	N[b]	43.7		26.36	mg/kg	UCL - N[b]	(5)

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-2
(2) Notes indicate distribution type and specific UCL selected.
(3) 95% UCL is calculated using ProUCL software (Version 5.0); calculation presented in Attachment B.

Prepared By: LCG 11/11/2013
Checked By: KMW 11/12/2013
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Checked By: KMW 05/07/2014
Prepared By: LCG 4/1/2015
Checked By: LM 4/2/2015

N - Normal Distribution
[a] 95% KM (t) UCL
[b] 95% Student's-t UCL

G - Gamma Distribution
[c] 95% Adjusted Gamma UCL

NP - Non-Parametric Distribution
[d] 97.5% KM (Chebyshev) UCL

ND - Statistics were not calculated because results are non-detect.

(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.
(5) The 95% UCL is used as the EPC because the calculated 95% UCL is less than the maximum detected concentration.

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
J - Value is estimated.
mg/kg - milligrams per kilogram

Table 3-3
Exposure Point Concentration - Area 3 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmetic Mean	95% UCL (2)		Maximum (3) Concentration (Qualifier)		Exposure Point Concentration			
								EPC	Units	Statistic	Rationale
	Volatile Organics										
108-87-2	CYCLOHEXANE, METHYL-	mg/kg	ND	ND		ND		ND	mg/kg	ND	
	Semivolatile Organics										
91-57-6	2-METHYLNAPHTHALENE	mg/kg	0.020	0.0197	NP[f]	0.064		0.0197	mg/kg	UCL - NP[f]	(5)
50-32-8	BENZO(A)PYRENE	mg/kg	0.029	0.0449	N[a]	0.1		0.0449	mg/kg	UCL - N[a]	(5)
205-99-2	BENZO(B)FLUORANTHENE	mg/kg	0.038	0.0587	N[a]	0.15		0.0587	mg/kg	UCL - N[a]	(5)
92-52-4	Biphenyl	mg/kg	0.33	4.5	NP[d]	7		4.5	mg/kg	UCL - NP[d]	(5)
91-20-3	NAPHTHALENE	mg/kg	ND	ND		ND		ND	mg/kg	ND	
	Inorganics										
7429-90-5	ALUMINUM	mg/kg	2678	3131	N[b]	4730	J	3131	mg/kg	UCL - N[b]	(5)
7440-38-2	ARSENIC	mg/kg	2.7	3.866	NP[e]	9.36		3.866	mg/kg	UCL - NP[e]	(5)
7440-47-3	CHROMIUM	mg/kg	10.2	14.58	G[c]	45.8		14.58	mg/kg	UCL - G[c]	(5)
7440-62-2	VANADIUM	mg/kg	14.2	17.71	N[b]	40		17.71	mg/kg	UCL - N[b]	(5)

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-2
(2) Notes indicate distribution type and specific UCL selected.
(3) 95% UCL is calculated using ProUCL software (Version 5.0); calculation presented in Attachment B.

Prepared By: LCG 11/11/2013
Checked By: KMW 11/12/2013
Revised By: LCG 04/29/2014
Checked By: KMW 05/07/2014
Prepared By: LCG 4/1/2015
Checked By: LM 4/2/2015

N - Normal Distribution
[a] 95% KM (% Bootstrap) UCL
[b] 95% Student's-t UCL

G - Gamma Distribution
[c] 95% Adjusted Gamma UCL

NP - Non Parametric Distribution
[d] 99% KM (Chebyshev) UCL
[e] 95% KM (BCA) UCL
[f] 95% KM (t) UCL

ND - Statistics were not calculated because results are non-detect

(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.
(5) The 95% UCL is used as the EPC because the calculated 95% UCL is less than the maximum detected concentration.

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
J - Value is estimated.
mg/kg - milligrams per kilogram

Table 3-4
Exposure Point Concentration - Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)		Maximum (3) Concentration (Qualifier)		Exposure Point Concentration			
								EPC	Units	Statistic	Rationale
	Volatile Organics										
79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/kg	2.3	7.115	G[d]	170		7.115	mg/kg	UCL - G[d]	(5)
87-61-6	1,2,3-TRICHLOROBENZENE	mg/kg	28	65.69	G[c]	450		65.69	mg/kg	UCL - G[c]	(5)
120-82-1	1,2,4-TRICHLOROBENZENE	mg/kg	81	145.8	G[d]	1145		145.8	mg/kg	UCL - G[d]	(5)
156-59-2	1,2-CIS-DICHLOROETHYLENE	mg/kg	2.5	8.659	LG[e]	150		8.659	mg/kg	UCL - LG[e]	(5)
95-50-1	1,2-DICHLOROBENZENE	mg/kg	128	465.1	LG[e]	8700		465.1	mg/kg	UCL - LG[e]	(5)
107-06-2	1,2-DICHLOROETHANE	mg/kg	1.2	2.136	G[d]	45		2.136	mg/kg	UCL - G[d]	(5)
78-87-5	1,2-DICHLOROPROPANE	mg/kg	0.4	0.194	N[a]	13		0.194	mg/kg	UCL - N[a]	(5)
541-73-1	1,3-DICHLOROBENZENE	mg/kg	0.62	1.536	LG[e]	27		1.536	mg/kg	UCL - LG[e]	(5)
106-46-7	1,4-DICHLOROBENZENE	mg/kg	4.2	14.18	LG[e]	220		14.18	mg/kg	UCL - LG[e]	(5)
71-43-2	BENZENE	mg/kg	1.9	5.709	LG[e]	98		5.709	mg/kg	UCL - LG[e]	(5)
108-90-7	CHLOROBENZENE	mg/kg	4.1	14.87	NP[g]	310		14.87	mg/kg	UCL - NP[g]	(5)
108-87-2	CYCLOHEXANE, METHYL-	mg/kg	15	236.7	G[c]	210		210	mg/kg	Maximum	(4)
100-41-4	ETHYLBENZENE	mg/kg	5.3	11.04	NP[g]	77		11.04	mg/kg	UCL - NP[g]	(5)
75-09-2	METHYLENE CHLORIDE	mg/kg	7.0	22.62	NP[g]	350		22.62	mg/kg	UCL - NP[g]	(5)
95-47-6	O-XYLENE	mg/kg	9.4	20.21	LG[e]	110		20.21	mg/kg	UCL - LG[e]	(5)
99-87-6	P-ISOPROPYLTOLUENE	mg/kg	0.59	0.157	N[a]	0.374		0.157	mg/kg	UCL - N[a]	(5)
127-18-4	TETRACHLOROETHYLENE	mg/kg	0.46	0.712	G[d]	19		0.712	mg/kg	UCL - G[d]	(5)
108-88-3	TOLUENE	mg/kg	88	197	NP[g]	2100		197	mg/kg	UCL - NP[g]	(5)
79-01-6	TRICHLOROETHYLENE	mg/kg	15	69.28	LG[e]	1200		69.28	mg/kg	UCL - LG[e]	(5)
1330-20-7	XYLENES,TOTAL	mg/kg	26	52	NP[g]	320		52	mg/kg	UCL - NP[g]	(5)
	Semivolatile Organics										
95-94-3	1,2,4,5-TETRACHLOROBENZENE	mg/kg	0.22	2.185	NP[h]	2.1		2.1	mg/kg	Maximum	(4)
56-55-3	BENZO(A)ANTHRACENE	mg/kg	0.038	0.0366	N[a]	0.29	J	0.0366	mg/kg	UCL - N[a]	(5)
50-32-8	BENZO(A)PYRENE	mg/kg	0.041	0.0393	N[a]	0.25	J	0.0393	mg/kg	UCL - N[a]	(5)
205-99-2	BENZO(B)FLUORANTHENE	mg/kg	0.049	0.0573	N[b]	0.34	J	0.0573	mg/kg	UCL - N[b]	(5)
92-52-4	Biphenyl	mg/kg	21	192	LG[f]	500		192	mg/kg	UCL - LG[f]	(5)
91-20-3	NAPHTHALENE	mg/kg	0.31	0.646	N[a]	5.3		0.646	mg/kg	UCL - N[a]	(5)
	Inorganics										
7429-90-5	ALUMINUM	mg/kg	2985	6380	NP[i]	11600		6380	mg/kg	UCL - NP[i]	(5)
7440-36-0	ANTIMONY	mg/kg	0.84	0.859	N[a]	4.03		0.859	mg/kg	UCL - N[a]	(5)
7440-38-2	ARSENIC	mg/kg	2.8	11.73	NP[h]	32.8		11.73	mg/kg	UCL - NP[h]	(5)
7440-47-3	CHROMIUM	mg/kg	18.5	46.11	NP[i]	144		46.11	mg/kg	UCL - NP[i]	(5)
7440-48-4	COBALT	mg/kg	0.70	1.002	N[a]	4.4		1.002	mg/kg	UCL - N[a]	(5)
7440-50-8	COPPER	mg/kg	58	107.1	G[c]	1310	J	107.1	mg/kg	UCL - G[c]	(5)
7439-97-6	MERCURY	mg/kg	0.089	0.296	G[c]	1.2		0.296	mg/kg	UCL - G[c]	(5)
7440-28-0	THALLIUM	mg/kg	0.76	0.662	N[a] & [b]	1.32		0.662	mg/kg	UCL - N[a] & [b]	(5)
7440-62-2	VANADIUM	mg/kg	32	64.72	G[c]	304		64.72	mg/kg	UCL - G[c]	(5)

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-1
(2) Notes indicate distribution type and specific UCL selected.
(3) 95% UCL is calculated using ProUCL software (Version 5.0); calculation presented in Attachment B.

Prepared By: LCG 11/11/2013
Checked By: KMW 11/12/2013
Revised by: LCG 5/5/2014
Checked by: KMW 5/8/2014
Prepared By: LCG 4/1/2015
Checked By: LM 4/2/2015

N - Normal Distribution
[a] 95% KM (t) UCL
[b] 95% KM (% Bootstrap) UCL

G - Gamma Distribution
[c] 95% Adjusted Gamma UCL
[d] 95% Approximate Gamma UCL

LG - Lognormal Distribution
[e] 97.5% KM (Chebyshev) UCL Non-Parametric
[f] 99% KM (Chebyshev) UCL Non-Parametric

NP - Non Parametric Distribution
[g] 97.5% KM (Chebyshev) UCL
[h] 99% KM (Chebyshev) UCL
[i] 97.5% Chebyshev (Mean, Sd) UCL

(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.
(5) The 95% UCL is used as the EPC because the calculated 95% UCL is less than the maximum detected concentration.

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
J - Value is estimated.
mg/kg - milligrams per kilogram

Table 3-5
Exposure Point Concentration - Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)		Maximum (3) Concentration (Qualifier)		Exposure Point Concentration			
								EPC	Units	Statistic	Rationale
	Volatile Organics										
100-41-4	ETHYLBENZENE	mg/kg	1.27	2.609	N[a]	28		2.609	mg/kg	UCL - N[a]	(5)
1330-20-7	XYLENES,TOTAL	mg/kg	7	23.28	G[d]	94		23.28	mg/kg	UCL - G[d]	(5)
	Semivolatile Organics										
56-55-3	BENZO(A)ANTHRACENE	mg/kg	0.092	0.155	N[b]	1		0.155	mg/kg	UCL - N[b]	(5)
50-32-8	BENZO(A)PYRENE	mg/kg	0.117	0.206	N[a]	1.4		0.206	mg/kg	UCL - N[a]	(5)
205-99-2	BENZO(B)FLUORANTHENE	mg/kg	0.18	0.59	G[d]	2.4		0.59	mg/kg	UCL - G[d]	(5)
92-52-4	Biphenyl	mg/kg	0.36	0.845	N[b]	8		0.845	mg/kg	UCL - N[b]	(5)
53-70-3	DIBENZO(A,H)ANTHRACENE	mg/kg	0.040	0.0514	N[a]	0.34		0.0514	mg/kg	UCL - N[a]	(5)
193-39-5	INDENO(1,2,3-CD)PYRENE	mg/kg	0.092	0.16	N[a] & [b]	1.2		0.16	mg/kg	UCL - N[a] & [b]	(5)
	Inorganics										
7429-90-5	ALUMINUM	mg/kg	6708	11280	NP[g]	20600		11280	mg/kg	UCL - NP[g]	(5)
7440-38-2	ARSENIC	mg/kg	3.3	6.041	LG[e]	13.5		6.041	mg/kg	UCL - LG[e]	(5)
7440-47-3	CHROMIUM	mg/kg	18.0	28.37	NP[h]	59.2		28.37	mg/kg	UCL - NP[h]	(5)
7440-48-4	COBALT	mg/kg	2.0	3.247	G[c]	6.63		3.247	mg/kg	UCL - G[c]	(5)
7440-50-8	COPPER	mg/kg	69	342.1	LG[f]	540		342.1	mg/kg	UCL - LG[f]	(5)
7439-96-5	MANGANESE	mg/kg	53	88.95	G[d]	275	J	88.95	mg/kg	UCL - G[d]	(5)
7440-28-0	THALLIUM	mg/kg	0.94	0.981	N[a]	2.39	J	0.981	mg/kg	UCL - N[a]	(5)
7440-62-2	VANADIUM	mg/kg	27	47.69	NP[g]	73	J	47.69	mg/kg	UCL - NP[g]	(5)

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-1
(2) Notes indicate distribution type and specific UCL selected.
(3) 95% UCL is calculated using ProUCL software (Version 5.0); calculation presented in Attachment B.

Prepared By: LCG 11/11/2013
Checked By: KMW 11/12/2013
Revised by: LCG 5/5/2014
Checked by: KMW 5/8/2014
Prepared By: LCG 4/1/2015
Checked By: LM 4/2/2015

N - Normal Distribution
[a] 95% KM (% Bootstrap) UCL
[b] 95% KM (t) UCL

G - Gamma Distribution
[c] 95% GROS Adjusted Gamma UCL
[d] 95% Adjusted Gamma KM UCL

LG - Lognormal Distribution
[e] 95% KM (Chebyshev) UCL Non-Parametric
[f] 99% KM Chebyshev UCL Non-Parametric

NP - Non-Parametric Distribution
[g] 95% Chebyshev (Mean, Sd) UCL
[h] 97.5% KM (Chebyshev) UCL

ND - Statistics were not calculated because results are non-detect

(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.
(5) The 95% UCL is used as the EPC because the calculated 95% UCL is less than the maximum detected concentration.

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
J - Value is estimated.
mg/kg - milligrams per kilogram

Table 3-6
Exposure Point Concentration - Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)		Maximum (3) Concentration (Qualifier)		Exposure Point Concentration			
								EPC	Units	Statistic	Rationale
	Volatile Organics										
108-87-2	CYCLOHEXANE, METHYL-	mg/kg	0.050	NC	NC[f]	0.59		0.59	mg/kg	Maximum	(4)
	Semivolatile Organics										
91-57-6	2-METHYLNAPHTHALENE	mg/kg	2.1	6.053	N[a]	91		6.053	mg/kg	UCL-N[a]	(5)
50-32-8	BENZO(A)PYRENE	mg/kg	0.028	0.0293	N[b]	0.1		0.0293	mg/kg	UCL-N[b]	(5)
205-99-2	BENZO(B)FLUORANTHENE	mg/kg	0.033	0.0347	N[b]	0.15		0.0347	mg/kg	UCL-N[b]	(5)
92-52-4	Biphenyl	mg/kg	1.32	3.306	N[a]	45		3.306	mg/kg	UCL-N[a]	(5)
91-20-3	NAPHTHALENE	mg/kg	0.37	1.051	N[a]	15		1.051	mg/kg	UCL-N[a]	(5)
	Inorganics										
7429-90-5	ALUMINUM	mg/kg	3077	4513	NP[e]	7930	J	4513	mg/kg	UCL-NP[e]	(5)
7440-38-2	ARSENIC	mg/kg	2.99	6.466	NP[d]	15.9		6.466	mg/kg	UCL-NP[d]	(5)
7440-47-3	CHROMIUM	mg/kg	13.88	19.86	G[c]	73.2		19.86	mg/kg	UCL-G[c]	(5)
7440-62-2	VANADIUM	mg/kg	25	53.83	NP[e]	182	J	53.83	mg/kg	UCL-NP[e]	(5)

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-1
(2) Notes indicate distribution type and specific UCL selected.
(3) 95% UCL is calculated using ProUCL software (Version 5.0); calculation presented in Attachment B.

Prepared By: LCG 11/11/2013
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Checked by: KMW 5/8/2014
Prepared By: LCG 4/1/2015
Checked By: LM 4/2/2015

N - Normal Distribution
[a] 95% KM (t) UCL
[b] 95% KM (% Bootstrap) UCL

G - Gamma Distribution
[c] 95% GROS Adjusted Gamma KM UCL

NP - Non-Parametric Distribution
[d] 97.5% KM (Chebyshev) UCL
[e] 95% Chebyshev (Mean, Sd) UCL

NC - Not Calculated
[f] Only one distinct data value detected

ND - Statistics were not calculated because results are non-detect

(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.
(5) The 95% UCL is used as the EPC because the calculated 95% UCL is less than the maximum detected concentration.

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
E - Value exceeds calibration range
J - Value is estimated.
mg/kg - milligrams per kilogram
na - No suggested UCL to use

Table 3-7
Exposure Point Concentration - Sewer Line
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean (2)	95% UCL (3)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale
	Volatile Organics								
79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
87-61-6	1,2,3-TRICHLOROBENZENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
120-82-1	1,2,4-TRICHLOROBENZENE	mg/kg	0.036	NC	0.078	0.078	mg/kg	Maximum	(4)
156-59-2	1,2-CIS-DICHLOROETHYLENE	mg/kg	0.33	NC	1.3	1.3	mg/kg	Maximum	(4)
95-50-1	1,2-DICHLOROBENZENE	mg/kg	4.0	NC	26	26	mg/kg	Maximum	(4)
107-06-2	1,2-DICHLOROETHANE	mg/kg	0.81	NC	4.1	4.1	mg/kg	Maximum	(4)
78-87-5	1,2-DICHLOROPROPANE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
541-73-1	1,3-DICHLOROBENZENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
106-46-7	1,4-DICHLOROBENZENE	mg/kg	0.26	NC	0.89	0.89	mg/kg	Maximum	(4)
71-43-2	BENZENE	mg/kg	3.8	NC	12	12	mg/kg	Maximum	(4)
108-90-7	CHLOROBENZENE	mg/kg	1.2	NC	6.7	6.7	mg/kg	Maximum	(4)
108-87-2	CYCLOHEXANE, METHYL-	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
100-41-4	ETHYLBENZENE	mg/kg	6.8	NC	39	39	mg/kg	Maximum	(4)
75-09-2	METHYLENE CHLORIDE	mg/kg	5.3	NC	32	32	mg/kg	Maximum	(4)
95-47-6	O-XYLENE	mg/kg	12	NC	54	54	mg/kg	Maximum	(4)
99-87-6	P-ISOPROPYLTOLUENE	mg/kg	NA	NC	NA	NA	mg/kg	Maximum	(4)
127-18-4	TETRACHLOROETHYLENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
108-88-3	TOLUENE	mg/kg	50	NC	270	270	mg/kg	Maximum	(4)
79-01-6	TRICHLOROETHYLENE	mg/kg	0.64	NC	2.7	2.7	mg/kg	Maximum	(4)
1330-20-7	XYLENES,TOTAL	mg/kg	35	NC	170	170	mg/kg	Maximum	(4)
	Semivolatile Organics								
95-94-3	1,2,4,5 -TETRACHLOROBENZENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
91-57-6	2-METHYLNAPHTHALENE	mg/kg	0.14	NC	0.37	0.37	mg/kg	Maximum	(4)
56-55-3	BENZO(A)ANTHRACENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
50-32-8	BENZO(A)PYRENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
205-99-2	BENZO(B)FLUORANTHENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
92-52-4	Biphenyl	mg/kg	0.29	NC	0.83	0.83	mg/kg	Maximum	(4)
53-70-3	DIBENZO(A,H)ANTHRACENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
193-39-5	INDENO(1,2,3-CD)PYRENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
91-20-3	NAPHTHALENE	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
	Inorganics								
7429-90-5	ALUMINUM	mg/kg	4667	NC	7800	7800	mg/kg	Maximum	(4)
7440-36-0	ANTIMONY	mg/kg	ND	NC	ND	NA	mg/kg	NA	NA
7440-38-2	ARSENIC	mg/kg	3.7	NC	7.39	7.39	mg/kg	Maximum	(4)
7440-47-3	CHROMIUM	mg/kg	12.3	NC	20.7	20.7	mg/kg	Maximum	(4)
7440-48-4	COBALT	mg/kg	1.0	NC	2.18	2.18	mg/kg	Maximum	(4)
7440-50-8	COPPER	mg/kg	43	NC	92.4	92.4	mg/kg	Maximum	(4)
7439-96-5	MANGANESE	mg/kg	36	NC	69.8	69.8	mg/kg	Maximum	(4)
7439-89-6	IRON	mg/kg	10443.33	NC	20400	20400	mg/kg	Maximum	(4)
7440-28-0	THALLIUM	mg/kg	1.12	NC	1.68	1.68	mg/kg	Maximum	(4)
7440-62-2	VANADIUM	mg/kg	19.93	NC	29.1	29.1	mg/kg	Maximum	(4)

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-1.
(2) The arithmetic mean was calculated using 1/2 the laboratory reporting limit for non-detects.
(3) There were too few data points to calculate a 95% UCL.
(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.

Prepared By: KMW 11/6/2013
Checked By: BJR 11/21/2013
Revised By: KMW 5/16/14
Checked By: MJM 5/20/14

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
J - Value is estimated.
mg/kg - milligrams per kilogram

Table 3-8
Exposure Point Concentration - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmetic Mean (2)	95% UCL (3)		Maximum Concentration (Qualifier)	Exposure Point Concentration			
							EPC	Units	Statistic	Rationale
	Volatile Organics (mg/L)									
79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/L	0.0012	0.00263	LG[g]	0.015	0.00263	mg/L	UCL - LG[g]	(5)
79-00-5	1,1,2-TRICHLOROETHANE	mg/L	0.0004	0.000593	LG[h]	0.00755	0.0005934	mg/L	UCL - LG[h]	(5)
75-34-3	1,1-DICHLOROETHANE	mg/L	0.0006	0.00218	NP[l]	0.01762	0.00218	mg/L	UCL - NP[l]	(5)
87-61-6	1,2,3-TRICHLOROBENZENE	mg/L	0.0441	0.314	LG[j]	0.40593	0.314	mg/L	UCL - LG[j]	(5)
120-82-1	1,2,4-TRICHLOROBENZENE	mg/L	0.0852	0.509	LG[j]	1.9796	0.509	mg/L	UCL - LG[j]	(5)
95-63-6	1,2,4-TRIMETHYLBENZENE	mg/L	0.0151	0.0303	G[e]	0.07274	0.0303	mg/L	UCL - G[e]	(5)
156-59-2	1,2-CIS-DICHLOROETHYLENE	mg/L	0.0277	0.221	LG[j]	1.1163	0.221	mg/L	UCL - LG[j]	(5)
95-50-1	1,2-DICHLOROBENZENE	mg/L	0.1075	0.502	LG[j]	1.254	0.502	mg/L	UCL - LG[j]	(5)
107-06-2	1,2-DICHLOROETHANE	mg/L	0.0124	0.0231	G[f]	0.1946	0.0231	mg/L	UCL - G[f]	(5)
540-59-0	1,2-DICHLOROETHYLENE	mg/L	0.0100	0.0713	LG[i]	0.079	0.0713	mg/L	UCL - LG[i]	(5)
78-87-5	1,2-DICHLOROPROPANE	mg/L	0.0005	NC	NC	0.02048	0.02048	mg/L	Maximum	(4)
156-60-5	1,2-TRANS-DICHLOROETHYLENE	mg/L	0.0060	0.0265	LG[g]	0.2703	0.0265	mg/L	UCL - LG[g]	(5)
108-67-8	1,3,5-TRIMETHYLBENZENE	mg/L	0.0036	0.00948	G[e]	0.0165	0.00948	mg/L	UCL - G[e]	(5)
541-73-1	1,3-DICHLOROBENZENE	mg/L	0.0154	0.0325	G[f]	0.2369	0.0325	mg/L	UCL - G[f]	(5)
106-46-7	1,4-DICHLOROBENZENE	mg/L	0.0517	0.264	LG[j]	0.8657	0.264	mg/L	UCL - LG[j]	(5)
109-69-3	1-CHLOROBUTANE	mg/L	0.0406	0.292	NP[n]	0.4451	0.292	mg/L	UCL - NP[n]	(5)
95-49-8	2-CHLOROTOLUENE	mg/L	0.0624	0.106	N[b[	0.3955	0.106	mg/L	UCL - N[b[	(5)
589-34-4	3-METHYL HEXANE	mg/L	0.0140	NC	NC	0.014	0.014	mg/L	Maximum	(4)
71-43-2	BENZENE	mg/L	0.0821	0.364	LG[k]	2.0598	0.364	mg/L	UCL - LG[k]	(5)
108-90-7	CHLOROBENZENE	mg/L	0.4360	1.503	LG[k]	8.1	1.503	mg/L	UCL - LG[k]	(5)
67-66-3	CHLOROFORM	mg/L	0.0004	0.000583	LG[h]	0.00569	0.0005829	mg/L	UCL - LG[h]	(5)
108-87-2	CYCLOHEXANE, METHYL-	mg/L	0.0310	NC	NC	0.031	0.031	mg/L	Maximum	(4)
75-18-3	DIMETHYLSULFIDE	mg/L	0.0200	NC	NC	0.02	0.02	mg/L	Maximum	(4)
100-41-4	ETHYLBENZENE	mg/L	0.0549	0.419	LG[j]	2.0816	0.419	mg/L	UCL - LG[j]	(5)
179601-23-1	M+P-XYLENE	mg/L	0.0079	0.0175	N[b]	0.1	0.0175	mg/L	UCL - N[b]	(5)
75-09-2	METHYLENE CHLORIDE	mg/L	0.0451	0.341	LG[k]	2.7338	0.341	mg/L	UCL - LG[k]	(5)
1634-04-4	METHYL-T-BUTYL ETHER	mg/L	0.0060	0.0137	NP[o]	0.04047	0.0137	mg/L	UCL - NP[o]	(5)
91-20-3	NAPHTHALENE	mg/L	0.0032	0.0102	G[e]	0.036	0.0102	mg/L	UCL - G[e]	(5)
95-47-6	O-XYLENE	mg/L	0.0461	0.32	LG[j]	1.2796	0.32	mg/L	UCL - LG[j]	(5)
106-43-4	P-CHLOROTOLUENE	mg/L	0.0679	0.177	G[c]	0.5621	0.177	mg/L	UCL - G[c]	(5)
99-87-6	P-ISOPROPYLTOLUENE	mg/L	0.0011	0.00209	N[a]	0.01067	0.00209	mg/L	UCL - N[a]	(5)
7446-09-5	SULFUR DIOXIDE	mg/L	0.6400	NC	NC	1.1	1.1	mg/L	Maximum	(4)
75-65-0	t-Butyl Alcohol	mg/L	0.0089	0.0116	G[c]	0.063	0.0116	mg/L	UCL - G[c]	(5)
127-18-4	TETRACHLOROETHYLENE	mg/L	0.0004	0.00057	NP[m]	0.004	0.0005696	mg/L	UCL - NP[m]	(5)
108-88-3	TOLUENE	mg/L	0.5190	3.656	LG[j]	13.8097	3.656	mg/L	UCL - LG[j]	(5)
79-01-6	TRICHLOROETHYLENE	mg/L	0.0017	0.00641	G[d]	0.018	0.00641	mg/L	UCL - G[d]	(5)
75-01-4	VINYL CHLORIDE	mg/L	0.0089	0.0466	LG[k]	0.3397	0.0466	mg/L	UCL - LG[k]	(5)
1330-20-7	XYLENES,TOTAL	mg/L	0.1327	0.354	G[f]	3.2943	0.354	mg/L	UCL - G[f]	(5)
	Semivolatile Organics (mg/L)									
123-91-1	1,4-DIOXANE	mg/L	0.0046	0.00991	LG[h]	0.039	0.00991	mg/L	UCL - LG[h]	(5)
105-67-9	2,4-DIMETHYLPHENOL	mg/L	0.0058	0.0163	N[b]	0.1	0.0163	mg/L	UCL - N[b]	(5)
91-57-6	2-METHYLNAPHTHALENE	mg/L	0.0004	0.0009	N[b]	0.005	0.0009046	mg/L	UCL - N[b]	(5)
99-09-2	3-NITROANILINE	mg/L	0.0004	NA	NP[m*]	0.00346	0.00346	mg/L	Maximum	(4)
62-53-3	ANILINE	mg/L	0.1695	NC	NC	0.4701	0.4701	mg/L	Maximum	(4)
92-52-4	Biphenyl	mg/L	0.0018	0.00537	N[b]	0.024	0.00537	mg/L	UCL - N[b]	(5)
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	mg/L	0.0026	0.00513	N[b]	0.018	0.00513	mg/L	UCL - N[b]	(5)
	Pesticides (mg/L)									
309-00-2	ALDRIN	mg/L	0.000005	NC	NC	0.0000079	0.0000079	mg/L	Maximum	(4)
1024-57-3	HEPTACHLOR EPOXIDE	mg/L	0.000006	NC	NC	0.00001	0.00001	mg/L	Maximum	(4)
	Metals, Total (mg/L)									
7429-90-5	ALUMINUM	mg/L	21.46	55.28	NP[p]	189	55.28	mg/L	UCL - NP[p]	(5)
7440-36-0	ANTIMONY (5)	mg/L	0.0056	0.00832	N[a]	0.018	0.00832	mg/L	UCL - N[a]	(5)
7440-38-2	ARSENIC	mg/L	0.0161	0.0251	N[a&b]	0.138	0.0251	mg/L	UCL - N[a&b]	(5)
7440-39-3	BARIUM	mg/L	0.1340	0.362	NP[o]	1.03	0.362	mg/L	UCL - NP[o]	(5)
7440-41-7	BERYLLIUM	mg/L	0.0030	0.00373	LG[h]	0.0096	0.00373	mg/L	UCL - LG[h]	(5)
7440-43-9	CADMIUM	mg/L	0.0214	0.0808	LG[g]	0.613	0.0808	mg/L	UCL - LG[g]	(5)
7440-47-3	CHROMIUM	mg/L	0.1791	0.463	G[c]	2.06	0.463	mg/L	UCL - G[c]	(5)
7440-48-4	COBALT	mg/L	0.0297	0.344	N[b]	0.0745	0.0745	mg/L	Maximum	(4)
7440-50-8	COPPER	mg/L	10.3753	52.99	LG[j]	123	52.99	mg/L	UCL - LG[j]	(5)
7439-89-6	IRON	mg/L	68.2535	342.6	LG[j]	770	342.6	mg/L	UCL - LG[j]	(5)
7439-92-1	LEAD	mg/L	0.0679	0.135	G[c]	0.83	0.135	mg/L	UCL - G[c]	(5)
7439-96-5	MANGANESE	mg/L	0.4934	0.763	NP[p]	1.91	0.763	mg/L	UCL - NP[p]	(5)
7439-97-6	MERCURY	mg/L	0.0004	0.00087	N[b]	0.01	0.0008698	mg/L	UCL - N[b]	(5)
7440-02-0	NICKEL	mg/L	0.0879	0.24	LG[k]	0.595	0.24	mg/L	UCL - LG[k]	(5)
7782-49-2	SELENIUM	mg/L	0.0052	0.00744	N[b]	0.0278	0.00744	mg/L	UCL - N[b]	(5)
7440-22-4	SILVER	mg/L	0.0023	0.00262	N[b]	0.021	0.00262	mg/L	UCL - N[b]	(5)
7440-28-0	THALLIUM	mg/L	0.0069	0.00788	N[b]	0.0206	0.00788	mg/L	UCL - N[b]	(5)
7440-62-2	VANADIUM	mg/L	0.1732	0.397	G[c]	2.03	0.397	mg/L	UCL - G[c]	(5)
7440-66-6	ZINC	mg/L	24.9848	223.1	NP[n]	914	223.1	mg/L	UCL - NP[n]	(5)

Table 3-8
Exposure Point Concentration - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmetic Mean (2)	95% UCL (3)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-4.
(2) The arithmetic mean was calculated using 1/2 the laboratory reporting limit for non-detects.
(3) 95% UCL is calculated using ProUCL software (Version 5.0); calculation presented in Attachment F.
(4) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated.
(5) The 95% UCL is used as the EPC because the calculated 95% UCL is less than the maximum detected concentration.
(6) Antimony statistics and EPC are based on dissolved results.

Prepared By: KMW 11/13/2013
Checked By: BJR 11/21/2013
Revised by: KMW 5/16/14
Checked By: MJM 5/20/14
Prepared By: LCG 4/1/2015
Checked By: LM 4/2/2015

N - Normal Distribution
[a] 95% KM (% Bootstrap) UCL
[b] 95% KM (t) UCL

G - Gamma Distribution
[c] 95% Adjusted Gamma UCL
[d] 95% GROS Approximate Gamma UCL
[e] 95% GROS Adjusted Gamma UCL
[f] 95% Approximate Gamma UCL

LG - Lognormal Distribution
[g] 95% KM (Chebyshev) UCL Non-Parametric
[h] 95% KM (BCA) UCL Non-Parametric
[i] 99% Chebyshev (Mean Sd) UCL Non-Parametric
[j] 99% KM Chebyshev UCL Non-Parametric
[k] 97.5% KM Chebyshev UCL Non-Parametric

NP - Non-Parametric Distribution
[l] 95% KM (Chebyshev) UCL
[m] 95% KM (BCA) UCL
[m*] 95% KM (BCA) UCL suggested, but no UCL calculated.
[n] 99% KM Chebyshev UCL
[o] 97.5% KM Chebyshev UCL
[p] 95% Chebyshev (Mean, SD) UCL

NC - Not Calculated; insufficient data to calculate meaninful statistics and no UCL calculated.

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
J - Value is estimated.
mg/L - milligrams per liter

Table 3-9
Exposure Point Concentration - Shallow Groundwater Area 1
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale
	Volatile Organics (mg/L)								
79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/L	0.0027	NC	0.008	0.008	mg/L	Maximum	(3)
79-00-5	1,1,2-TRICHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
75-34-3	1,1-DICHLOROETHANE	mg/L	0.00044	NC	0.0005	0.0005	mg/L	Maximum	(3)
87-61-6	1,2,3-TRICHLOROBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
120-82-1	1,2,4-TRICHLOROBENZENE	mg/L	0.16	NC	0.3	0.3	mg/L	Maximum	(3)
95-63-6	1,2,4-TRIMETHYLBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
156-59-2	1,2-CIS-DICHLOROETHYLENE	mg/L	0.012	NC	0.075	0.075	mg/L	Maximum	(3)
95-50-1	1,2-DICHLOROBENZENE	mg/L	0.096	NC	0.59	0.59	mg/L	Maximum	(3)
107-06-2	1,2-DICHLOROETHANE	mg/L	0.012	NC	0.036	0.036	mg/L	Maximum	(3)
540-59-0	1,2-DICHLOROETHYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
78-87-5	1,2-DICHLOROPROPANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
156-60-5	1,2-TRANS-DICHLOROETHYLENE	mg/L	0.0019	NC	0.008	0.008	mg/L	Maximum	(3)
108-67-8	1,3,5-TRIMETHYLBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
541-73-1	1,3-DICHLOROBENZENE	mg/L	0.017	NC	0.065	0.065	mg/L	Maximum	(3)
106-46-7	1,4-DICHLOROBENZENE	mg/L	0.042	NC	0.18	0.18	mg/L	Maximum	(3)
109-69-3	1-CHLOROBUTANE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
95-49-8	2-CHLOROTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
589-34-4	3-METHYL HEXANE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
71-43-2	BENZENE	mg/L	0.071	NC	1.8	1.8	mg/L	Maximum	(3)
108-90-7	CHLOROBENZENE	mg/L	0.44	NC	8.1	8.1	mg/L	Maximum	(3)
67-66-3	CHLOROFORM	mg/L	0.00053	NC	0.002	0.002	mg/L	Maximum	(3)
108-87-2	CYCLOHEXANE, METHYL-	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-18-3	DIMETHYLSULFIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
100-41-4	ETHYLBENZENE	mg/L	0.030	NC	0.28	0.28	mg/L	Maximum	(3)
179601-23-1	M+P-XYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-09-2	METHYLENE CHLORIDE	mg/L	0.00091	NC	0.003	0.003	mg/L	Maximum	(3)
1634-04-4	METHYL-T-BUTYL ETHER	mg/L	0.00088	NC	0.0014	0.0014	mg/L	Maximum	(3)
91-20-3	NAPHTHALENE	mg/L	0.0046	NC	0.036	0.036	mg/L	Maximum	(3)
95-47-6	O-XYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
106-43-4	P-CHLOROTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
99-87-6	P-ISOPROPYLTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7446-09-5	SULFUR DIOXIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-65-0	t-Butyl Alcohol	mg/L	0.013	NC	0.013	0.013	mg/L	Maximum	(3)
127-18-4	TETRACHLOROETHYLENE	mg/L	0.0012	NC	0.003	0.003	mg/L	Maximum	(3)
108-88-3	TOLUENE	mg/L	0.20	NC	4	4	mg/L	Maximum	(3)
79-01-6	TRICHLOROETHYLENE	mg/L	0.0035	NC	0.007	0.007	mg/L	Maximum	(3)
75-01-4	VINYL CHLORIDE	mg/L	0.0026	NC	0.015	0.015	mg/L	Maximum	(3)
1330-20-7	XYLENES,TOTAL	mg/L	0.12	NC	1.2	1.2	mg/L	Maximum	(3)
	Semivolatile Organics (mg/L)								
123-91-1	1,4-DIOXANE	mg/L	0.049	NC	0.14	0.14	mg/L	Maximum	(3)
105-67-9	2,4-DIMETHYLPHENOL	mg/L	0.017	NC	0.1	0.1	mg/L	Maximum	(3)
91-57-6	2-METHYLNAPHTHALENE	mg/L	0.00087	NC	0.005	0.005	mg/L	Maximum	(3)
99-09-2	3-NITROANILINE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
62-53-3	ANILINE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
92-52-4	Biphenyl	mg/L	0.0043	NC	0.024	0.024	mg/L	Maximum	(3)
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
	Pesticides (mg/L)								
309-00-2	ALDRIN	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
1024-57-3	HEPTACHLOR EPOXIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
	Metals, Total (mg/L)								
7429-90-5	ALUMINUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-38-2	ARSENIC	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-36-0	ANTIMONY (5)	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-39-3	BARIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-41-7	BERYLLIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-43-9	CADMIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-47-3	CHROMIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-48-4	COBALT	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-50-8	COPPER	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-89-6	IRON	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-92-1	LEAD	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-96-5	MANGANESE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-97-6	MERCURY	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-02-0	NICKEL	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7782-49-2	SELENIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-22-4	SILVER	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-28-0	THALLIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-62-2	VANADIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-66-6	ZINC	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)

Table 3-9
Exposure Point Concentrations - Shallow Groundwater Area 1
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-4.
(2) Maximum detected concentrations were used as EPCs in lieu of 95% UCLs.
(3) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated

Prepared By: KMW 11/13/2013
Checked By: BJR 11/18/2013
Revised By: KMW 5/16/14
Checked By: MJM 5/20/14

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
NA - Analyte not analyzed in the associated dataset
NC - Not calculated
ND - Analyte not detected in the associated dataset
mg/L - milligrams per liter

Table 3-10
Exposure Point Concentration - Shallow Groundwater Area 2
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale
	Volatile Organics (mg/L)								
79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
79-00-5	1,1,2-TRICHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
75-34-3	1,1-DICHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
87-61-6	1,2,3-TRICHLOROBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
120-82-1	1,2,4-TRICHLOROBENZENE	mg/L	0.000070	NC	0.0002	0.0002	mg/L	Maximum	(3)
95-63-6	1,2,4-TRIMETHYLBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
156-59-2	1,2-CIS-DICHLOROETHYLENE	mg/L	0.00017	NC	0.001	0.001	mg/L	Maximum	(3)
95-50-1	1,2-DICHLOROBENZENE	mg/L	0.000085	NC	0.0004	0.0004	mg/L	Maximum	(3)
107-06-2	1,2-DICHLOROETHANE	mg/L	0.00011	NC	0.0004	0.0004	mg/L	Maximum	(3)
540-59-0	1,2-DICHLOROETHYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
78-87-5	1,2-DICHLOROPROPANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
156-60-5	1,2-TRANS-DICHLOROETHYLENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
108-67-8	1,3,5-TRIMETHYLBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
541-73-1	1,3-DICHLOROBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
106-46-7	1,4-DICHLOROBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
109-69-3	1-CHLOROBUTANE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
95-49-8	2-CHLOROTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
589-34-4	3-METHYL HEXANE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
71-43-2	BENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
108-90-7	CHLOROBENZENE	mg/L	0.00012	NC	0.0004	0.0004	mg/L	Maximum	(3)
67-66-3	CHLOROFORM	mg/L	0.000065	NC	0.0002	0.0002	mg/L	Maximum	(3)
108-87-2	CYCLOHEXANE, METHYL-	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-18-3	DIMETHYLSULFIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
100-41-4	ETHYLBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
179601-23-1	M+P-XYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-09-2	METHYLENE CHLORIDE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
1634-04-4	METHYL-T-BUTYL ETHER	mg/L	0.00024	NC	0.0009	0.0009	mg/L	Maximum	(3)
91-20-3	NAPHTHALENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
95-47-6	O-XYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
106-43-4	P-CHLOROTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
99-87-6	P-ISOPROPYLTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7446-09-5	SULFUR DIOXIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-65-0	t-Butyl Alcohol	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
127-18-4	TETRACHLOROETHYLENE	mg/L	0.000065	NC	0.0002	0.0002	mg/L	Maximum	(3)
108-88-3	TOLUENE	mg/L	0.000070	NC	0.0002	0.0002	mg/L	Maximum	(3)
79-01-6	TRICHLOROETHYLENE	mg/L	0.000095	NC	0.0003	0.0003	mg/L	Maximum	(3)
75-01-4	VINYL CHLORIDE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
1330-20-7	XYLENES,TOTAL	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
	Semivolatile Organics (mg/L)								
123-91-1	1,4-DIOXANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
105-67-9	2,4-DIMETHYLPHENOL	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
91-57-6	2-METHYLNAPHTHALENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
99-09-2	3-NITROANILINE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
62-53-3	ANILINE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
92-52-4	Biphenyl	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
	Pesticides (mg/L)								
309-00-2	ALDRIN	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
1024-57-3	HEPTACHLOR EPOXIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
	Metals, Total (mg/L)								
7429-90-5	ALUMINUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-38-2	ARSENIC	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-36-0	ANTIMONY (5)	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-39-3	BARIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-41-7	BERYLLIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-43-9	CADMIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-47-3	CHROMIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-48-4	COBALT	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-50-8	COPPER	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-89-6	IRON	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-92-1	LEAD	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-96-5	MANGANESE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-97-6	MERCURY	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-02-0	NICKEL	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7782-49-2	SELENIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-22-4	SILVER	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-28-0	THALLIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-62-2	VANADIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-66-6	ZINC	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)

Table 3-10
Exposure Point Concentrations - Shallow Groundwater Area 2
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-4.
(2) Maximum detected concentrations were used as EPCs in lieu of 95% UCLs.
(3) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated

Prepared By: KMW 11/13/2013
Checked By: BJR 11/18/2013
Revised By: KMW 5/16/14
Checked By: MJM 5/20/14

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
NA - Analyte not analyzed in the associated dataset
NC - Not calculated
ND - Analyte not detected in the associated dataset
mg/L - milligrams per liter

Table 3-11
Exposure Point Concentration - Shallow Groundwater Area 3
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale
	Volatile Organics (mg/L)								
79-34-5	1,1,2,2-TETRACHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
79-00-5	1,1,2-TRICHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
75-34-3	1,1-DICHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
87-61-6	1,2,3-TRICHLOROBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
120-82-1	1,2,4-TRICHLOROBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
95-63-6	1,2,4-TRIMETHYLBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
156-59-2	1,2-CIS-DICHLOROETHYLENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
95-50-1	1,2-DICHLOROBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
107-06-2	1,2-DICHLOROETHANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
540-59-0	1,2-DICHLOROETHYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
78-87-5	1,2-DICHLOROPROPANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
156-60-5	1,2-TRANS-DICHLOROETHYLENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
108-67-8	1,3,5-TRIMETHYLBENZENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
541-73-1	1,3-DICHLOROBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
106-46-7	1,4-DICHLOROBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
109-69-3	1-CHLOROBUTANE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
95-49-8	2-CHLOROTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
589-34-4	3-METHYL HEXANE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
71-43-2	BENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
108-90-7	CHLOROBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
67-66-3	CHLOROFORM	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
108-87-2	CYCLOHEXANE, METHYL-	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-18-3	DIMETHYLSULFIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
100-41-4	ETHYLBENZENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
179601-23-1	M+P-XYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-09-2	METHYLENE CHLORIDE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
1634-04-4	METHYL-T-BUTYL ETHER	mg/L	0.00013	NC	0.0003	0.0003	mg/L	Maximum	(3)
91-20-3	NAPHTHALENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
95-47-6	O-XYLENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
106-43-4	P-CHLOROTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
99-87-6	P-ISOPROPYLTOLUENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7446-09-5	SULFUR DIOXIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
75-65-0	t-Butyl Alcohol	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
127-18-4	TETRACHLOROETHYLENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
108-88-3	TOLUENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
79-01-6	TRICHLOROETHYLENE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
75-01-4	VINYL CHLORIDE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
1330-20-7	XYLENES,TOTAL	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
	Semivolatile Organics (mg/L)								
123-91-1	1,4-DIOXANE	mg/L	ND	NC	ND	ND	mg/L	Maximum	(3)
105-67-9	2,4-DIMETHYLPHENOL	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
91-57-6	2-METHYLNAPHTHALENE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
99-09-2	3-NITROANILINE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
62-53-3	ANILINE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
92-52-4	Biphenyl	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
	Pesticides (mg/L)								
309-00-2	ALDRIN	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
1024-57-3	HEPTACHLOR EPOXIDE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
	Metals, Total (mg/L)								
7429-90-5	ALUMINUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-38-2	ARSENIC	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-36-0	ANTIMONY (5)	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-39-3	BARIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-41-7	BERYLLIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-43-9	CADMIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-47-3	CHROMIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-48-4	COBALT	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-50-8	COPPER	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-89-6	IRON	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-92-1	LEAD	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-96-5	MANGANESE	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7439-97-6	MERCURY	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-02-0	NICKEL	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7782-49-2	SELENIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-22-4	SILVER	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-28-0	THALLIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-62-2	VANADIUM	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)
7440-66-6	ZINC	mg/L	NA	NC	NA	NA	mg/L	Maximum	(3)

Table 3-11
Exposure Point Concentrations - Shallow Groundwater Area 3
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

CAS Number	Chemical of Potential Concern (1)	Units	Arithmatic Mean	95% UCL (2)	Maximum Concentration (Qualifier)	Exposure Point Concentration			
						EPC	Units	Statistic	Rationale

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-4.
(2) Maximum detected concentrations were used as EPCs in lieu of 95% UCLs.
(3) The maximum detected concentration is used as the EPC because it is lower than the calculated 95% UCL, or no 95% UCL is calculated

Prepared By: KMW 11/13/2013
Checked By: BJR 11/18/2013
Revised by: KMW 5/16/14
Checked By: MJM 5/20/14

EPC - Exposure Point Concentration
UCL - Upper Confidence Limit on the arithmetic mean
NA - Analyte not analyzed in the associated dataset
NC - Not calculated
ND - Analyte not detected in the associated dataset
mg/L - milligrams per liter

Table 3-12
Values Used For Daily Intake Calculations
Reasonable Maximum Exposure - Current and Future Land Use Soil
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe: Current/Future Land Use
Medium: Soil
Exposure Medium: Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Points	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation / Model Name
Ingestion	Indoor Worker	Adult	Area 1	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
			Area 2	IR-S	Ingestion Rate of Soil	50	mg/day	USEPA, 2002b	CS-c x IR-S x FI x EF x ED x CF1 x 1/BW x 1/AT x RBA
			Area 3	RBA	Relative Bioavailability Factor	chemical specific [a]	unitless	USEPA, 2012	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	250	day/yr	USEPA, 2002b	
				ED	Exposure Duration	25	yr	USEPA, 2002b	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9125	day	USEPA, 1989 / equal to ED	
				CF1	Conversion Factor	1.0.E-06	kg/mg		
	Outdoor Worker	Adult	Area 1	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
			Area 2	IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 2002b	CS-c x IR-S x FI x EF x ED x CF1 x 1/BW x 1/AT x RBA
			Area 3	RBA	Relative Bioavailability Factor	chemical specific [a]	unitless	USEPA, 2012	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	225	day/yr	USEPA, 2002b	
				ED	Exposure Duration	25	yr	USEPA, 2002b	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9125	day	USEPA, 1989 / equal to ED	
				CF1	Conversion Factor	1.0.E-06	kg/mg		
	Construction/ Utility Worker	Adult	Area 1	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
			Area 2	IR-S	Ingestion Rate of Soil	330	mg/day	USEPA, 2002b	CS-c x IR-S x FI x EF x ED x CF1 x 1/BW x 1/AT x RBA
			Area 3	RBA	Relative Bioavailability Factor	chemical specific [a]	unitless	USEPA, 2012	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	250	day/yr	Assumption	
				ED	Exposure Duration	1	yr	Assumption	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	day	USEPA, 1989 / equal to ED	
				CF1	Conversion Factor	1.0.E-06	kg/mg		
	Trespasser	Adolescent	Area 1	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
		(ages 12 - 18)	Area 2	IR-S	Ingestion Rate of Soil	200	mg/day	USEPA, 2002b	CS-c x IR-S x FI x EF x ED x CF1 x 1/BW x 1/AT x RBA x ADAF
			Area 3	RBA	Relative Bioavailability Factor	chemical specific [a]	unitless	USEPA, 2012	
				ADAF	Age Dependant Adjustment Factor	2.3 [b]	unitless	USEPA, 2006	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	52 [c]	day/yr	Assumption	
				ED	Exposure Duration	6	yr	Assumption	
				BW	Body Weight	61.73 [f]	kg	USEPA, 2011	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	day	USEPA, 1989 / equal to ED	
				CF1	Conversion Factor	1.0.E-06	kg/mg		
	Trespasser	Adult	Area 1	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
		(18-30)	Area 2	IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 2002b	CS-c x IR-S x FI x EF x ED x CF1 x 1/BW x 1/AT x RBA x ADAF
			Area 3	RBA	Relative Bioavailability Factor	chemical specific [a]	unitless	USEPA, 2012	
				ADAF	Age Dependant Adjustment Factor	1	unitless	USEPA, 2006	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	52 [c]	day/yr	Assumption	
				ED	Exposure Duration	12	yr	Assumption	
				BW	Body Weight	77.9 [f]	kg	USEPA, 2011	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	4380	day	USEPA, 1989 / equal to ED	
				CF1	Conversion Factor	1.0.E-06	kg/mg		

Table 3-12
Values Used For Daily Intake Calculations
Reasonable Maximum Exposure - Current and Future Land Use Soil
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe: Current/Future Land Use
Medium: Soil
Exposure Medium: Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Points	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation / Model Name
Ingestion	Resident	Adult	Area 3	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
		(ages 19 and above)		IR-S	Ingestion Rate of Soil	100	mg/day	USEPA, 2002b	CS-c x IR-S x FI x EF x ED x CF1 x 1/BW x 1/AT x RBA x ADAF
				RBA	Relative Bioavailability Factor	chemical specific [a]	unitless	USEPA, 2012	
				ADAF	Age Dependant Adjustment Factor	1 [b]	unitless	USEPA, 2006	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	350	day/yr	Assumption	
				ED	Exposure Duration	24	yr	Assumption	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8760	day	USEPA, 1989 / equal to ED	
				CF1	Conversion Factor	1.0.E-06	kg/mg		
	Resident	Child	Area 3	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
		(ages 1 - 6)		IR-S	Ingestion Rate of Soil	200	mg/day	USEPA, 1994	CS-c x IR-S x FI x EF x ED x CF1 x 1/BW x 1/AT x RBA x ADAF
				RBA	Relative Bioavailability Factor	chemical specific [a]	unitless	USEPA, 2012	
				ADAF	Age Dependant Adjustment Factor	5.3 [b]	unitless	USEPA, 2006	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	350	day/yr	Assumption	
				ED	Exposure Duration	6	yr	Assumption	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	day	USEPA, 1989 / equal to ED	
				CF1	Conversion Factor	1.0.E-06	kg/mg		
Dermal	Indoor Worker	Adult	Area 1	CS	Chemical Concentration In Soil	95% UCL	mg/kg	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day) =
			Area 2	AF	Adherence Factor	0.07	mg/cm²-event	USEPA, 2002b	DAevent x SA x EF x ED x EV x 1/BW x 1/AT
			Area 3	AbF	Absorption Factor	chemical-specific	unitless	USEPA, 2004	
				SA	Skin Surface Area Available For Contact	3300	cm^2	USEPA, 2004	Where DAevent =
				EV	Event Day	1	event/day	USEPA, 2002b	CS x AF x ABSd x CF
				EF	Exposure Frequency	250	day/yr	USEPA, 2002b	
				ED	Exposure Duration	25	yr	USEPA, 2002b	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9125	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	1.0E-06	kg/mg		
	Outdoor Worker	Adult	Area 1	CS	Chemical Concentration In Soil	95% UCL	mg/kg	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day) =
			Area 2	AF	Adherence Factor	0.2	mg/cm²-event	USEPA, 2002b	DAevent x SA x EF x ED x EV x 1/BW x 1/AT
			Area 3	AbF	Absorption Factor	chemical-specific	unitless	USEPA, 2004	
				SA	Skin Surface Area Available For Contact	3300	cm^2	USEPA, 2004	Where DAevent =
				EV	Event Day	1	event/day	USEPA, 2002b	CS x AF x ABSd x CF
				EF	Exposure Frequency	225	day/yr	USEPA, 2002b	
				ED	Exposure Duration	25	yr	USEPA, 2002b	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9125	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	1.0E-06	kg/mg		

Table 3-12
Values Used For Daily Intake Calculations
Reasonable Maximum Exposure - Current and Future Land Use Soil
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe: Current/Future Land Use
Medium: Soil
Exposure Medium: Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Points	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation / Model Name
Dermal	Construction Worker	Adult	Area 1	CS	Chemical Concentration In Soil	95% UCL	mg/kg	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day) =
			Area 2	AF	Adherence Factor	0.3	mg/cm²-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT
			Area 3	AbF	Absorption Factor	chemical-specific	unitless	USEPA, 2004	
				SA	Skin Surface Area Available For Contact	3300	cm^2	USEPA, 2002b	Where DAevent =
				EV	Event Day	1	event/day	USEPA, 2004	CS x AF x ABSd x CF
				EF	Exposure Frequency	250	day/yr	USEPA, 2004	
				ED	Exposure Duration	1	yr	USEPA, 2004	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	1.0E-06	kg/mg		
	Trespasser	Adolescent	Area 1	CS	Chemical Concentration In Soil	95% UCL	mg/kg	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day) =
		(ages 12 - 18)	Area 2	AF	Adherence Factor	0.2	mg/cm²-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT x ADAF
			Area 3	AbF	Absorption Factor	chemical-specific	unitless	USEPA, 2004	
				ADAF	Age Dependant Adjustment Factor	2.3 [b]	unitless	USEPA, 2006	
				SA	Skin Surface Area Available For Contact	4606 [e]	cm^2	USEPA, 2011	Where DAevent =
				EV	Event Day	1	event/day	Assumption	CS x AF x ABSd x CF
				EF	Exposure Frequency	52[c]	day/yr	Assumption	
				ED	Exposure Duration	6	yr	Assumption	
				BW	Body Weight	61.73 [f]	kg	USEPA, 2011	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	1.0E-06	kg/mg		
	Trespasser	Adult	Area 1	CS	Chemical Concentration In Soil	95% UCL	mg/kg	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day) =
		(18-30)	Area 2	AF	Adherence Factor	0.07	mg/cm²-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT x ADAF
			Area 3	AbF	Absorption Factor	chemical-specific	unitless	USEPA, 2004	
				ADAF	Age Dependant Adjustment Factor	1	unitless	USEPA, 2006	
				SA	Skin Surface Area Available For Contact	5778 [e]	cm^2	USEPA, 2011	Where DAevent =
				EV	Event Day	1	event/day	Assumption	CS x AF x ABSd x CF
				EF	Exposure Frequency	52[c]	day/yr	Assumption	
				ED	Exposure Duration	12	yr	Assumption	
				BW	Body Weight	77.9 [f]	kg	USEPA, 2011	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	4380	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	1.0E-06	kg/mg		

Table 3-12
Values Used For Daily Intake Calculations
Reasonable Maximum Exposure - Current and Future Land Use Soil
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe: Current/Future Land Use
Medium: Soil
Exposure Medium: Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Points	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation / Model Name
Dermal	Resident	Adult	Area 3	CS	Chemical Concentration In Soil	95% UCL	mg/kg	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day) =
		(ages 19 and above)		AF	Adherence Factor	0.07	mg/cm²-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT x ADAF
				AbF	Absorption Factor	chemical-specific	unitless	USEPA, 2004	
				ADAF	Age Dependant Adjustment Factor	1 [b]	unitless	USEPA, 2006	
				SA	Skin Surface Area Available For Contact	5700	cm^2	USEPA, 2004	Where DAevent =
				EV	Event Day	1	event/day	Assumption	CS x AF x ABSd x CF
				EF	Exposure Frequency	350	day/yr	Assumption	
				ED	Exposure Duration	24	yr	Assumption	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8760	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	1.0E-06	kg/mg		
	Resident	Child	Area 3	CS	Chemical Concentration In Soil	95% UCL	mg/kg	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day) =
		(ages 1 - 6)		AF	Adherence Factor	0.2	mg/cm²-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT x ADAF
				AbF	Absorption Factor	chemical-specific	unitless	USEPA, 2004	
				ADAF	Age Dependant Adjustment Factor	5.3 [b]	unitless	USEPA, 2006	
				SA	Skin Surface Area Available For Contact	2800	cm^2	USEPA, 2004	Where DAevent =
				EV	Event Day	1	event/day	Assumption	CS x AF x ABSd x CF
				EF	Exposure Frequency	350	day/yr	Assumption	
				ED	Exposure Duration	6	yr	Assumption	
				BW	Body Weight	15	kg	USEPA, 1997	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	1.0E-06	kg/mg		
Dust Inhalation	Outdoor Worker	Adult	Area 1	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INHALATION (ug/m³) =
			Area 2	CAair	Concentration in Air	calculated	ug/m^3	Modeled from soil	CAair x ED x EF x ET x 1/AT x 1/24 hr
			Area 3	EFo	Exposure Frequency	225	day/yr	USEPA, 2002b	CAair =
				ED	Exposure Duration	25	yr	USEPA, 2002b	CS-c x 1/PEF x 1000 ug/mg
				ET	Exposure Time	8	hr	Assumption	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9125	day	USEPA, 1989 / equal to ED	
				PEF	Particulate Emission Factor	1.36E+09	m^3/kg	USEPA, 2002b	
	Construction Worker	Adult	Area 1	CS-c	Chemical Concentration in Soil	95% UCL	mg/kg	USEPA, 2002a	CHEMICAL INTAKE-INHALATION (ug/m³) =
			Area 2	CAair	Concentration in Air	calculated	ug/m^3	Modeled from soil	CAair x ED x EF x ET x 1/AT x 1/24 hr
			Area 3	EFo	Exposure Frequency	250	day/yr	USEPA, 2004	CAair =
				ED	Exposure Duration	1	yr	USEPA, 2004	CS-c x 1/PEF x 1000 ug/mg
				ET	Exposure Time	8	hr	Assumption	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	day	USEPA, 1989 / equal to ED	
				PEF	Particulate Emission Factor	1.36E+08 [g]	m^3/kg	USEPA, 2002b	

Table 3-12
Values Used For Daily Intake Calculations
Reasonable Maximum Exposure - Current and Future Land Use Soil
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe: Current/Future Land Use
Medium: Soil
Exposure Medium: Soil

Exposure Route	Receptor Population	Receptor Age	Exposure Points	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation / Model Name

USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.aa
USEPA, 2002a. "Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites." OSWER 9285.6-10. December
USEPA, 2002b. "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites." OSWER 9355.4-24. December.
USEPA, 2004. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.
USEPA, 2006. Implementation of the Cancer Guidelines and Accompanying Supplemental Guidance - Science Policy Council Cancer Guidelines Implementation Workgroup Communication II: Performing Risk Assessments that include Carcinogens Described in the Supplemental Guidance as having a Mutagenic Mode of Action. June 14.
USEPA, 2011. "Exposure Factors Handbook: 2011 Edition"; Office of Research and Development; EPA-600/R-090/052F; Washington, D.C.; September
USEPA, 2012. "Recommendation for Default Value for Relative Bioavailability of Arsenic in Soil." OSWER 9200.1-113. December

[a] - USEPA recommended default relative bioavailablity of arsenic in soil is 60% for oral exposure pathways.
[b] In accordance with the EPA Memorandum: "Implementation of the Cancer Guidelines and Accompanying Supplemental Guidance" - the risks for mutagenic carcinogens will be calculated by multiplying the EPA-published slope factor by generic age-dependant adjustment factors (ADAFs) as follows:
Residential Children (<6 yrs of age): ADAF of 5.3 calculated as an age-weighted ADAF for children 0<2 (ADAF=10) and children 2<6 (ADAF=3), as follows: [(2 yrs x 10) + (3 yrs x 4)] / 6 yrs = 5.3.
Tresspasser Older Children/ Adolescents (Age 12 - <18); ADAF of 2.33 calculated as an age-weighted ADAF for olderchilden 12 - <18 (ADAF= 2.3), as follows: [(4 yrs x 3) + (2 yrs x 1)] / 6 yrs = 2.3.
[c] - Professional judgment.
[d] - Average of mean body weights for males and females ages 12 to 18.
[e] - Weighted average of mean values for (head, hands, forearms, and lower legs) for males and females ages 12 to 18 or 18 to 30.
[f] - Weighted average of mean body weights for males and females ages 12 to 18 or 18 to 30.
[g] - Uses the commercial/industrial PEF and assumes a ten-fold agitation factor

NA - Not Applicable
kg - kilograms
cm^2 - square centimeters
m^3 - cubic meters
mg - milligrams
yr - year
ug - micrograms
hr - hour
TBC - to be calculated
UCL - upper confidence limit

Prepared by / Date: MJM 1/23/13
Checked by / Date: EYM 1/24/13
Revised by/ Date: KMW 5/16/2014
Checked by / Date MJM 5/20/14

Table 3-13
Reasonable Maximum Exposure - Current and Future Land Use Potable Groundwater Exposure Parameters
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe: Current and Future Land Use
Medium: Groundwater
Exposure Medium: Groundwater used as potable water

Exposure Route	Receptor Population	Receptor Age	Exposure Points	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation / Model Name
Ingestion	Resident	Adult	Groundwater within CPS Plume	CW-c	Chemical Concentration in Water	95% UCL	mg/l	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
			Site Wide Groundwater(future)	IR-W	Ingestion Rate of Water	2	l/day	USEPA, 2000	CW-c x IR-W x FI x EF x ED x 1/BW x 1/AT
				ADAF	Age Dependant Adjustment Factor	1 [d]	unitless	USEPA, 2006	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	350	day/yr	USEPA, 2000	
				ED	Exposure Duration	24	yr	USEPA, 2000 [a]	
				BW	Body Weight	70	kg	USEPA, 2000	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8760	day	USEPA, 1989 / equal to ED	
		Child	Groundwater within CPS Plume	CW-c	Chemical Concentration in Water	95% UCL	mg/l	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
		(ages 1-6)	Site Wide Groundwater(future)	IR-W	Ingestion Rate of Water	1	l/day	USEPA, 2000	CW-c x IR-W x FI x EF x ED x 1/BW x 1/AT
				ADAF	Age Dependent Adjustment Factor	5.3 [d]	unitless	USEPA, 2006	
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	350	day/yr	USEPA, 2000	
				ED	Exposure Duration	6	yr	USEPA, 2000 [a]	
				BW	Body Weight	15	kg	USEPA, 2000	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	day	USEPA, 1989 / equal to ED	
Dermal	Resident	Adult	Groundwater within CPS Plume	CW	Chemical Concentration in Water	95% UCL	mg/l	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day)=
			Site Wide Groundwater(future)	DAevent	Permeability Constant Per Event	chemical-specific	mg/cm^2-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT
				SA	Skin Surface Area Available for Contact	18000	cm^2	USEPA, 2004 [b]	DAevent = CW x CF x PCevent
				ADAF	Age Dependant Adjustment Factor	1 [d]	unitless	USEPA, 2006	
				tevent	Exposure Time	0.58	hr/event	USEPA, 2004	where:
				EF	Exposure Frequency	350	day/yr	USEPA, 2000	PCevent is tevent multiplied by chemical-specific parameters
				ED	Exposure Duration	24	yr	USEPA, 2000 [a]	B, t*, Tevent, and Kp, using the algorithm that is appropriate
				EV	Event Frequency	1	event/day	USEPA, 2004	for the relationship between tevent and t*, per USEPA (2004)
				BW	Body Weight	70	kg	USEPA, 2000	and as described in the risk assessment text.
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	Calculations are documented in the risk calculations appendix.
				AT-N	Averaging Time (Non-Cancer)	8760	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	0.001	l/cm^3		
		Child	Groundwater within CPS Plume	CW	Chemical Concentration in Water	95% UCL	mg/l	USEPA, 2002a	INTAKE-DERMAL (mg/kg-day)=
		(ages 1-6)	Site Wide Groundwater(future)	DAevent	Permeability Constant Per Event	chemical-specific	mg/cm^2-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT
				SA	Skin Surface Area Available for Contact	6600	cm^2	USEPA, 2004 [c]	DAevent = CW x CF x PCevent
				ADAF	Age Dependent Adjustment Factor	5.3 [d]	unitless	USEPA, 2006	
				tevent	Exposure Time	1.0	hr/event	USEPA, 2004	where:
				EF	Exposure Frequency	350	day/yr	USEPA, 2000	PCevent is tevent multiplied by chemical-specific parameters
				ED	Exposure Duration	6	yr	USEPA, 2000 [a]	B, t*, Tevent, and Kp, using the algorithm that is appropriate
				EV	Event Frequency	1	event/day	USEPA, 2004	for the relationship between tevent and t*, per USEPA (2004)
				BW	Body Weight	15	kg	USEPA, 2000	and as described in the risk assessment text.
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	Calculations are documented in the risk calculations appendix.
				AT-N	Averaging Time (Non-Cancer)	2190	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	0.001	l/cm^3		
Ingestion	Worker	Adult	Groundwater within CPS Plume	CW-c	Chemical Concentration in Water	95% UCL	mg/l	USEPA, 2002a	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
			Site Wide Groundwater(future)	IR-W	Ingestion Rate of Water	1	l/day	Assumption	CW-c x IR-W x FI x EF x ED x 1/BW x 1/AT
				FI	Fraction Ingested	1	unitless	Assumption	
				EF	Exposure Frequency	250	day/yr	USEPA, 2002b	
				ED	Exposure Duration	25	yr	USEPA, 2002b	
				BW	Body Weight	70	kg	USEPA, 2002b	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	9125	day	USEPA, 1989 / equal to ED	

Table 3-13
Reasonable Maximum Exposure - Current and Future Land Use Potable Groundwater Exposure Parameters
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

USEPA, 1989. “Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)”; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
USEPA, 2000. Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins. EPA Region 4, originally published November 1995, Website version last updated May 2000 (currently under revision).
USEPA, 2002a. "Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites." OSWER 9285.6-10. December
USEPA, 2002b. "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites." OSWER 9355.4-24. December.
USEPA, 2004. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.
USEPA, 2006. Implementation of the Cancer Guidelines and Accompanying Supplemental Guidance - Science Policy Council Cancer Guidelines Implementation Workgroup Communication II: Performing Risk Assessments that include Carcinogens Described in the Supplemental Guidance as having a Mutagenic Mode of Action. June 14.

[a] - Residential population evaluated as child (6 year duration) and adult (24 year duration) to equal a 30-year cumulative duration for evaluation of cancer risks.
[b] - Whole-body surface areas; values are recommended for evaluating residential exposures to water during showering/bathing.
[c] - USEPA (1997) Table 3-30; 90th percentile value for children ages 1 - 6.
[d] In accordance with the EPA Memorandum: "Implementation of the Cancer Guidelines and Accompanying Supplemental Guidance" - the risks for mutagenic carcinogens will be calculated by multiplying the EPA-published slope factor by generic age-dependant adjustment factors (ADAFs) as follows:
Residential Children (<6 yrs of age): ADAF of 5.3 calculated as an age-weighted ADAF for children 0<2 (ADAF=10) and children 2<6 (ADAF=3), as follows: [(2 yrs x 10) + (3 yrs x 4)] / 6 yrs = 5.3.
Tresspasser Older Children/ Adolescents (Age 12 - <18); ADAF of 2.33 calculated as an age-weighted ADAF for olderchilden 12 - <18 (ADAF= 2.3), as follows: [(4 yrs x 3) + (2 yrs x 1)] / 6 yrs = 2.3.

mg - milligrams
cm^2 - square centimeters
kg - kilograms
cm^3 - cubic centimeters
yr - year
hr - hour
l - liter

Prepared by / Date: MJM 03/19/2013
Revised by / Date: KMW 05/16/2014

Table 3-13
Reasonable Maximum Exposure - Current and Future Land Use Potable Groundwater
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Potable Water

Adelman shower model (Schaum et al., 1994)

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Resident	Adult	Groundwater as Potable Water - Volatilization during showering	Cwater	Chemical Concentration in Ground Water	Chem.-specific	mg/L	Schaum et al., 1994	Camax (mg/m3) = Cw x f x Fw x t1 x 1/Va Exposure Point Concentration = (((Camax/2) x t1) + (Camax x t2))/(t1+t2)
				f	fraction volatilized	Chem.-specific			
				Fw	water flow rate	1000	L/hr		
				t1	Time Spent Showering	0.25	hr		
				t2	Time Spent in Bathroom After Showering	0.33	hr		
				Va	Bathroom volume	6	m3		
				EPC	Chemical Concentration in Bathroom Air	Chem.-specific	mg/m3	calculated from Schaum et al., 1994	Exposure Concentration (mg/m3) = EPC x ET x EF x ED x 1/AT x 1/CF
				ET	Exposure Time	0.58	hr/day	USEPA, 1997, Table 15-18	
				EF	Exposure Frequency	350	days/year	USEPA, 1989	
				ED	Exposure Duration	24	years	USEPA, 1989	
				CF	Conversion Factor	24	hr/day		
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	8760	day	USEPA, 1989 / equal to ED	
Inhalation	Resident	Child (ages 1-6)	Groundwater as Potable Water - Volatilization during showering	Cwater	Chemical Concentration in Ground Water	Chem.-specific	mg/L	Schaum et al., 1994	Camax (mg/m3) = Cw x f x Fw x t1 x 1/Va Exposure Point Concentration = (((Camax/2) x t1) + (Camax x t2))/(t1+t2)
				f	fraction volatilized	Chem.-specific			
				Fw	water flow rate	1000	L/hr		
				t1	Time Spent Showering	0.45	hr		
				t2	Time Spent in Bathroom After Showering	0.55	hr		
				Va	Bathroom volume	6	m3		
				EPC	Chemical Concentration in Bathroom Air	Chem.-specific	mg/m3	calculated from Schaum et al., 1994	Exposure Concentration (mg/m3) = EPC x ET x EF x ED x 1/AT x 1/CF
				ET	Exposure Time	1	hr/day	USEPA, 1997, Table 15-18	
				EF	Exposure Frequency	350	days/year	USEPA, 1989	
				ED	Exposure Duration	6	years	USEPA, 1989	
				CF	Conversion Factor	24	hr/day		
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	2190	day	USEPA, 1989 / equal to ED	

USEPA, 1989. “Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)”; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 1997. "Exposure Factors Handbook, Volume 1"; Office of Research and Development; EPA-600/P-95/002Fa; Washington, D.C.; August.
Schaum et. al., 1994. "Estimating Dermal and Inhalation Exposure to Volatile Chemicals in Domestic Water. In: Water Contamination and Health. Marcel Dekker, Inc., New York

mg - milligrams
l - liter
m^3 - cubic meters
hr - hour

Prepared by / Date:KMW 11/21/2013
Revised by / Date: KMW 05/16/2014
Revised by / Date: LCG 05/20/2014
Checked by / Date MJM 5/20/14

Table 3-14
Reasonable Maximum Exposure - Current and Future Land Use Shallow Groundwater Exposure Parameters
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Scenario Timeframe: Current and Future Land Use
Medium: Groundwater
Exposure Medium: Groundwater in a Trench

Exposure Route	Receptor Population	Receptor Age	Exposure Points	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation / Model Name
Ingestion	Construction Worker	Adult	Shallow Groundwater(future)	CW-c	Chemical Concentration in Water	Maximum	mg/l	USEPA, 2000	CHEMICAL INTAKE-INGESTION (mg/kg-day)=
			Area 1	IR-W	Ingestion Rate of Water	0.005	l/day	Assumption	CW-c x IR-W x FI x EF x ED x 1/BW x 1/AT
			Area 2	FI	Fraction Ingested	1	unitless	Assumption	
			Area 3	EF	Exposure Frequency	30	day/yr	USEPA, 2000	
				ED	Exposure Duration	1	yr	USEPA, 2000 [a]	
				BW	Body Weight	70	kg	USEPA, 2000	
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	day	USEPA, 1989 / equal to ED	
Dermal	Construction Worker	Adult	Shallow Groundwater(future)	CW	Chemical Concentration in Water	Maximum	mg/l	USEPA, 2000	INTAKE-DERMAL (mg/kg-day)=
			Area 1	DAevent	Permeability Constant Per Event	chemical-specific	mg/cm^2-event	USEPA, 2004	DAevent x SA x EF x ED x EV x 1/BW x 1/AT
			Area 2	SA	Skin Surface Area Available for Contact	3300 [a]	cm^2	USEPA, 2002b	DAevent = CW x CF x PCevent
			Area 3	tevent	Exposure Time	8	hr/event	USEPA Region II, 2013	where:
				EF	Exposure Frequency	30	day/yr	USEPA Region II, 2013	PCevent is tevent multiplied by chemical-specific parameters
				ED	Exposure Duration	1	yr	USEPA, 2000	B, t*, Tevent, and Kp, using the algorithm that is appropriate
				EV	Event Frequency	1	event/day	USEPA, 2004	for the relationship between tevent and t*, per USEPA (2004)
				BW	Body Weight	70	kg	USEPA, 2000	and as described in the risk assessment text.
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	Calculations are documented in the risk calculations appendix.
				AT-N	Averaging Time (Non-Cancer)	365	day	USEPA, 1989 / equal to ED	
				CF	Conversion Factor	0.001	l/cm^3		
Inhalation	Construction Worker	Adult	Shallow Groundwater(future)	CW-c	Chemical Concentration in Water	Maximum	mg/l	USEPA, 2000	Exposure Concentration (ug/m3) =
			Area 1	FI	Fraction Ingested	1	unitless	Assumption	[(CW-c x VF/ CF^1) x EF x EV x ET x ED x CF^2 x 1/AT]
			Area 2	ET	Exposure Time	8	hr/event	USEPA Region II, 2013	
			Area 3	EF	Exposure Frequency	30	day/yr	USEPA, 2000	
				ED	Exposure Duration	1	yr	USEPA, 2000 [a]	
				EV	Event Frequency	1	event/day	USEPA, 2004	
				VF	Volatilization Factor	chemical-specific	L/m3		
				CF^1	Conversion Factor	0.001	m3/L		
				CF^2	Conversion Factor	24	hr/day		
				AT-C	Averaging Time (Cancer)	25550	day	USEPA, 1989	
				AT-N	Averaging Time (Non-Cancer)	365	day	USEPA, 1989 / equal to ED	

USEPA, 1989. "Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Part A)"; Office of Emergency and Remedial Response; EPA-540/1-89/002 (interim final); Washington, D.C., December.
USEPA, 2000. Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health Risk Assessment Bulletins. EPA Region 4, originally published November 1995, Website version last updated May 2000 (currently under revision).
USEPA, 2002b. "Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites." OSWER 9355.4-24. December.
USEPA, 2004. "Risk Assessment Guidance for Superfund. Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.
USEPA Region II 2013 - Personal Communication via conference call, October 31, 2013.

[a] - Average surface area for hands, forearms, and face.

mg - milligrams
cm^2 - square centimeters
kg - kilograms
cm^3 - cubic centimeters
yr - year
hr - hour
l - liter

Prepared by / Date:KMW 11/21/2013
Revised by / Date: KMW 05/16/2014
Revised by / Date : LCG 5/21/2014
Checked By: MJM 8/20/14

Table 3-15
Volatilization Factor for Groundwater to Ambient Air
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Ambient air Velocity	225	cm/sec
Ambient Air mixing zone height	200	cm
Depth to groundwater	0.1	cm
Width of the source area perpendicula	7620	cm
length of source area perpendicular to	7620	cm
source area zone	58064400	cm2
Dispersion Factor	5.905511811	cm/sec
Thickness of the capillary fringe	0.1	cm
Thickness of the vadose zone	0	cm
Air content in capillary fringe soils	0.122	cm3/cm3
Water content in capillary fringe soils	0.253	cm3/cm3
Air content in vadose zone soils	0.321	cm3/cm3
Water content in vadose zone soils	0.054	cm3/cm3
soil porosity	0.375	cm3/cm3

Chemical of Potential Concern	Henry's Law Constant H (atm-m^3/mol-K)	Effective Henry's Law Constant H_{eff} unitless	Diffusion Coefficient in Air D_a cm^2/sec	Diffusion Coefficient in Water D_l cm^2/sec	Effective Diffusion Coefficient through the Capillary Fringe $D_{eff,cap}$ cm^2/sec	Effective Diffusion Coefficient through Vadose Zone Soil $D_{eff,vad}$ cm^2/sec	Effective Diffusion Coefficient through Groundwater and Soil $D_{eff,ws}$ cm^2/sec	Volatilization Factor for Groundwater to Ambient Air $VF_{gw,amb}$ L/m^3
1,1,2,2-TETRACHLOROETHANE	3.67E-04	1.50E-02	4.89E-02	9.29E-06	3.61E-04	7.91E-03	3.61E-04	9.16E-03
1,1,2-TRICHLOROETHANE	8.24E-04	3.37E-02	6.69E-02	1.00E-05	4.53E-04	1.08E-02	4.53E-04	2.58E-02
1,1-DICHLOROETHANE	5.62E-03	2.30E-01	8.36E-02	1.06E-05	5.43E-04	1.35E-02	5.43E-04	2.11E-01
1,2,3-TRICHLOROBENZENE	1.25E-03	5.11E-02	3.95E-02	8.38E-06	2.67E-04	6.39E-03	2.67E-04	2.31E-02
1,2,4-TRICHLOROBENZENE	1.42E-03	5.80E-02	3.96E-02	8.40E-06	2.66E-04	6.40E-03	2.66E-04	2.61E-02
1,2,4-TRIMETHYLBENZENE	6.16E-03	2.52E-01	6.07E-02	7.92E-06	3.94E-04	9.81E-03	3.94E-04	1.68E-01
1,2-CIS-DICHLOROETHYLENE	4.08E-03	1.67E-01	8.84E-02	1.13E-05	5.75E-04	1.43E-02	5.75E-04	1.62E-01
1,2-DICHLOROBENZENE	1.92E-03	7.85E-02	5.62E-02	8.92E-06	3.71E-04	9.08E-03	3.71E-04	4.92E-02
1,2-DICHLOROETHANE	1.18E-03	4.82E-02	8.57E-02	1.10E-05	5.70E-04	1.39E-02	5.70E-04	4.65E-02
1,2-DICHLOROETHYLENE	4.08E-03	1.67E-01	8.79E-02	1.12E-05	5.72E-04	1.42E-02	5.72E-04	1.61E-01
1,2-DICHLOROPROPANE	2.82E-03	1.15E-01	7.33E-02	9.73E-06	4.79E-04	1.19E-02	4.79E-04	9.34E-02
1,2-TRANS-DICHLOROETHYLENE	4.08E-03	1.67E-01	8.76E-02	1.12E-05	5.70E-04	1.42E-02	5.70E-04	1.61E-01
1,3,5-TRIMETHYLBENZENE	8.77E-03	3.58E-01	6.02E-02	7.84E-06	3.90E-04	9.74E-03	3.90E-04	2.37E-01
1,3-DICHLOROBENZENE	NA							
1,4-DICHLOROBENZENE	2.41E-03	9.85E-02	5.50E-02	8.68E-06	3.61E-04	8.90E-03	3.61E-04	6.03E-02
1-CHLOROBUTANE	1.67E-02	6.83E-01	7.84E-02	9.33E-06	5.07E-04	1.27E-02	5.07E-04	5.85E-01
2-CHLOROTOLUENE	3.57E-03	1.46E-01	6.29E-02	8.72E-06	4.10E-04	1.02E-02	4.10E-04	1.01E-01
3-METHYL HEXANE	NA							
BENZENE	5.55E-03	2.27E-01	8.95E-02	1.03E-05	5.81E-04	1.45E-02	5.81E-04	2.23E-01
CHLOROBENZENE	3.11E-03	1.27E-01	7.21E-02	9.48E-06	4.71E-04	1.17E-02	4.71E-04	1.01E-01
CHLOROFORM	3.67E-03	1.50E-01	7.69E-02	1.09E-05	5.01E-04	1.24E-02	5.01E-04	1.27E-01
CYCLOHEXANE, METHYL-	NA							
DIMETHYLSULFIDE	NA							
ETHYLBENZENE	7.88E-03	3.22E-01	6.85E-02	8.46E-06	4.43E-04	1.11E-02	4.43E-04	2.42E-01
M+P-XYLENE	5.18E-03							
METHYLENE CHLORIDE	3.25E-03	1.33E-01	9.99E-02	1.25E-05	6.51E-04	1.62E-02	6.51E-04	1.46E-01
METHYL-T-BUTYL ETHER	5.87E-04	2.40E-02	7.53E-02	8.59E-06	5.12E-04	1.22E-02	5.12E-04	2.08E-02
NAPHTHALENE	4.40E-04	1.80E-02	6.05E-02	8.38E-06	4.24E-04	9.78E-03	4.24E-04	1.29E-02
O-XYLENE	5.18E-03	2.12E-01	6.89E-02	8.53E-06	4.47E-04	1.11E-02	4.47E-04	1.60E-01
P-CHLOROTOLUENE	4.38E-03	1.79E-01	6.26E-02	8.66E-06	4.07E-04	1.01E-02	4.07E-04	1.23E-01
P-ISOPROPYLTOLUENE	NA							
SULFUR DIOXIDE	NA							
t-Butyl Alcohol	NA							
TETRACHLOROETHYLENE	1.77E-02	7.23E-01	5.05E-02	9.46E-06	3.26E-04	8.16E-03	3.26E-04	4.00E-01
TOLUENE	6.64E-03	2.71E-01	7.78E-02	9.20E-06	5.04E-04	1.26E-02	5.04E-04	2.32E-01
TRICHLOROETHYLENE	9.85E-03	4.03E-01	6.87E-02	1.02E-05	4.45E-04	1.11E-02	4.45E-04	3.03E-01
VINYL CHLORIDE	2.78E-02	1.14E+00	1.07E-01	1.20E-05	6.92E-04	1.73E-02	6.92E-04	1.33E+00
XYLENES,TOTAL	5.18E-03	2.12E-01	8.47E-02	9.90E-06	5.50E-04	1.37E-02	5.50E-04	1.97E-01

Notes:
Values obtained from Vapor Intrusion Screening Level (VISL) Calculator Version 3.2, November 2013 RSLs.
Equation:
VF GW amb air = 1/[(1 + (DFamb*Lgw/Deff,ws))*(1/Heff)]

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Table 3-16
Ambient Air Concentration - Construction Worker Area 1
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	GW Concentration (mg/L)	Area 1 Air Concentration CW (mg/m3)	Area 1 Air Concentration CW (ug/m3)
1,1,2,2-TETRACHLOROETHANE	0.008	0.073	73
1,1,2-TRICHLOROETHANE	ND	ND	ND
1,1-DICHLOROETHANE	0.0005	0.11	105
1,2,3-TRICHLOROBENZENE	NA	NA	NA
1,2,4-TRICHLOROBENZENE	0.3	7.8	7839
1,2,4-TRIMETHYLBENZENE	NA	NA	NA
1,2-CIS-DICHLOROETHYLENE	0.075	12	12169
1,2-DICHLOROBENZENE	0.59	29	29037
1,2-DICHLOROETHANE	0.036	1.7	1673
1,2-DICHLOROETHYLENE	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND
1,2-TRANS-DICHLOROETHYLENE	0.008	1.3	1286
1,3,5-TRIMETHYLBENZENE	NA	NA	NA
1,3-DICHLOROBENZENE	0.065	NA	NA
1,4-DICHLOROBENZENE	0.18	10.85	10845
1-CHLOROBUTANE	NA	NA	NA
2-CHLOROTOLUENE	NA	NA	NA
3-METHYL HEXANE	NA	NA	NA
BENZENE	1.8	401	401187
CHLOROBENZENE	8.1	820	819954
CHLOROFORM	0.002	0.25	255
CYCLOHEXANE, METHYL-	NA	NA	NA
DIMETHYLSULFIDE	NA	NA	NA
ETHYLBENZENE	0.28	68	67674
M+P-XYLENE	NA	NA	NA
METHYLENE CHLORIDE	0.003	0.44	439
METHYL-T-BUTYL ETHER	0.0014	0.029	29
NAPHTHALENE	0.036	0.46	465
O-XYLENE	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA
P-ISOPROPYLTOLUENE	NA	NA	NA
SULFUR DIOXIDE	NA	NA	NA
t-Butyl Alcohol	0.013	NA	NA
TETRACHLOROETHYLENE	0.003	1.20	1199
TOLUENE	4	926	926225
TRICHLOROETHYLENE	0.007	2.1	2121
VINYL CHLORIDE	0.015	20	19938
XYLENES,TOTAL	1.2	236	236380

Notes:
Ambient air conc (in mg/m3) = (GW conc in mg/L) x (VF gw amb) / (.001 m3/L)
Volatilization Factors can be found in Table 3-15.

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Table 3-17
Ambient Air Concentration - Construction Worker Area 2
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	GW Concentration (mg/L)	Area 2 Air Concentration CW (mg/m3)	Area 2 Air Concentration CW (ug/m3)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	NA	NA
1,2,4-TRICHLOROBENZENE	0.0002	0.0	5
1,2,4-TRIMETHYLBENZENE	NA	NA	NA
1,2-CIS-DICHLOROETHYLENE	0.001	0	162
1,2-DICHLOROBENZENE	0.0004	0	20
1,2-DICHLOROETHANE	0.0004	0.0	19
1,2-DICHLOROETHYLENE	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND
1,2-TRANS-DICHLOROETHYLENE	ND	ND	ND
1,3,5-TRIMETHYLBENZENE	NA	NA	NA
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
1-CHLOROBUTANE	NA	NA	NA
2-CHLOROTOLUENE	NA	NA	NA
3-METHYL HEXANE	NA	NA	NA
BENZENE	ND	ND	ND
CHLOROBENZENE	0.0004	0	40
CHLOROFORM	0.0002	0.03	25
CYCLOHEXANE, METHYL-	NA	NA	NA
DIMETHYLSULFIDE	NA	NA	NA
ETHYLBENZENE	ND	ND	ND
M+P-XYLENE	NA	ND	ND
METHYLENE CHLORIDE	ND	ND	ND
METHYL-T-BUTYL ETHER	0.0009	0.019	19
NAPHTHALENE	ND	ND	ND
O-XYLENE	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA
P-ISOPROPYLTOLUENE	NA	NA	NA
SULFUR DIOXIDE	NA	NA	NA
t-Butyl Alcohol	ND	ND	ND
TETRACHLOROETHYLENE	0.0002	0.08	80
TOLUENE	0.0002	0	46
TRICHLOROETHYLENE	0.0003	0.1	91
VINYL CHLORIDE	ND	ND	ND
XYLENES,TOTAL	ND	ND	ND

Notes:
Ambient air conc (in mg/m3) = (GW conc in mg/L) x (VF gw amb) / (.001 m3/L)
Volatilization Factors can be found in Table 3-15.

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Table 3-18
Ambient Air Concentration - Construction Worker Area 3
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	GW Concentration (mg/L)	Area 3 Concentration CW (mg/m3)	Area 3 Concentration CW (ug/m3)
1,1,2,2-TETRACHLOROETHANE	ND	ND	ND
1,1,2-TRICHLOROETHANE	ND	ND	ND
1,1-DICHLOROETHANE	ND	ND	ND
1,2,3-TRICHLOROBENZENE	NA	NA	NA
1,2,4-TRICHLOROBENZENE	ND	ND	ND
1,2,4-TRIMETHYLBENZENE	NA	NA	NA
1,2-CIS-DICHLOROETHYLENE	ND	ND	ND
1,2-DICHLOROBENZENE	ND	ND	ND
1,2-DICHLOROETHANE	ND	ND	ND
1,2-DICHLOROETHYLENE	NA	NA	NA
1,2-DICHLOROPROPANE	ND	ND	ND
1,2-TRANS-DICHLOROETHYLENE	ND	ND	ND
1,3,5-TRIMETHYLBENZENE	NA	NA	NA
1,3-DICHLOROBENZENE	ND	ND	ND
1,4-DICHLOROBENZENE	ND	ND	ND
1-CHLOROBUTANE	NA	NA	NA
2-CHLOROTOLUENE	NA	NA	NA
3-METHYL HEXANE	NA	NA	NA
BENZENE	ND	ND	ND
CHLOROBENZENE	ND	ND	ND
CHLOROFORM	ND	ND	ND
CYCLOHEXANE, METHYL-	NA	NA	NA
DIMETHYLSULFIDE	NA	NA	NA
ETHYLBENZENE	ND	ND	ND
M+P-XYLENE	NA	NA	NA
METHYLENE CHLORIDE	ND	ND	ND
METHYL-T-BUTYL ETHER	0.0003	0.006	6
NAPHTHALENE	ND	ND	ND
O-XYLENE	NA	NA	NA
P-CHLOROTOLUENE	NA	NA	NA
P-ISOPROPYLTOLUENE	NA	NA	NA
SULFUR DIOXIDE	NA	NA	NA
t-Butyl Alcohol	ND	ND	ND
TETRACHLOROETHYLENE	ND	ND	ND
TOLUENE	ND	ND	ND
TRICHLOROETHYLENE	ND	ND	ND
VINYL CHLORIDE	ND	ND	ND
XYLENES,TOTAL	ND	ND	ND

Notes:
Ambient air conc (in mg/m3) = (GW conc in mg/L) x (VF gw amb) / (.001 m3/L)
Volatilization Factors can be found in Table 3-15.

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Table 3-19
Shower Air EPCs
Potable Groundwater
CPS / Madison Superfund Site
Old Bridge, NJ

							Adult		Child	
CAS Number	**Chemical of Potential Concern [1,2]**	**Groundwater EPC (mg/L) [3]**	**Henry's Law Constant H (atm-m^3/ mol-K) [4]**	**Diffusivity in Air D_a m2/sec [4]**	**Diffusivity in Water D_l m2/sec [4]**	**Fraction Volatilized f unitless [5]**	**Ca max (mg/m3) [6]**	**Air EPC (mg/m3) [6]**	**Ca max (mg/m3) [6]**	**Air EPC (mg/m3) [6]**
	Volatile Organics (mg/L)									
10043-92-2	RADON [6]	NA	0.0921	2.00E-05	1.40E-09	0.63	NA	NA		
79-34-5	1,1,2,2-TETRACHLOROETHANE	0.0026	0.0004	4.89E-06	9.29E-10	0.44	0.05	0.027	0.09	0.067
79-00-5	1,1,2-TRICHLOROETHANE	0.0006	0.0008	6.69E-06	1.00E-09	0.49	0.01	0.007	0.02	0.017
75-34-3	1,1-DICHLOROETHANE	0.0022	0.0056	8.36E-06	1.06E-09	0.52	0.05	0.026	0.09	0.066
87-61-6	1,2,3-TRICHLOROBENZENE	0.3140	0.0013	3.95E-06	8.38E-10	0.44	5.70	3.168	10.26	7.948
120-82-1	1,2,4-TRICHLOROBENZENE	0.5090	0.0014	3.96E-06	8.40E-10	0.44	9.28	5.160	16.70	12.946
95-63-6	1,2,4-TRIMETHYLBENZENE	0.0303	0.0062	6.07E-06	7.92E-10	0.43	0.54	0.301	0.98	0.756
156-59-2	1,2-CIS-DICHLOROETHYLENE	0.2210	0.0041	8.84E-06	1.13E-09	0.54	5.00	2.780	9.00	6.974
95-50-1	1,2-DICHLOROBENZENE	0.5020	0.0019	5.62E-06	8.92E-10	0.46	9.62	5.346	17.31	13.413
107-06-2	1,2-DICHLOROETHANE	0.0231	0.0012	8.57E-06	1.10E-09	0.53	0.51	0.281	0.91	0.705
540-59-0	1,2-DICHLOROETHYLENE	0.0713	0.0041	8.79E-06	1.12E-09	0.54	1.60	0.892	2.89	2.237
78-87-5	1,2-DICHLOROPROPANE	0.0205	0.0028	7.33E-06	9.73E-10	0.49	0.42	0.232	0.75	0.583
156-60-5	1,2-TRANS-DICHLOROETHYLENE	0.0265	0.0041	8.76E-06	1.12E-09	0.54	0.60	0.331	1.07	0.831
108-67-8	1,3,5-TRIMETHYLBENZENE	0.0095	0.0088	6.02E-06	7.84E-10	0.43	0.17	0.094	0.30	0.235
106-46-7	1,4-DICHLOROBENZENE	0.2640	0.0024	5.50E-06	8.68E-10	0.45	4.98	2.769	8.96	6.947
109-69-3	1-CHLOROBUTANE	0.2920	0.0167	7.84E-06	9.33E-10	0.48	5.84	3.247	10.51	8.146
95-49-8	2-CHLOROTOLUENE	0.1060	0.0036	6.29E-06	8.72E-10	0.46	2.01	1.120	3.63	2.811
71-43-2	BENZENE	0.3640	0.0056	8.95E-06	1.03E-09	0.51	7.76	4.313	13.96	10.819
108-90-7	CHLOROBENZENE	1.5030	0.0031	7.21E-06	9.48E-10	0.48	30.17	16.778	54.31	42.093
67-66-3	CHLOROFORM	0.0006	0.0037	7.69E-06	1.09E-09	0.53	0.01	0.007	0.02	0.018
100-41-4	ETHYLBENZENE	0.4190	0.0079	6.85E-06	8.46E-10	0.45	7.84	4.357	14.10	10.931
75-09-2	METHYLENE CHLORIDE	0.3410	0.0033	9.99E-06	1.25E-09	0.58	8.24	4.581	14.83	11.493
1634-04-4	METHYL-T-BUTYL ETHER	0.0137	0.0006	7.53E-06	8.59E-10	0.44	0.25	0.139	0.45	0.349
91-20-3	NAPHTHALENE	0.0102	0.0004	6.05E-06	8.38E-10	0.42	0.18	0.100	0.32	0.250
95-47-6	O-XYLENE	0.3200	0.0052	6.89E-06	8.53E-10	0.45	6.01	3.342	10.82	8.385
106-43-4	P-CHLOROTOLUENE	0.1770	0.0044	6.26E-06	8.66E-10	0.45	3.4	1.86	6.04	4.677
127-18-4	TETRACHLOROETHYLENE	0.0006	0.0177	5.05E-06	9.46E-10	0.48	0.011	0.006	0.02	0.016
108-88-3	TOLUENE	3.6560	0.0066	7.78E-06	9.20E-10	0.47	72	40	130.17	100.883
79-01-6	TRICHLOROETHYLENE	0.0064	0.0099	6.87E-06	1.02E-09	0.51	0.14	0.076	0.24	0.190
75-01-4	VINYL CHLORIDE	0.0466	0.0278	1.07E-05	1.20E-09	0.57	1.1	0.61	1.99	1.539
1330-20-7	XYLENES,TOTAL	0.3540	0.0052	8.47E-06	9.90E-10	0.50	7.3	4.1	13.22	10.245
91-57-6	2-METHYLNAPHTHALENE	0.0009	0.0005	5.24E-06	7.78E-10	0.40	0.015	0.008	0.03	0.021
92-52-4	Biphenyl	0.0054	0.0003	4.71E-06	7.56E-10	0.38	0.085	0.048	0.15	0.119
7439-97-6	MERCURY	0.0009	0.0114	3.07E-06	6.30E-10	0.37	0.013	0.007	0.02	0.019

Table 3-19
Shower Air EPCs
Potable Groundwater
CPS / Madison Superfund Site
Old Bridge, NJ

							Adult		Child	
CAS Number	**Chemical of Potential Concern [1,2]**	**Groundwater EPC (mg/L) [3]**	**Henry's Law Constant H (atm-m^3/ mol-K) [4]**	**Diffusivity in Air D_a m2/sec [4]**	**Diffusivity in Water D_l m2/sec [4]**	**Fraction Volatilized f unitless [5]**	**Ca max (mg/m3) [6]**	**Air EPC (mg/m3) [6]**	**Ca max (mg/m3) [6]**	**Air EPC (mg/m3) [6]**

Prepared by: LCG 4/9/2015
Checked by: MJM 4/10/2015

Notes:
(1) Chemicals of potential concern (COPCs) are identified in Table 2-4.
(2) Groundwater COPCs identified as volatiles (i.e., listed in the Vapor Intrusion Screening Level (VISL) calculator) are presented herein.
(3) Groundwater EPCs are presented in Table 3-8.
(4) For all parameters except radon, H, D_a, and D_l were obtained from the USEPA VISL Caclculator Version 3.2, November 2013 RSLs (Regional Screening Level)
(5) Fraction volatilized calculated using the equation below as presented in McKone, 1987.

$$f_{species} = \frac{f_{radon} \times [(2.5/D_l{}^{\wedge 2/3}) + (RT/D_a{}^{\wedge 2/3} \times H)]_{radon}}{[(2.5/D_l{}^{\wedge 2/3)} + (RT/D_a{}^{\wedge 2/3} \times H)]_{species}}$$

Where:

f_{radon} = 0.63 during showers in Pritchard and Gesell (1981) as cited by Andelman (1990)
D_l = Diffusivity in Water
D_a = Diffusivity in Air
R = Universal Gas Constant (8.21E-5 atm-m^3/mol-K)
T = Temperature (300.15 K)
H = Henry's Law Constant
H, D_a, and D_l for radon were obtained from McKone, 1987.

(6) Air EPCs calcualted using the equations presented below:

$$\text{Ca max (mg/m}^3) = Cw \times f \times Fw \times t1 \times 1/Va$$

$$EPC = (((Camax/2) \times t1) + (Camax \times t2))/(t1+t2)$$

Where:

Parameter	Definition	Values Adult		Values Child	
T	Temperature	300.15	K	300.15	K
Fw	Shower Water Flow Rate	1000	L/hr	1000	L/hr
t1	Time Showering	0.25	hours	0.45	hours
t2	Time in Bathroom After Showering	0.33	hours	0.55	hours
Va	Bathroom Air Volume	6	m3	6	m3
f	Fraction Volatilized	Chem-specific	Unitless	Chem-specific	Unitless

Table 4-1
Cancer Toxicity Data - Oral/Dermal
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal (2)		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units		Value	Units		Source	Date Verified
VOLATILES								
1,1,2,2-Tetrachloroethane	2.0E-01	(mg/kg/day) $^{-1}$	100%	2.0E-01	(mg/kg/day) $^{-1}$	C	IRIS	January-13
1,1,2-Trichloroethane	5.7E-02	(mg/kg/day) $^{-1}$	100%	5.7E-02	(mg/kg/day) $^{-1}$	C	IRIS	November-13
1,1-Dichloroethane	5.7E-03	(mg/kg/day) -1	100%	5.7E-03	(mg/kg/day) $^{-1}$	C	CALEPA	November-13
1,2,3-Trichlorobenzene	ND			ND		ND		January-13
1,2,4-Trichlorobenzene	2.9E-02	(mg/kg/day) $^{-1}$	100%	2.9E-02	(mg/kg/day) $^{-1}$	NA	PPRTV	January-13
1,2-Dichlorobenzene	NA			NA		D	IRIS	January-13
1,2-Dichloroethane	9.1E-02	(mg/kg/day) $^{-1}$	100%	9.1E-02	(mg/kg/day) $^{-1}$	B2	IRIS	January-13
1,2-Dichloroethene (total)	ND			ND		ND		November-13
1,2-Dichloroethene (cis)	ND			ND		D	IRIS	January-13
1,2-Dichloroethene (trans)	ND			ND		ND	IRIS	November-13
1,2-Dichloropropane	3.6E-02	(mg/kg/day) $^{-1}$	100%	3.6E-02	(mg/kg/day) $^{-1}$	NA	CALEPA	May-14
1,2,4-Trimethylbenzene	ND			ND		ND		November-13
1,3,5-Trimethylbenzene	ND			ND		ND		November-13
1,3-Dichlorobenzene	NA			NA		D	IRIS	January-13
1,4-Dichlorobenzene	5.4E-03	(mg/kg/day) $^{-1}$	100%	5.4E-03	(mg/kg/day) $^{-1}$	Possibly carcinogenic to humans	CALEPA	January-13
Acetic acid, methyl ester (methyl acetate)	ND			ND		ND		November-13
Acetone	NA			NA		Inadequate evidence	IRIS	November-13
Benzene	5.5E-02	(mg/kg/day) $^{-1}$	100%	5.5E-02	(mg/kg/day) $^{-1}$	Known carcinogen	IRIS	January-13
Chlorobenzene	NA			NA		D	IRIS	January-13
Chloroform	3.1E-02	(mg/kg/day) $^{-1}$	100%	3.1E-02	(mg/kg/day) $^{-1}$	B2	CALEPA	November-13
Ethanol	ND			ND		ND		November-13
Ethylbenzene	1.1E-02	(mg/kg/day) $^{-1}$			(mg/kg/day) $^{-1}$	D	CALEPA	January-13
Methylene Chloride (Dichloromethane) [b]	2.0E-03	(mg/kg/day) $^{-1}$	100%	2.0E-03	(mg/kg/day) $^{-1}$	B2	IRIS	January-13
Methyl-tert-butyl ether	1.8E-03	(mg/kg/day) $^{-1}$	100%	1.8E-03	(mg/kg/day) $^{-1}$	NA	CALEPA	November-13
P-Isopropyltoluene	ND			ND		Inadequate evidence	PPRTV	January-13
Tetrachloroethene	2.1E-03	(mg/kg/day) $^{-1}$	100%	5.4E-01	(mg/kg/day) $^{-1}$	NA	IRIS	January-13
Toluene	NA			NA		Inadequate evidence	IRIS	January-13
Trichloroethene (kidney) [b]	9.3E-03	(mg/kg/day) $^{-1}$				Probably carcinogenic to humans	IRIS	November-13
Trichloroethene (liver and NHL) [b]	3.7E-02	(mg/kg/day) $^{-1}$				Probably carcinogenic to humans	IRIS	November-13
Trichloroethene	4.6E-02	(mg/kg/day) $^{-1}$				Probably carcinogenic to humans	IRIS	November-13
Vinyl Chloride (adult only) [b]	7.2E-01	(mg/kg/day) $^{-1}$	100%	7.2E-01	(mg/kg/day) $^{-1}$	Known carcinogen	IRIS	November-13
Vinyl Chloride (child and adult) [b]	1.4E+00	(mg/kg/day) $^{-1}$	100%	1.4E+00	(mg/kg/day) $^{-1}$	Known carcinogen	IRIS	November-13
Xylenes, m,p-	NA			NA		Inadequate evidence	Surrogate (1)	January-13
Xylenes, o-	NA			NA		Inadequate evidence	Surrogate (1)	January-13
Xylenes (total)	NA			NA		Inadequate evidence	IRIS	January-13
1-Chlorobutane	ND					D	IRIS	November-13
2-Chlorotoluene	ND					ND	IRIS	November-13
p-Chlorotoluene	ND					Inadequate evidence	IRIS	November-13
2,2,4-Trimethylpentane	ND					ND		November-13
4-Ethyltoluene (p-Ethyltoluene)	ND					ND		November-13
3-Methyl hexane	ND					ND		November-13
Ethyl acetate	ND					ND		November-13
Dimethylsulfide	ND					ND		November-13
n-Heptane	ND					D	IRIS	November-13
t-Butyl Alcohol	ND					D	IRIS	November-13

Table 4-1
Cancer Toxicity Data - Oral/Dermal
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal (2)		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units		Value	Units		Source	Date Verified
SEMIVOLATILES								
1,2,4,5-Tetrachlorobenzene	ND				(mg/kg/day) $^{-1}$	ND	IRIS	May-14
1,4-Dioxane	1.0E-01	(mg/kg/day) $^{-1}$	100%	1.0E-01	(mg/kg/day) $^{-1}$	Likely to be carcinogenic to humans	IRIS	November-13
2,4-Dimethylphenol	ND			ND		ND	IRIS	November-13
2-Methylnaphthalene	NA			NA		Inadequate evidence	IRIS	January-13
3-Nitroanaline	ND			ND		Inadequate evidence	PPRTV	November-13
Aniline	5.7E-03	(mg/kg/day) $^{-1}$			(mg/kg/day) $^{-1}$	B2	IRIS	November-13
Benzo(a)anthracene [a] [b]	7.3E-01	(mg/kg/day) $^{-1}$	89%	7.3E-01	(mg/kg/day) $^{-1}$	B2	NCEA	January-13
Benzo(a)pyrene [b]	7.3E+00	(mg/kg/day) $^{-1}$	89%	7.3E+00	(mg/kg/day) $^{-1}$	B2	IRIS	January-13
Benzo(b)fluoranthene [a] [b]	7.3E-01	(mg/kg/day) $^{-1}$	89%	7.3E-01	(mg/kg/day) $^{-1}$	B2	NCEA	January-13
Bis(2-ethylhexyl)phthalate (BEHP)	1.4E-02	(mg/kg/day) $^{-1}$	100%	1.4E-02	(mg/kg/day) $^{-1}$	B2	IRIS	November-13
Biphenyl	8.0E-03	(mg/kg/day) $^{-1}$	100%	8.0E-03	(mg/kg/day) $^{-1}$	D	IRIS	January-13
Cyclohexane, Methyl-	NA			NA			PPRTV	January-13
Dibenzo(a,h)anthracene [a] [b]	7.3E+00	(mg/kg/day) $^{-1}$	89%	7.3E+00	(mg/kg/day) $^{-1}$	B2	NCEA	January-13
Indeno(1,2,3-cd)pyrene [a] [b]	7.3E-01	(mg/kg/day) $^{-1}$	89%	7.3E-01	(mg/kg/day) $^{-1}$	B2	NCEA	January-13
Naphthalene	NA		89%	NA		C	IRIS	January-13
Aldrin	1.7E+01	(mg/kg/day) $^{-1}$	100%	1.7E+01	(mg/kg/day) $^{-1}$	B2	IRIS	November-13
Heptachlor Epoxide	9.1E+00	(mg/kg/day) $^{-1}$	100%	9.1E+00	(mg/kg/day) $^{-1}$	B2	IRIS	November-13
INORGANICS/METALS								
Aluminum	ND			ND		Inadequate evidence	PPRTV	January-13
Antimony	ND			ND		ND	IRIS	January-13
Arsenic	1.5E+00	(mg/kg/day) $^{-1}$	95%	1.5E+00	(mg/kg/day) $^{-1}$	A	IRIS	January-13
Barium	NA			NA		D	IRIS	November-13
Beryllium	NA			NA		Cannot be determined	IRIS	November-13
Cadmium	ND			ND		ND	IRIS	November-13
Cadmium	ND			ND		ND	IRIS	November-13
Chromium III	ND			ND		Inadequate evidence	IRIS	November-13
Chromium VI	ND			ND		Inadequate evidence	IRIS	December-10
Cobalt	ND			ND		ND	PPRTV	January-13
Copper	NA			NA		D	IRIS	January-13
Iron	ND			ND		ND		November-13
Lead	ND			ND		B2	IRIS	November-13
Manganese	ND			ND		D	IRIS	January-13
Mercury	NA			NA		D	IRIS	January-13
Nickel	ND			ND		ND	IRIS	November-13
Selenium	NA			NA		D	IRIS	November-13
Silver	ND			ND		D	IRIS	November-13
Thallium	ND			ND		Inadequate evidence	IRIS	January-13
Vanadium	ND			ND		ND		January-13
Vanadium	ND			ND		ND		November-13
Zinc	NA			NA		Inadequate evidence	IRIS	November-13

Table 4-1
Cancer Toxicity Data - Oral/Dermal
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal (1)	Absorbed Cancer Slope Factor for Dermal (2)		Weight of Evidence/ Cancer Guideline Description	Oral Cancer Slope Factor	
	Value	Units		Value	Units		Source	Date Verified

Notes:

Prepared By: KMW 11/14/2013
Checked By: BJR 11/21/2013
Revised By: KMW 5/15/14
Checked by: MJM 5/20/14
Revised By: LCG 4/10/2015
Checked by: MJM 4/10/2015

In accordance with OSWER 9285.7-53, slope factors are identified from the following heirarchy of sources:

Tier 1:

IRIS = Integrated Risk Information System: Obtained from: http://www.epa.gov/IRIS/

Tier 2:

PPRTV = Preliminary Peer-Reviewed Toxicity Value: Obtained from: http://hhpprtv.ornl.gov/

Tier 3:

HEAST= Health Effects Assessment Summary Tables Obtained from: USEPA Solid Waste and Emergency Response, FY 1997 Update. EPA-540-R-97-036. July 1997.

MRL = Minimum Risk Level (ATSDR: chronic MRLs): Obtained from: http://www.atsdr.cdc.gov/mrls/index.asp

CalEPA = California Environmental Protection Agency Toxicity Criteria Database Obtained from: http://www.oehha.ca.gov/risk/chemicalDB/

NCEA = National Center for Environmental Assessment

(1) Values obtained from RAGS Volume 1 (Part E, Supplemental Guidance for Dermal Risk Assessment, Final) (USEPA, 2004)
Per this guidance, a value of 100% is used for analytes without published values.

(2) Adjusted Dermal SF = Oral SF / Oral to Dermal Adjustment Factor. Per RAGS Part E (USEPA, 2004), adjustments are only performed for chemicals that have an oral absorption efficiency of less than 50%.

[a] - Slope Factor for Benzo(a)Pyrene used for other carcinogenic PAHs, adjusted by Relative Potency Factors of 1.0 [benzo(a)pyrene,dibenz(a,h)anthracene]; 0.1 [benzo(a)anthracene, benzo(b)flouoranthene, indeno(1,2,3-c,d)pyrene].

[b] - Slope factors are developed in accordance with the USEPA Memorandum: "Implementation of the Cancer Guidelines and Accompanying Supplemental Guidance - Science Policy Council Cancer Guidelines Implementation Workgroup Communication II: Performing Risk Assessments that include Carcinogens Described in the Supplemental Guidance as having a Mutagenic Mode of Action (June 14, 2006)
USThe EPA-published slope factor will be multiplied by generic age-dependant adjustment factors (ADAFs) as follows:
Young children (<6 yrs of age): ADAF of 5.3 calculated as an age-weighted ADAF for children 0<2 (ADAF=10) and children 2<6 (ADAF=3), as follows: [(2 yrs x 10) + (3 yrs x 4)] / 6 yrs = 5.3
Older children (6 < 16 yrs of age): ADAF of 3 is the applicable value for this age range.
Adults (>16 yrs of age): ADAF of 1 is the applicable value for this age range.
Older Children/Adults (Age >6 - <30): ADAF of 1.8 calculated as an age-weighted ADAF for older children >6 - <16 (ADAF=3) and adults >16 (ADAF=1), as follows: [(10 yrs x 3) + (14 yrs x 1)] / 24 yrs = 1.8

The ADAF is only applied to the trichloroethylene kidney slope factor; Refer to Table 4-3 for these slope factors.

Weight of Evidence:
- A - Human carcinogen
- B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
- C - Possible human carcinogen
- D - Not classifiable as a human carcinogen
- B1 - Probable human carcinogen - indicates that limited human data are available

kg = kilogram
mg = milligram
NA = not listed in hierarchy sources
ND = no data available

Table 4-2
Cancer Toxicity Data -- Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk: Inhalation Cancer Slope Factor	
	Value	Units		Source	Date Verified
VOLATILES					
1,1,2,2-Tetrachloroethane	5.8E-05	$(ug/m^3)^{-1}$	C	CALEPA	January-13
1,1,2-Trichloroethane	1.6E-05	$(ug/m^3)^{-1}$	C	IRIS	November-13
1,1-Dichloroethane	1.6E-06	$(ug/m^3)^{-1}$	NA	CALEPA	November-13
1,2,3-Trichlorobenzene	ND		ND		November-13
1,2,4-Trichlorobenzene	NA		D	IRIS	January-13
1,2-Dichlorobenzene	NA		D	IRIS	January-13
1,2-Dichloroethane	2.6E-05	$(ug/m^3)^{-1}$	B2	IRIS	January-13
1,2-Dichloroethene (total)	ND		ND		November-13
1,2-Dichloroethene (cis)	NA		D	IRIS	January-13
1,2-Dichloroethene (trans)	ND		ND	IRIS	November-13
1,2-Dichloropropane	1.0E-05	$(ug/m^3)^{-1}$	NA	CALEPA	May-14
1,2,4-Trimethylbenzene	ND		ND		November-13
1,3,5-Trimethylbenzene	ND		ND		November-13
1,3-Dichlorobenzene	NA		D	IRIS	January-13
1,4-Dichlorobenzene	1.1E-05	$(ug/m^3)^{-1}$	Possibly carcinogenic to humans	CALEPA	January-13
Acetic acid, methyl ester (methyl acetate)	ND				November-13
Acetone	NA		Inadequate data	IRIS	November-13
Benzene	7.8E-06	$(ug/m^3)^{-1}$	Known human carcinogen	IRIS	January-13
Chlorobenzene	NA		D	IRIS	January-13
Chloroform	2.3E-05	$(ug/m^3)^{-1}$	B2	IRIS	November-13
Ethanol	ND		ND		November-13
Ethylbenzene	2.5E-06	$(ug/m^3)^{-1}$	D	CALEPA	January-13
Methylene chloride (Dichloromethane)	1.0E-08	$(ug/m^3)^{-1}$	B2	IRIS	January-13
Methyl-tert-butyl ether	2.6E-07	$(ug/m^3)^{-1}$	NA	CALEPA	November-13
P-Isopropyltoluene	ND		Inadequate data	PPRTV	January-13
Tetrachloroethene	2.6E-07	$(ug/m^3)^{-1}$	NA	IRIS	January-13
Toluene	NA		Inadequate data	IRIS	January-13
Trichloroethene (kidney)	1.0E-06	$(ug/m^3)^{-1}$	Probably carcinogenic to humans	IRIS	November-13
Trichloroethene (liver and NHL)	3.1E-06	$(ug/m^3)^{-1}$	Probably carcinogenic to humans	IRIS	November-13
Trichloroethene	4.1E-06	$(ug/m^3)^{-1}$	Probably carcinogenic to humans	IRIS	November-13
Vinyl Chloride (adult only)	4.4E-06	$(ug/m^3)^{-1}$	Known human carcinogen	IRIS	November-13
Vinyl Chloride (adult and child)	8.8E-06	$(ug/m^3)^{-1}$	Known human carcinogen	IRIS	November-13
Xylenes, m,p-	NA		Inadequate data	Surrogate (1)	January-13
Xylenes, o-	NA		Inadequate data	Surrogate (1)	January-13
Xylenes (total)	NA		Inadequate data	IRIS	January-13
1-Chlorobutane	ND		D	IRIS	November-13
2-Chlorotoluene	ND		ND	IRIS	November-13
p-Chlorotoluene	ND		Inadequate data	IRIS	November-13
2,2,4-Trimethylpentane	ND		ND		November-13
4-Ethyltoluene (p-Ethyltoluene)	ND		ND		November-13
3-Methyl hexane	ND		ND		November-13
Ethyl acetate	ND		D	IRIS	November-13
Dimethylsulfide	ND		D		November-13
n-Heptane	ND		D	IRIS	November-13
t-Butyl Alcohol	ND		D		November-13

Table 4-2
Cancer Toxicity Data -- Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk: Inhalation Cancer Slope Factor	
	Value	Units		Source	Date Verified
SEMIVOLATILES					
1,2,4,5-Tetrachlorobenzene	ND		ND	IRIS	May-14
1,4-Dioxane	5.0E-06	$(ug/m^3)^{-1}$	Likely carcinogenic in humans	IRIS	November-13
2,4-Dimethylphenol	ND		ND	IRIS	November-13
2-Methylnaphthalene	NA		Inadequate evidence	IRIS	January-13
3-Nitroanaline	ND		Inadequate data	PPRTV	November-13
Aniline	1.6E-06	$(ug/m^3)^{-1}$	B2	CALEPA	November-13
Benzo(a)anthracene	1.1E-04	$(ug/m^3)^{-1}$	B2	CALEPA	January-13
Benzo(a)pyrene	1.1E-03	$(ug/m^3)^{-1}$	B2	CALEPA	January-13
Benzo(b)fluoranthene	1.1E-04	$(ug/m^3)^{-1}$	B2	CALEPA	January-13
bis(2-ethylhexyl)phthalate (BEHP)	2.4E-06	$(ug/m^3)^{-1}$	NA	CALEPA	November-13
Biphenyl	NA		D	IRIS	January-13
Cyclohexane, Methyl-	NA			PPRTV	January-13
Dibenzo(a,h)anthracene	1.2E-03	$(ug/m^3)^{-1}$	B2	CALEPA	January-13
Indeno(1,2,3-cd)pyrene	1.1E-04	$(ug/m^3)^{-1}$	B2	CALEPA	January-13
Naphthalene	3.4E-05		Possibly carcinogenic to humans	CALEPA	January-13
Aldrin	4.9E-03	$(ug/m^3)^{-1}$	B2	IRIS	November-13
Heptachlor Epoxide	2.6E-03	$(ug/m^3)^{-1}$	B2	IRIS	November-13
INORGANICS/METALS					
Aluminum	ND		Inadequate data	PPRTV	January-13
Antimony	ND		Inadequate data	IRIS	January-13
Arsenic	4.3E-03	$(ug/m^3)^{-1}$	A	IRIS	January-13
Barium	NA		D	IRIS	November-13
Beryllium	2.4E-03	$(ug/m^3)^{-1}$	Likely carcinogenic in humans	IRIS	November-13
Cadmium	1.8E-03	$(ug/m^3)^{-1}$	B1	IRIS	November-13
Cadmium	1.8E-03	$(ug/m^3)^{-1}$	B1	IRIS	November-13
Chromium III	ND		D	IRIS	November-13
Chromium VI	1.2E-02	$(ug/m^3)^{-1}$	A	IRIS	December-10
Cobalt	9.0E-03	$(ug/m^3)^{-1}$	Likely carcinogenic in humans	PPRTV	January-13
Copper	NA		D	IRIS	January-13
Iron	ND		ND		November-13
Lead	ND		B2	IRIS	November-13
Manganese	ND		D	IRIS	January-13
Mercury	NA		D	IRIS	January-13
Nickel	2.6E-04	(ug/m3)-1	NE	CALEPA	November-13
Selenium	NA		D	IRIS	November-13
Silver	ND		D	IRIS	November-13
Thallium	ND		Inadequate evidence	IRIS	January-13
Vanadium	ND		ND		January-13
Sulfur dioxide	ND		ND		November-13
Zinc	NA		Inadequate evidence	IRIS	November-13

Table 4-2
Cancer Toxicity Data -- Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk: Inhalation Cancer Slope Factor	
	Value	Units		Source	Date Verified

Notes:

In accordance with OSWER 9285.7-53, unit risk values are identified from the following heirarchy of sources:
Tier 1:
IRIS = Integrated Risk Information System:
Tier 2:
PPRTV = Preliminary Peer-Reviewed Toxicity Value:
Tier 3:
HEAST= Health Effects Assessment Summary Tables
MRL = Minimum Risk Level (ATSDR: chronic MRLs):
CalEPA = California Environmental Protection Agency Toxicity Criteria Database
PPRTV SL = Preliminary Peer-Reviewed Toxicity Value Screening Level

Weight of Evidence:
A - Human carcinogen
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
NE - Carcinogenicity not evaluated by EPA

Nickel has been evaluated as Nickel soulble salts and is not evaluated by EPA for human carcinogenicity.

Surrogate (1) - Value for total xylenes used as a surrogate

Prepared By: KMW 11/14/2013
Checked By: BJR 11/21/2013
Revised By: KMW 5/15/14
Checked by: MJM 5/20/14
Revised By: LCG 4/10/2015
Checked by: MJM 4/10/2015

Table 4-3
Trichloroethylene Adjusted Slope Factors
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

	Unadjusted Slope Factors				Adjusted Slope Factors			
Units:	$(mg/kg/d)^{-1}$	$(mg/kg/d)^{-1}$	$(mg/kg/d)^{-1}$	-	$(mg/kg/d)^{-1}$	$(mg/kg/d)^{-1}$	$(mg/kg/d)^{-1}$	(mg/kg/d)-1
Age group	Kidney unadjusted lifetime slope factor (p 5-144 [Table 5-40])	NHL+ liver lifetime slope factor	Kidney+NHL+ liver unadjusted lifetime slope factor (p 5-143 [5.2.2.3])	Kidney cancer default ADAF	Kidney adjusted lifetime slope factor (p 5-144 [Table 5-40])	NHL+ liver lifetime slope factor	Kidney+NHL+ liver adjusted lifetime slope factor using Kidney cancer ADAF	**Final Slope Factor by Age**
Birth to <2 years	9.3E-03	3.7E-02	4.6E-02	10	9.3E-02	3.7E-02	1.3E-01	**1.3E-01**
2 to <6 years	9.3E-03	3.7E-02	4.6E-02	3	2.8E-02	3.7E-02	6.5E-02	**6.5E-02**
6 to <16 years	9.3E-03	3.7E-02	4.6E-02	3	2.8E-02	3.7E-02	6.5E-02	**6.5E-02**
16 to 30	9.3E-03	3.7E-02	4.6E-02	1	9.3E-03	3.7E-02	4.6E-02	**4.6E-02**
30 to 70*	9.3E-03	3.7E-02	4.6E-02	1	9.3E-03	3.7E-02	4.6E-02	**4.6E-02**
Weighted Slope Factors to be used in the HHRA:								
Age Group								
0 to 6	9.3E-03	3.7E-02	4.6E-02	5.3	4.9E-02	3.7E-02	8.6E-02	**8.6E-02**
12 to 18	9.3E-03	3.7E-02	4.6E-02	2.3	2.1E-02	3.7E-02	5.8E-02	**5.8E-02**

Notes:
Weighted slope factors calculated by calculating a weighted average ADAF and multiplying the weighted average ADAF by the kidney cancer unadjusted slope factor.
For example: For 0 to 6 years of age: = [(2 years x 10) + (4 years x 3)]/6 = 5.3

(mg/kg/d)-1 - the inverse of miligrams per kilogram per day

Prepared By: KMW 11/14/2013
Checked By: BJR 11/21/2013
Revised By: KMW 5/15/14
Checked by: MJM 5/20/14

Table 4-4
Trichloroethylene Adjusted Unit Risk
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

	Unadjusted Unit Risk				Adjusted Unit Risk			
Units:	$(\mu g/m^3\ air)^{-1}$	$(\mu g/m^3\ air)^{-1}$	$(\mu g/m^3\ air)^{-1}$	-	$(\mu g/m^3\ air)^{-1}$	$(\mu g/m^3\ air)^{-1}$	$(\mu g/m^3\ air)^{-1}$	$(\mu g/m^3\ air)^{-1}$
Age group	Kidney unadjusted lifetime unit risk (p 5-137 [5.2.2.1.4])	NHL+ liver lifetime slope factor	Kidney+NHL+ liver unadjusted lifetime unit risk (p 5-139 [5.2.2.2])	Kidney cancer default ADAF	Kidney adjusted lifetime slope factor (p 5-144 [Table 5-40])	NHL+ liver lifetime unit risk	Kidney+NHL+ liver adjusted lifetime unit risk using Kidney cancer ADAF	**Final Unit Risk by Age**
Birth to <2 years	1.0E-06	3.1E-06	4.1E-06	10	1.0E-05	3.1E-06	1.3E-05	**1.3E-05**
2 to <6 years	1.0E-06	3.1E-06	4.1E-06	3	3.0E-06	3.1E-06	6.1E-06	**6.1E-06**
6 to <16 years	1.0E-06	3.1E-06	4.1E-06	3	3.0E-06	3.1E-06	6.1E-06	**6.1E-06**
16 to 30	1.0E-06	3.1E-06	4.1E-06	1	1.0E-06	3.1E-06	4.1E-06	**4.1E-06**
30 to 70*	1.0E-06	3.1E-06	4.1E-06	1	1.0E-06	3.1E-06	4.1E-06	**4.1E-06**
Weighted Slope Factors to be used in the HHRA:								
Age Group								
0 to 6	1.0E-06	3.1E-06	4.1E-06	5.3	5.3E-06	3.1E-06	8.4E-06	**8.4E-06**
12 to 18	1.0E-06	3.1E-06	4.1E-06	2.3	2.3E-06	3.1E-06	5.4E-06	**5.4E-06**

Notes:
Weighted unit risks calculated by calculating a weighted average ADAF and multiplying the weighted average ADAF by the kidney cancer unadjusted slope fac
For example: For 0 to 6 years of age: = [(2 years x 10) + (4 years x 3)]/6 = 5.3

$(\mu g/m^3)^{-1}$ - the inverse of micrograms per cubic meter.

Prepared By: KMW 11/14/2013
Checked By: BJR 11/21/2013
Revised By: KMW 5/15/14
Checked by: MJM 5/20/14

Table 4-5
Non-Cancer Toxicity Data - Oral/Dermal
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Adjusted Dermal RfD (2)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source	Date Verified
VOLATILES										
1,1,2,2-Tetrachloroethane	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Liver	300	IRIS	January-13
	subchronic	5.0E-01	mg/kg/day	100%	5.0E-01	mg/kg/day	Liver	100	MRL	January-13
1,1,2-Trichloroethane	chronic	4.0E-03	mg/kg/day	100%	4.0E-03	mg/kg/day	Hematological; clinical serum chemistry alterations	1,000/1	IRIS	November-13
	subchronic	4.0E-03	mg/kg/day	100%	4.0E-03	mg/kg/day	Liver	1,000	PPRTV	November-13
1,1-Dichloroethane	chronic	2.0E-01	mg/kg/day	100%	2.0E-01	mg/kg/day	Kidney	3,000	PPRTV	November-13
	subchronic	2.0E+00	mg/kg/day	100%	2.0E+00	mg/kg/day	Kidney	300	PPRTV	November-13
1,2,3-Trichlorobenzene	chronic	8.0E-04	mg/kg/day	100%	8.0E-04	mg/kg/day	NOAEL	10,000	PPRTV SL	January-13
	subchronic	8.0E-03	mg/kg/day	100%	8.0E-03	mg/kg/day	Liver; kidney; decreased body weight gain	1,000	PPRTV	January-13
1,2,4-Trichlorobenzene	chronic	1.0E-02	mg/kg/day	100%	1.0E-02	mg/kg/day	Endocrine; increased adrenal weights	1,000/1	IRIS	January-13
	subchronic	9.0E-02	mg/kg/day	100%	9.0E-02	mg/kg/day	Liver	100	PPRTV	January-13
1,2-Dichlorobenzene	chronic	9.0E-02	mg/kg/day	100%	9.0E-02	mg/kg/day	Liver / NOAEL	1,000/1	IRIS	January-13
	subchronic	6.0E-01	mg/kg/day	100%	6.0E-01	mg/kg/day	Renal	100	MRL	January-13
1,2-Dichloroethane	chronic	6.0E-03	mg/kg/day	100%	6.0E-03	mg/kg/day	Renal	300	PPRTV	January-13
	subchronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Kidney	3,000	PPRTV	January-13
1,2-Dichloroethene (total)	chronic	9.0E-03	mg/kg/day	100%	9.0E-03	mg/kg/day	Liver; lesions	1,000/1	HEAST97	November-13
	subchronic	9.0E-03	mg/kg/day	100%	9.0E-03	mg/kg/day	Liver; lesions	1,000/1	HEAST97	November-13
1,2-Dichloroethene (cis)	chronic	2.0E-03	mg/kg/day	100%	2.0E-03	mg/kg/day	Kidney	3,000	IRIS	January-13
	subchronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Hematological	100/1	PPRTV	January-13
1,2-Dichloroethene (trans)	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Liver; increased serum alkaline phosphatase	1,000/1	IRIS	November-13
	subchronic	2.0E-01	mg/kg/day	100%	2.0E-01	mg/kg/day	Liver	100	MRL	November-13
1,2-Dichloropropane	chronic	9.0E-02	mg/kg/day	100%	9.0E-02	mg/kg/day	Liver	1,000	MRL	May-14
	subchronic	9.0E-02	mg/kg/day	100%	9.0E-02	mg/kg/day	Liver	1,000/1	Chronic	May-14
1,2,4-Trimethylbenzene	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
1,3,5-Trimethylbenzene	chronic	1.0E-02	mg/kg/day	100%	1.0E-02	mg/kg/day	NOAEL	1,000	PPRTV	November-13
	subchronic	1.0E-01	mg/kg/day	100%	1.0E-01	mg/kg/day	NOAEL	1,000	PPRTV	November-13
1,3-Dichlorobenzene	chronic	3.0E-03	mg/kg/day	100%	3.0E-03	mg/kg/day	Liver		NCEA	January-13
	subchronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Endocrine	100	MRL	January-13
1,4-Dichlorobenzene	chronic	7.0E-02	mg/kg/day	100%	7.0E-02	mg/kg/day	Hepatic	100	MRL	January-13
	subchronic	7.0E-02	mg/kg/day	100%	7.0E-02	mg/kg/day	Hepatic	100	MRL	January-13
Acetic acid, methyl ester (methyl acetate)	chronic	1.0E+00	mg/kg/day	100%	1.0E+00	mg/kg/day	Liver; increased alkalkaline phosphatase and SGPT	1,000/1	PPRTV	November-13
	subchronic	1.0E+01	mg/kg/day	100%	1.0E+01	mg/kg/day	Liver; increased alkalkaline phosphatase and SGPT	100/1	HEAST97	November-13
Acetone	chronic	9.0E-01	mg/kg/day	100%	9.0E-01	mg/kg/day	Kidney; nephropathy	1,000/1	IRIS	November-13
	subchronic	2.0E+00	mg/kg/day	100%	2.0E+00	mg/kg/day	Hematological	100	MRL	November-13
Benzene	chronic	4.0E-03	mg/kg/day	100%	4.0E-03	mg/kg/day	Immune system; decreased lymphocyte count	300	IRIS	January-13
	subchronic	1.0E-02	mg/kg/day	100%	1.0E-02	mg/kg/day	Immune system; decreased lymphocyte count	100	PPRTV	January-13
Chlorobenzene	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Liver; hepatic changes	1,000/1	IRIS	January-13
	subchronic	7.0E-02	mg/kg/day	100%	7.0E-02	mg/kg/day	Liver; hepatic changes; gastro intestinal; bone marrow	300	PPRTV	January-13
Chloroform	chronic	1.0E-02	mg/kg/day	100%	1.0E-02	mg/kg/day	Liver; fatty cyst formation in liver	100/1	IRIS	November-13
	subchronic	1.0E-01	mg/kg/day	100%	1.0E-01	mg/kg/day	Hepatic	100	MRL	November-13
Ethanol	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
Ethylbenzene	chronic	1.0E-01	mg/kg/day	100%	1.0E-01	mg/kg/day	Liver and kidney; liver and kidney toxicity	1,000/1	IRIS	January-13
	subchronic	5.0E-02	mg/kg/day	100%	5.0E-02	mg/kg/day	Liver	1,000	PPRTV	January-13
Methylene Chloride (Dichloromethane)	chronic	6.0E-03	mg/kg/day	100%	6.0E-03	mg/kg/day	Liver; liver toxicity	100/1	IRIS	January-13
	subchronic	6.0E-02	mg/kg/day	100%	6.0E-02	mg/kg/day	Liver; liver toxicity	100/1	HEAST97	January-13
Methyl-tert-butyl ether	chronic	ND			ND					November-13
	subchronic	3.0E-01	mg/kg/day	100%	3.0E-01	mg/kg/day	Liver	300	MRL	November-13
P-Isopropyltoluene	chronic	ND			ND				PPRTV	January-13
	subchronic	ND			ND				PPRTV	January-13
Tetrachloroethene	chronic	6.0E-03	mg/kg/day	100%	6.0E-03	mg/kg/day	Liver; hepatotoxicity	1,000/1	IRIS	January-13
	subchronic	1.0E-01	mg/kg/day	100%	1.0E-01	mg/kg/day	Liver; hepatotoxicity	100/1	HEAST97	January-13
Toluene	chronic	8.0E-02	mg/kg/day	100%	8.0E-02	mg/kg/day	Kidney; increased kidney weight	3000/1	IRIS	January-13
	subchronic	8.0E-01	mg/kg/day	100%	8.0E-01	mg/kg/day	Kidney; increased kidney weight	300	PPRTV	January-13
Trichloroethene	chronic	5.0E-04	mg/kg/day	100%	5.0E-04	mg/kg/day	Heart malformations; immunotoxicity; developmental immunotoxicity	1000/100/10	IRIS	January-13
	subchronic	3.0E-04	mg/kg/day	100%	3.0E-04	mg/kg/day	Immune system		Chronic	January-13

Table 4-5
Non-Cancer Toxicity Data - Oral/Dermal
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Adjusted Dermal RfD (2)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source	Date Verified
Vinyl Chloride	chronic	3.0E-03	mg/kg/day	100%	3.0E-03	mg/kg/day	Liver; liver cell polymorphism	30/1	IRIS	November-13
	subchronic	3.0E-03	mg/kg/day	100%	3.0E-03	mg/kg/day	Liver; liver cell polymorphism	30/1	Chronic	November-13
Xylenes, m,p-	chronic	2.0E-01	mg/kg/day	100%	2.0E-01	mg/kg/day	General toxicity; increased mortality	1,000/1	Surrogate (3)	January-13
	subchronic	4.0E-01	mg/kg/day	100%	4.0E-01	mg/kg/day	decreased body weight	1,000	Surrogate (3)	January-13
Xylenes, o-	chronic	2.0E-01	mg/kg/day	100%	2.0E-01	mg/kg/day	General toxicity; increased mortality	1,000/1	Surrogate (3)	January-13
	subchronic	4.0E-01	mg/kg/day	100%	4.0E-01	mg/kg/day	decreased body weight	1,000	Surrogate (3)	January-13
Xylenes (total)	chronic	2.0E-01	mg/kg/day	100%	2.0E-01	mg/kg/day	General toxicity; increased mortality	1,000/1	IRIS	January-13
	subchronic	4.0E-01	mg/kg/day	100%	4.0E-01	mg/kg/day	decreased body weight	1,000	PPRTV	January-13
1-Chlorobutane	chronic	4.00E-02	mg/kg/day	100%	4.0E-02	mg/kg/day	General toxicity; increased mortality	1,000	PPRTV	November-13
	subchronic	7.0E-02	mg/kg/day	100%	7.0E-02	mg/kg/day	General toxicity; increased mortality	1,000	PPRTV	November-13
2-Chlorotoluene	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	decreased body weight	1,000	IRIS	November-13
	subchronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	decreased body weight	1,000	PPRTV	November-13
p-Chlorotoluene	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	No specific critical effect or endpoint	10,000	PPRTV SL	November-13
	subchronic	2.0E-01	mg/kg/day	100%	2.0E-01	mg/kg/day	No specific critical effect or endpoint	1,000	PPRTV	November-13
2,2,4-Trimethylpentane	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
4-Ethyltoluene (p-Ethyltoluene)	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
3-Methyl hexane	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
Ethyl acetate	chronic	9.0E-01	mg/kg/day	100%	9.0E-01	mg/kg/day	Mortaility and weight loss	1,000/1	IRIS	November-13
	subchronic	7.0E-01	mg/kg/day	100%	7.0E-01	mg/kg/day	Lethargy	300	PPRTV	November-13
Dimethylsulfide	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
n-Heptane	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
t-Butyl Alcohol	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
SEMIVOLATILES										
1,2,4,5-Tetrachlorobenzene	chronic	3.00E-04	mg/kg/day	100%	3.0E-04	mg/kg/day	Kidney lesions	100	IRIS	May-14
	subchronic	3.00E-04	mg/kg/day	100%	3.0E-04	mg/kg/day	Kidney lesions	100	chronic	May-14
1,4-Dioxane	chronic	3.0E-02	mg/kg/day	100%	3.0E-02	mg/kg/day	Liver	300	IRIS	November-13
	subchronic	5.0E-01	mg/kg/day	100%	5.0E-01	mg/kg/day	Liver	100	MRL	November-13
2,4-Dimethylphenol	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Hematological; adverse clinical hematological changes	3,000/1	IRIS	November-13
	subchronic	5.0E-02	mg/kg/day	100%	5.0E-02	mg/kg/day	Hematological; adverse clinical hematological changes	1,000	PPRTV	November-13
2-Methylnaphthalene	chronic	4.0E-03	mg/kg/day	89%	4.0E-03	mg/kg/day	Lung; pulmonary alveolar proteinosis	1,000/1	IRIS	January-13
	subchronic	4.0E-03	mg/kg/day	89%	4.0E-03	mg/kg/day	Lung; pulmonary alveolar proteinosis	1,000	PPRTV	January-13
3-Nitroanaline	chronic	ND			ND				PPRTV	November-13
	subchronic	1.0E-03	mg/kg/day	100%	1.0E-03	mg/kg/day	Hematological effects	10,000	PPRTV SL	November-13
Aniline	chronic	7.0E-03	mg/kg/day				RBCs; spleen	1,000	PPRTV	November-13
	subchronic	ND			ND					November-13
Benzo(a)anthracene	chronic	6.0E-02	mg/kg/day	89%	6.0E-02	mg/kg/day	Kidney; renal tubular pathology	3,000/1	Surrogate (2)	January-13
	subchronic	2.0E-01	mg/kg/day	89%	2.0E-01	mg/kg/day	Kidney; renal tubular pathology	300/1	Surrogate (2)	January-13
Benzo(a)pyrene	chronic	6.0E-02	mg/kg/day	89%	6.0E-02	mg/kg/day	Kidney; renal tubular pathology	3,000/1	Surrogate (2)	January-13
	subchronic	2.0E-01	mg/kg/day	89%	2.0E-01	mg/kg/day	Kidney; renal tubular pathology	300/1	Surrogate (2)	January-13
Benzo(b)fluoranthene	chronic	6.0E-02	mg/kg/day	89%	6.0E-02	mg/kg/day	Kidney; renal tubular pathology	3,000/1	Surrogate (2)	January-13
	subchronic	2.0E-01	mg/kg/day	89%	2.0E-01	mg/kg/day	Kidney; renal tubular pathology	300/1	Surrogate (2)	January-13
Bis(2-ethylhexyl)phthalate (BEHP)	chronic	2.0E-02	mg/kg/day	100%	2.0E-02	mg/kg/day	Liver; increased liver weight	1,000/1	IRIS	November-13
	subchronic	1.0E-01	mg/kg/day	100%	1.0E-01	mg/kg/day	Reproductive	100	MRL	November-13
Biphenyl	chronic	5.0E-01	mg/kg/day	100%	5.0E-01	mg/kg/day	Kidney; kidney damage	30	IRIS	January-13
	subchronic	1.0E-01	mg/kg/day	100%	1.0E-01	mg/kg/day	Kidney; kidney damage	100/1	PPRTV	January-13
Cyclohexane, Methyl-	chronic	ND			ND				PPRTV	January-13
	subchronic	ND			ND				PPRTV	January-13
Dibenzo(a,h)anthracene	chronic	6.0E-02	mg/kg/day	89%	6.0E-02	mg/kg/day	Kidney; renal tubular pathology	3,000/1	Surrogate (2)	January-13
	subchronic	2.0E-01	mg/kg/day	89%	2.0E-01	mg/kg/day	Kidney; renal tubular pathology	300/1	Surrogate (2)	January-13
Indeno(1,2,3-cd)pyrene	chronic	6.0E-02	mg/kg/day	89%	6.0E-02	mg/kg/day	Kidney; renal tubular pathology	3,000/1	Surrogate (2)	January-13
	subchronic	2.0E-01	mg/kg/day	89%	2.0E-01	mg/kg/day	Kidney; renal tubular pathology	300/1	Surrogate (2)	January-13
Naphthalene	chronic	2.0E-02	mg/kg/day	89%	2.0E-02	mg/kg/day	Decreased body weight	3,000/1	IRIS	January-13
	subchronic	6.0E-01	mg/kg/day	89%	6.0E-01	mg/kg/day	CNS	90	MRL	January-13

Table 4-5
Non-Cancer Toxicity Data - Oral/Dermal
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Adjusted Dermal RfD (2)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source	Date Verified
Aldrin	chronic	3.0E-05	mg/kg/day	70%	3.0E-05	mg/kg/day	Liver; hepatotoxicity	1,000/1	IRIS	November-13
	subchronic	4.0E-05	mg/kg/day	70%	4.0E-05	mg/kg/day	renal lesions	1,000	PPRTV	November-13
Heptachlor Epoxide	chronic	1.3E-05	mg/kg/day	100%	1.3E-05	mg/kg/day	Liver; increased liver weight	1,000/1	IRIS	November-13
	subchronic	1.3E-05	mg/kg/day	100%	1.3E-05	mg/kg/day	Liver; increased liver weight	1,000/1	HEAST97	November-13
INORGANICS/METALS										
Aluminum	chronic	1.0E+00	mg/kg/day	100%	1.0E+00	mg/kg/day	LOAEL / CNS	100	PPRTV	January-13
	subchronic	1.0E+00	mg/kg/day	100%	1.0E+00	mg/kg/day	CNS	30	MRL	January-13
Antimony	chronic	4.0E-04	mg/kg/day	15%	6.0E-05	mg/kg/day	Reduced lifespan; hematological; blood glucose and cholesterol	1,000/1	IRIS	January-13
	subchronic	4.0E-04	mg/kg/day	15%	6.0E-05	mg/kg/day	Reduced lifespan; hematological; blood glucose and cholesterol	1,000	PPRTV	January-13
Arsenic	chronic	3.0E-04	mg/kg/day	95%	3.0E-04	mg/kg/day	Skin; keratosis, hyperpigmentation and vascular complications	3/1	IRIS	January-13
	subchronic	3.0E-04	mg/kg/day	95%	3.0E-04	mg/kg/day	Skin; keratosis and hyperpigmentation	3/1	HEAST	January-13
Barium	chronic	2.0E-01	mg/kg/day	7%	1.4E-02	mg/kg/day	Kidney; nephropathy	300	IRIS	November-13
	subchronic	2.0E-01	mg/kg/day	7%	1.4E-02	mg/kg/day	Renal	100	MRL	November-13
Beryllium	chronic	2.0E-03	mg/kg/day	0.7%	1.4E-05	mg/kg/day	Small intestine; small intestinal lesions	300/1	IRIS	November-13
	subchronic	5.0E-03	mg/kg/day	0.7%	3.5E-05	mg/kg/day	Small intestine; small intestinal lesions	100/1	HEAST97	November-13
Cadmium (food)	chronic	1.0E-03	mg/kg/day	2.5%	2.5E-05	mg/kg/day	Kidney; proteinuria	10/1	IRIS	November-13
	subchronic	5.0E-04	mg/kg/day	2.5%	1.3E-05	mg/kg/day	Musculoskeletal effects	100	MRL	November-13
Cadmium (water)	chronic	5.0E-04	mg/kg/day	5%	2.5E-05	mg/kg/day	Kidney; proteinuria	10/1	IRIS	November-13
	subchronic	5.0E-04	mg/kg/day	5%	2.5E-05	mg/kg/day	Kidney; proteinuria	10/1	Chronic	November-13
Chromium III	chronic	1.5E+00	mg/kg/day	1.3%	2.0E-02	mg/kg/day	No effects observed	100/10	IRIS	November-13
	subchronic	1.0E+00	mg/kg/day	1.3%	1.3E-02	mg/kg/day	No effects observed	1,000/1	HEAST	February-11
Chromium VI	chronic	3.0E-03	mg/kg/day	2.5%	7.5E-05	mg/kg/day	No effects reported	300/3	IRIS	December-10
	subchronic	2.0E-02	mg/kg/day	2.5%	5.0E-04	mg/kg/day	No effects reported	100/1	HEAST	February-11
Cobalt	chronic	3.0E-04	mg/kg/day	100%	3.0E-04	mg/kg/day	LOAEL / Thyroid	3,000	PPRTV	January-13
	subchronic	3.0E-03	mg/kg/day	100%	3.0E-03	mg/kg/day	LOAEL / Thyroid	300	PPRTV	January-13
Copper	chronic	4.0E-02	mg/kg/day	100%	4.0E-02	mg/kg/day			HEAST	January-13
	subchronic	1.0E-02	mg/kg/day	100%	1.0E-02	mg/kg/day	Gastrointestinal system	3	MRL	January-13
Iron	chronic	7.0E-01	mg/kg/day	100%	7.0E-01	mg/kg/day	Gastrointestinal system	1.5	PPRTV	November-13
	subchronic	7.0E-01	mg/kg/day	100%	7.0E-01	mg/kg/day	Gastrointestinal system	1.5	PPRTV	November-13
Lead	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13
Manganese (soil)	chronic	1.4E-01	mg/kg/day	4%	5.6E-03	mg/kg/day	CNS; Impairment of neurobehavioral function	1	IRIS	January-13
	subchronic	1.4E-01	mg/kg/day	4%	5.6E-03	mg/kg/day	CNS; Impairment of neurobehavioral function	1	chronic	January-13
Mercury	chronic	3.0E-04	mg/kg/day	7%	2.1E-05	mg/kg/day	Immune system; autoimmune effects	1,000/1	IRIS	January-13
	subchronic	2.0E-03	mg/kg/day	7%	1.4E-04	mg/kg/day	Renal	100	MRL	January-13
Nickel	chronic	2.0E-02	mg/kg/day	4%	8.0E-04	mg/kg/day	Decreased body and organ weights	300/1	IRIS	November-13
	subchronic	2.0E-02	mg/kg/day	4%	8.0E-04	mg/kg/day	Decreased body and organ weights	300/1	HEAST97	November-13
Selenium	chronic	5.0E-03	mg/kg/day	80%	5.0E-03	mg/kg/day	Skin and liver; clinical selenosis	3/1	IRIS	November-13
	subchronic	5.0E-03	mg/kg/day	80%	5.0E-03	mg/kg/day	Clinical selenosis	3/1	HEAST97	November-13
Silver	chronic	5.0E-03	mg/kg/day	4%	2.0E-04	mg/kg/day	Skin, eye, and respiratory tract; argyria	3/1	IRIS	November-13
	subchronic	5.0E-03	mg/kg/day	4%	2.0E-04	mg/kg/day	Skin; argyria	3/1	HEAST	November-13
Thallium	chronic	1.0E-05	mg/kg/day	100%	1.0E-05	mg/kg/day	No effects observed	3,000	PPRTV SL	January-13
	subchronic	8.0E-04	mg/kg/day	100%	8.0E-04	mg/kg/day	No effects observed	300/1	HEAST	January-13
Vanadium	chronic	5.0E-03	mg/kg/day	2.6%	1.3E-04	mg/kg/day	Kidney	3,000	RSL Users Guide	January-13
	subchronic	7.00E-04	mg/kg/day	2.60%	1.82E-05	mg/kg/day	Kidney	3000	PPRTV	January-13
Zinc	chronic	3.0E-01	mg/kg/day	100%	3.0E-01	mg/kg/day	Liver; decreased erythrocyte superoxide dismutase activity	3	IRIS	November-13
	subchronic	3.0E-01	mg/kg/day	100%	3.0E-01	mg/kg/day	Hematological	3	MRL	November-13
Sulfur dioxide	chronic	ND			ND					November-13
	subchronic	ND			ND					November-13

Table 4-5
Non-Cancer Toxicity Data - Oral/Dermal
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal (1)	Adjusted Dermal RfD (2)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfD: Target Organ(s)	
		Value	Units		Value	Units			Source	Date Verified

Notes:
In accordance with OSWER 9285.7-53, chronic RfDs are identified from the following heirarchy of sources:
Tier 1:
IRIS = Integrated Risk Information System: Obtained from: http://www.epa.gov/IRIS/
Tier 2:
PPRTV = Preliminary Peer-Reviewed Toxicity Value: Obtained from: http://hhpprtv.ornl.gov/
Tier 3:
HEAST= Health Effects Assessment Summary Tables Obtained from: USEPA Solid Waste and Emergency Response, FY 1997 Update. EPA-540-R-97-036. July 1997.
MRL = Minimum Risk Level (ATSDR: chronic MRLs):
PPRTV SL = Preliminary Peer-Reviewed Toxicity Value Screening Level Obtained from: http://hhpprtv.ornl.gov/
NCEA = National Center for Environmental Assessment:
RSL Users Guide - Regional Screening Levels Users Guide

Prepared By: KMW 11/14/2013
Checked By: BJR 11/21/2013
Revised By: KMW 5/15/14
Checked by: MJM 5/20/14
Revised By: LCG 4/10/2015
Checked by: MJM 4/10/2015

Subchronic RfDs are obtained from:
- PPRTV: provisional value
- ATSDR: Intermitent MRLs
- HEAST: subchronic RfDs
- Equal to chronic RfDs when no PPRTV, ATSDR or HEAST value is available

mg = milligram
kg = kilogram
ND = no data available
chronic = the chronic value is used as the subchronic RfD

(1) Values obtained from RAGS Volume 1 (Part E, Supplemental Guidance for Dermal Risk Assessment, Final) (USEPA, 2004)
Per this guidance, a value of 100% is used for analytes without published values.
(2) Adjusted Dermal RfD = Oral RfD x Oral to Dermal Adjustment Factor. Per RAGS Part E (USEPA, 2004), adjustments are only performed for chemicals that have an oral absorption efficiency of less than 50%.
Surrogates
Surrogate (1) - Value for acenaphthene used as a surrogate
Surrogate (2) - Value for pyrene used as a surrogate
Surrogate (3) - Value for total xylenes used as a surrogate

Table 4-6
Non-Cancer Toxicity Data - Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC (1)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units			Source	Date Verified
VOLATILES							
1,1,2,2-Tetrachloroethane	chronic	ND				IRIS	January-13
	subchronic	ND					January-13
1,1,2-Trichloroethane	chronic	2.0E-04	mg/m3	NOAEL	1,000	PPRTV	November-13
	subchronic	4.0E-03	mg/m3	NOAEL	1,000	PPRTV	November-13
1,1-Dichloroethane	chronic	5.0E-01	mg/m3	Kidney	1,000	HEAST97	November-13
	subchronic	5.0E+00	mg/m3	Kidney	100	HEAST97	November-13
1,2,3-Trichlorobenzene	chronic	ND					January-13
	subchronic	ND					January-13
1,2,4-Trichlorobenzene	chronic	2.0E-03	mg/m3	Urinary	3,000	PPRTV	January-13
	subchronic	2.0E-02	mg/m3	Urinary	300	PPRTV	January-13
1,2-Dichlorobenzene	chronic	2.0E-01	mg/m3	Body weight	1,000/1	HEAST97	January-13
	subchronic	2.0E+00	mg/m3	Body weight	100/1	HEAST97	January-13
1,2-Dichloroethane	chronic	7.0E-03	mg/m3	Nervous system	3,000	PPRTV	January-13
	subchronic	7.0E-02	mg/m3	Nervous system	300	PPRTV	January-13
1,2-Dichloroethene (total)	chronic	ND					November-13
	subchronic	ND					November-13
1,2-Dichloroethene (cis)	chronic	ND				IRIS	January-13
	subchronic	ND					January-13
1,2-Dichloroethene (trans)	chronic	6.0E-02	mg/m3	Lung; Liver	3,000	PPRTV	November-13
	subchronic	8.0E-01	mg/m3	Liver	1,000	MRL	November-13
1,2-Dichloropropane	chronic	4.0E-03	mg/m3	Respiratory system; hyperplasia of nasal mucosa	300/1	IRIS	May-14
	subchronic	3.3E-02	mg/m3	Respiratory system	1,000	MRL	May-14
1,2,4-Trimethylbenzene	chronic	7.0E-03	mg/m3	Blood; pulmonary lesions	3,000	PPRTV	November-13
	subchronic	7.0E-02	mg/m3	Blood; pulmonary lesions	300	PPRTV	November-13
1,3,5-Trimethylbenzene	chronic	ND					November-13
	subchronic	1.0E-02	mg/m3	Nervous system	3,000	PPRTV	November-13
Acetic acid, methyl ester (methyl acetate)	chronic	ND					November-13
	subchronic	1.0E-01	mg/m3			PPRTV	November-13
Acetone	chronic	3.1E+01	mg/m3	CNS	100	MRL	November-13
	subchronic	3.1E+01	mg/m3	CNS	100	MRL	November-13
1,3-Dichlorobenzene	chronic	ND				IRIS	January-13
	subchronic	ND					January-13
1,4-Dichlorobenzene	chronic	8.0E-01	mg/m3	Developmental; increased liver weight	100/1	IRIS	January-13
	subchronic	2.0E-01	mg/m3	Hepatic	100	MRL	January-13
Benzene	chronic	3.0E-02	mg/m3	Immune system; decreased lymphocyte count	300/1	IRIS	January-13
	subchronic	8.0E-02	mg/m3	Immune system; decreased lymphocyte count	100	PPRTV	January-13
Chlorobenzene	chronic	5.0E-02	mg/m3	Liver; kidney	1,000	PPRTV	January-13
	subchronic	5.0E-01	mg/m3	Liver; kidney	100	PPRTV	January-13
Chloroform	chronic	9.8E-02	mg/m3	Hepatic	100	MRL	November-13
	subchronic	2.4E-01	mg/m3	Hepatic	300	MRL	November-13
Ethanol	chronic	ND					November-13
	subchronic	ND					November-13
Ethylbenzene	chronic	1.0E+00	mg/m3	Developmental; developmental toxicity	300/1	IRIS	January-13
	subchronic	9.0E+00	mg/m3	ototoxicity	100	PPRTV	January-13
Methylene Chloride (Dichloromethane)	chronic	6.0E-01	mg/m3	Hepatic	30	IRIS	January-13
	subchronic	1.0E+00	mg/m3	Hepatic	90	MRL	January-13
Methyl-tert-butyl ether	chronic	3.0E+00	mg/m3	Liver and Kidney; increased weight, lesions	100/1	IRIS	November-13
	subchronic	2.5E+00	mg/m3	Liver and Kidney; increased weight, lesions	100/1	MRL	November-13
P-Isopropyltoluene	chronic	ND				PPRTV	January-13
	subchronic	ND				PPRTV	January-13
Tetrachloroethene	chronic	4.0E-02	mg/m3	Nervous system	100	MRL	January-13
	subchronic	4.0E-02	mg/m3	Nervous system		Chronic	January-13
Toluene	chronic	5.0E+00	mg/m3	CNS; neurological effects	10/1	IRIS	January-13
	subchronic	5.0E+00	mg/m3	CNS; neurological effects	10	PPRTV	January-13

Table 4-6
Non-Cancer Toxicity Data - Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC (1)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units			Source	Date Verified
Trichloroethene	chronic	2.0E-03	mg/m3	Heart malformations; immunotoxicity	100/10	IRIS	January-13
	subchronic	5.4E-01	mg/m3	Respiratory System	300	MRL	January-13
Vinyl Chloride	chronic	1.0E-01	mg/m3	Liver; liver cell polymorphism	30/1	IRIS	November-13
	subchronic	7.7E-02	mg/m3	Liver; liver cell polymorphism	30/1	MRL	November-13
Xylenes, m,p-	chronic	1.0E-01	mg/m3	CNS; impaired motor coordination	300/1	Surrogate (1)	January-13
	subchronic	4.0E-01	mg/m3	CNS; impaired motor coordination	100	Surrogate (1)	January-13
Xylenes, o-	chronic	1.0E-01	mg/m3	CNS; impaired motor coordination	300/1	Surrogate (1)	January-13
	subchronic	4.0E-01	mg/m3	CNS; impaired motor coordination	100	Surrogate (1)	January-13
Xylenes (total)	chronic	1.0E-01	mg/m3	CNS; impaired motor coordination	300/1	IRIS	January-13
	subchronic	4.0E-01	mg/m3	CNS; impaired motor coordination	100	PPRTV	January-13
1-Chlorobutane	chronic	ND				PPRTV	November-13
	subchronic	ND				PPRTV	November-13
2-Chlorotoluene	chronic	ND					November-13
	subchronic	8.0E-01				PPRTV	November-13
p-Chlorotoluene	chronic	ND					November-13
	subchronic	ND					November-13
2,2,4-Trimethylpentane	chronic	ND					November-13
	subchronic	ND					November-13
4-Ethyltoluene (p-Ethyltoluene)	chronic	ND					November-13
	subchronic	ND					November-13
3-Methyl hexane	chronic	ND					November-13
	subchronic	ND					November-13
Ethyl acetate	chronic	7.0E-02	mg/m3	Decreased body weight	3,000	PPRTV	November-13
	subchronic	7.0E-01	mg/m3	Decreased body weight	300	PPRTV	November-13
Dimethylsulfide	chronic	ND					November-13
	subchronic	ND					November-13
n-Heptane	chronic	ND					November-13
	subchronic	ND					November-13
t-Butyl Alcohol	chronic	ND					November-13
	subchronic	ND					November-13
SEMIVOLATILES							

Table 4-6
Non-Cancer Toxicity Data - Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC (1)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units			Source	Date Verified
1,4-Dioxane	chronic	3.0E-02	mg/m3	Liver	300	IRIS	November-13
	subchronic	7.2E-01	mg/m3	Respiratory system	30	MRL	November-13
2,4-Dimethylphenol	chronic	ND				IRIS	November-13
	subchronic	ND					
2-Methylnaphthalene	chronic	ND				IRIS	January-13
	subchronic	ND					January-13
3-Nitroanaline	chronic	ND				PPRTV	November-13
	subchronic	ND				PPRTV	November-13
Aniline	chronic	1.0E-03	mg/m3	Mild spleen toxicity	3,000/1	IRIS	November-13
	subchronic	1.0E-02	mg/m3	Spleen	300/1	HEAST97	November-13
Benzo(a)anthracene	chronic	ND				IRIS	January-13
	subchronic	ND				chronic	January-13
Benzo(a)pyrene	chronic	ND				IRIS	January-13
	subchronic	ND				chronic	January-13
Benzo(b)fluoranthene	chronic	ND				IRIS	January-13
	subchronic	ND				chronic	January-13
Bis(2-ethylhexyl)phthalate (BEHP)	chronic	ND				IRIS	November-13
	subchronic	ND				chronic	November-13
Biphenyl	chronic	ND				IRIS	January-13
	subchronic	ND					January-13
Cyclohexane, Methyl-	chronic	3.0E+00	mg/m3			HEAST	January-13
	subchronic	3.0E+00	mg/m3			Chronic	January-13
Dibenzo(a,h)anthracene	chronic	ND				IRIS	January-13
	subchronic	ND				chronic	January-13
Indeno(1,2,3-cd)pyrene	chronic	ND				IRIS	January-13
	subchronic	ND				chronic	January-13
Naphthalene	chronic	3.0E-03	mg/m3	Lung/Hyperplasia and metaplasia of epithelial cells	3,000/1	IRIS	January-13
	subchronic	3.0E-03	mg/m3	Lung/Hyperplasia and metaplasia of epithelial cells	3,000/1	IRIS	January-13
PESTICIDES/PCBs							
Aldrin	chronic	ND				IRIS	November-13
	subchronic	ND					November-13
Heptachlor Epoxide	chronic	ND				IRIS	November-13
	subchronic	ND					November-13

Table 4-6
Non-Cancer Toxicity Data - Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC (1)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units			Source	Date Verified
INORGANICS/METALS							
Aluminum	chronic	5.0E-03	mg/m3	LOAEL / CNS	300	PPRTV	January-13
	subchronic	5.0E-03	mg/m3	LOAEL / CNS	300	chronic	January-13
Antimony	chronic	ND				IRIS	January-13
	subchronic	ND					January-13
Arsenic	chronic	1.5E-05	mg/m3	Developmental; cardiovascular; CNS		CalEPA	January-13
	subchronic	1.5E-05	mg/m3	Developmental; cardiovascular; CNS		chronic	January-13
Barium	chronic	5.0E-04	mg/m3	Developmental; fetotoxicity	1,000	HEAST97	November-13
	subchronic	5.0E-03	mg/m3	Developmental; fetotoxicity	100	HEAST97	November-13
Beryllium	chronic	2.0E-05	mg/m3	Immune system and respriatory; sensitivity, CBD	10/1	IRIS	November-13
	subchronic	2.0E-05	mg/m3	Immune system and respriatory; sensitivity, CBD	10/1	chronic	November-13
Cadmium	chronic	1.0E-05	mg/m3	Renal	9	MRL	November-13
	subchronic	1.0E-05	mg/m3	Renal	9	Chronic	November-13
Chromium III	chronic	ND				IRIS	November-13
	subchronic	5.0E-03	mg/m3	Respiratory system	90	MRL	February-11
Chromium VI	chronic	1.0E-04	mg/m3	Lung; enzyme alterations	300/1	IRIS	December-10
	subchronic	5.0E-06	mg/m3	Respiratory system	100	MRL	February-11
Cobalt	chronic	6.0E-06	mg/m3	Respiratory tract / Lung / NOAEL	300	PPRTV	January-13
	subchronic	2.0E-05	mg/m3	Respiratory tract / Lung / NOAEL	100	PPRTV	January-13
Copper	chronic	ND				IRIS	January-13
	subchronic	ND					January-13
Iron	chronic	ND					November-13
	subchronic	ND					November-13
Lead	chronic	ND					November-13
	subchronic	ND					November-13
Manganese	chronic	5.0E-05	mg/m3	CNS; impairment of neurobehavioral function	1,000/1	IRIS	January-13
	subchronic	5.0E-05	mg/m3	CNS; impairment of neurobehavioral function	1,000/1	chronic	January-13
Mercury	chronic	3.0E-04	mg/m3	Respiratory System	30/1	IRIS	January-13
	subchronic	3.0E-05	mg/m3			Chronic	January-13
Nickel	chronic	9.0E-05	mg/m3	Respiratory system	30	MRL	November-13
	subchronic	2.0E-04	mg/m3	Respiratory system	30	MRL	November-13
Selenium	chronic	2.0E-02	mg/m3	Liver, CNS, Cardiovascular system		REL	November-13
	subchronic	2.0E-02	mg/m3	Liver, CNS, Cardiovascular system		Chronic	November-13
Silver	chronic	ND				IRIS	November-13
	subchronic	ND				chronic	December-10
Thallium	chronic	ND				IRIS	January-13
	subchronic	ND				chronic	January-13
Vanadium	chronic	1.0E-04	mg/m3	Respiratory	30	MRL	January-13
	subchronic	1.0E-04	mg/m3	Respiratory	30	Chronic	January-13
Zinc	chronic	ND					November-13
	subchronic	ND					November-13
Sulfur dioxide	chronic	ND					November-13
	subchronic	ND					November-13

Table 4-6
Non-Cancer Toxicity Data - Inhalation
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC (1)		Primary Target Organ or System / Critical Effect	Combined Uncertainty/Modifying Factors	RfC: Target Organ(s)	
		Value	Units			Source	Date Verified

Notes:
In accordance with OSWER 9285.7-53, chronic RfCs are identified from the following heirarchy of sources:
Tier 1:
IRIS = Integrated Risk Information System:
Tier 2:
PPRTV = Preliminary Peer-Reviewed Toxicity Value:
Tier 3:
HEAST= Health Effects Assessment Summary Tables
MRL = Minimum Risk Level (ATSDR: chronic MRLs):
CalEPA = California Environmental Protection Agency Toxicity Criteria Database

Subchronic RfCs are obtained from:
- PPRTV: provisional value
- ATSDR: Intermitent MRLs
- HEAST: subchronic RfDs
- Equal to chronic RfDs when no PPRTV, ATSDR or HEAST value is available

(1) - Inhalation non-cancer dose-response values are typically published as RfC values. RfC values may be converted to RfDs using the following equation (HEAST, 1997):
RfD (mg/kg-d) = RfC (mg/m^3) x 20 m^3/d / 70 kg, unless otherwise indicated

Surrogate (1) - Value for total xylenes used as a surrogate

Prepared By: KMW 11/14/2013
Checked By: BJR 11/21/2013
Revised By: KMW 5/15/14
Checked by: MJM 5/20/14
Revised By: LCG 4/10/2015
Checked by: MJM 4/10/2015

Table 5-1
Risk Summary Update Surface Soil Exposure Scenarios
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Exposure Area / Medium (Surface Soil)	Receptor	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Area 1				
Surface Soil (0-2 ft)	Adolescent Trespasser	Incidental Ingestion	3E-07	0.2
		Dermal Contact	9.E-08	0.009
	Adult Trespasser	Incidental Ingestion	2.E-07	0.06
		Dermal Contact	4.E-08	0.003
		Total Surface Soil Risk:	**6.E-07**	**0.2**
		Cumulative Receptor Risk:	**6.E-07**	**0.2**
Surface Soil (0-2 ft)	Outdoor Worker	Incidental Ingestion	2.E-06	0.3
		Dermal Contact	7.E-07	0.02
		Dust Inhalation	2.E-09	0.0004
		Total Receptor Surface Soil Risk:	**2.E-06**	**0.3**
Groundwater (Wells in CPS Plume)	Outdoor Worker	Incidental Ingestion	4.E-04	48
		Total Receptor GroundwaterRisk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48.2**
Surface Soil (0-2 ft)	Indoor Worker	Incidental Ingestion	1.E-06	0.2
		Dermal Contact	3.E-07	0.009
		Total Receptor Surface Soil Risk:	**1.E-06**	**0.2**
Groundwater (Wells in CPS Plume)	Indoor Worker	Incidental Ingestion	4.E-04	48
		Total Receptor GroundwaterRisk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48.4**
Surface Soil (0-2 ft)	Resident Child	Incidental Ingestion	1.E-05	4
		Dermal Contact	3.E-06	0.1
	Resident Adult	Incidental Ingestion	3.E-06	0.5
		Dermal Contact	6.E-07	0.022
		Total Surface Soil Risk:	**2.E-05**	**4**
Groundwater (CPS Plume)	Resident Child	Incidental Ingestion	7.E-04	315
		Dermal Contact	5.E-05	13
		Inhalation of Volatiles	1.E-03	695
	Resident Adult	Incidental Ingestion	9.E-04	135
		Dermal Contact	4.E-05	5
		Inhalation of Volatiles	1.E-03	161
		Total Receptor Groundwater Risk:	**4.E-03**	**1023**
		Cumulative Receptor Risk:	**4.E-03**	**1027**

Table 5-1
Risk Summary Update Surface Soil Exposure Scenarios
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Exposure Area / Medium (Surface Soil)	Receptor	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Area 2				
Surface Soil (0-2 ft)	Adolescent Trespasser	Incidental Ingestion	5.E-07	0.08
		Dermal Contact	3.E-07	0.0009
	Adult Trespasser	Incidental Ingestion	2.E-07	0.03
		Dermal Contact	9.E-08	0.0003
		Total Surface Soil Risk:	**1.E-06**	**0.1**
		Cumulative Receptor Risk:	**1.E-06**	**0.1**
Surface Soil (0-2 ft)	Outdoor Worker	Incidental Ingestion	2.E-06	0.1
		Dermal Contact	2.E-06	0.002
		Dust Inhalation	3.E-09	0.0008
		Total Receptor Surface Soil Risk:	**4.E-06**	**0.2**
Groundwater (Wells in CPS Plume)	Outdoor Worker	Incidental Ingestion	4.E-04	48
		Total Receptor GroundwaterRisk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48.2**
Surface Soil (0-2 ft)	Indoor Worker	Incidental Ingestion	1.E-06	0.08
		Dermal Contact	6.E-07	0.0009
		Total Receptor Surface Soil Risk:	**2.E-06**	**0.1**
Groundwater (Wells in CPS Plume)	Indoor Worker	Incidental Ingestion	4.E-04	48
		Total Receptor GroundwaterRisk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface Soil (0-2 ft)	Resident Child	Incidental Ingestion	3.E-05	2
		Dermal Contact	1.E-05	0.01
	Resident Adult	Incidental Ingestion	4.E-06	0.2
		Dermal Contact	1.E-06	0.002
		Total Surface Soil Risk:	**4.E-05**	**2.E+00**
Groundwater (CPS Plume)	Resident Child	Incidental Ingestion	7.E-04	315
		Dermal Contact	5.E-05	13
		Inhalation of Volatiles	1.E-03	695
	Resident Adult	Incidental Ingestion	9.E-04	128
		Dermal Contact	4.E-05	5
		Inhalation of Volatiles	1.E-03	161
		Total Receptor Groundwater Risk:	**4.E-03**	**1023**
		Cumulative Receptor Risk:	**4.E-03**	**1025**

Table 5-1
Risk Summary Update Surface Soil Exposure Scenarios
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Exposure Area / Medium (Surface Soil)	Receptor	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Area 3				
Surface Soil (0-2 ft)	Adolescent Trespasser	Incidental Ingestion	2.E-07	0.007
		Dermal Contact	5.E-08	0.0008
	Adult Trespasser	Incidental Ingestion	1.E-07	0.003
		Dermal Contact	3.E-08	0.0003
		Total Surface Soil Risk:	**4.E-07**	**0.007**
		Cumulative Receptor Risk:	**4.E-07**	**0.007**
Surface Soil (0-2 ft)	Outdoor Worker	Incidental Ingestion	1.E-06	0.01
		Dermal Contact	5.E-07	0.002
		Dust Inhalation	9.E-10	0.0002
		Total Receptor Surface Soil Risk:	**2.E-06**	**0.02**
Groundwater (Wells in CPS Plume)	Outdoor Worker	Incidental Ingestion	4.E-04	48
		Total Receptor GroundwaterRisk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface Soil (0-2 ft)	Indoor Worker	Incidental Ingestion	7.E-07	0.007
		Dermal Contact	2.E-07	0.0009
		Total Receptor Surface Soil Risk:	**9.E-07**	**0.008**
Groundwater (Wells in CPS Plume)	Indoor Worker	Incidental Ingestion	4.E-04	48
		Total Receptor GroundwaterRisk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface Soil (0-2 ft)	Resident Child	Incidental Ingestion	6.E-06	0.2
		Dermal Contact	1.E-06	0.01
	Resident Adult	Incidental Ingestion	2.E-06	0.02
		Dermal Contact	4.E-07	0.002
		Total Surface Soil Risk:	**1.E-05**	**2.E-01**
Groundwater (Wells in CPS Plume)	Resident Child	Incidental Ingestion	7.E-04	315
		Dermal Contact	5.E-05	13
		Inhalation of Volatiles	1.E-03	695
	Resident Adult	Incidental Ingestion	9E-04	128
		Dermal Contact	4.E-05	5
		Inhalation of Volatiles	1.E-03	161
		Total Receptor Groundwater Risk:	**4.E-03**	**1023**
		Cumulative Receptor Risk:	**4.E-03**	**1023**

Prepared by: LCG 5/21/2014
Checked by: MJM 8/5/14
Revised by: LCG 4/10/2015
Checked by: BJR 4/13/2015

Table 5-2
Risk Summary Update - Combined Soil Exposure Scenarios
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Exposure Area / Medium (Surface and Subsurface Soil)	Receptor	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Area 1				
Surface and Subsurface Soil (0-10 ft)	Adolescent Trespasser	Incidental Ingestion	7.E-07	0.2
		Dermal Contact	1.E-07	0.008
	Adult Trespasser	Incidental Ingestion	5.E-07	0.07
		Dermal Contact	7.E-08	0.003
		Total Surface and Subsurface Soil Soil Risk:	**1.E-06**	**0.2**
		Cumulative Receptor Risk:	**1.E-06**	**0.2**
Surface and Subsurface Soil (0-10 ft)	Outdoor Worker	Incidental Ingestion	5.E-06	0.3
		Dermal Contact	1.E-06	0.02
		Dust Inhalation	3.E-09	0.0005
		Total Surface and Subsurface Soil Soil Risk:	**6.E-06**	**0.4**
Groundwater (Wells in CPS Plume)	Outdoor Worker	Incidental Ingestion	4.E-04	48
		Total Groundwater Risk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface and Subsurface Soil (0-10 ft)	Indoor Worker	Incidental Ingestion	3.E-06	0.2
		Dermal Contact	5.E-07	0.009
		Total Surface and Subsurface Soil Soil Risk:	**3.E-06**	**0.2**
Groundwater (Wells in CPS Plume)	Indoor Worker	Incidental Ingestion	4.E-04	48
		Total Groundwater Risk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface and Subsurface Soil (0-10 ft)	Resident Child	Incidental Ingestion	2.E-05	5
		Dermal Contact	2.E-06	0.1
	Resident Adult	Incidental Ingestion	8.E-06	0.5
		Dermal Contact	1.E-06	0.02
		Total Surface and Subsurface Soil Soil Risk:	**3.E-05**	**5**
Groundwater (Wells in CPS Plume)	Resident Child	Incidental Ingestion	7.E-04	315
		Dermal Contact	5.E-05	13
		Inhalation of Volatiles	1.E-03	695
	Resident Adult	Incidental Ingestion	9.E-04	135
		Dermal Contact	4.E-05	5
		Inhalation of Volatiles	1.E-03	161
		Total Groundwater Risk:	**4.E-03**	**1023**
		Cumulative Receptor Risk:	**4.E-03**	**1028**
Shallow Subsurface Soil (0-10 ft)	Construction Worker	Incidental Ingestion	7.E-07	1
		Dermal Contact	8.E-08	0.02
		Dust Inhalation	1.E-09	0.005
		Total Surface and Subsurface Soil Soil Risk:	**8.E-07**	**1**
Groundwater (Shallow)	Construction Worker	Incidental Ingestion	1.E-08	0.002
		Dermal Contact	7.E-07	0.2
		Inhalation of Volatiles	1.E-03	229
		Total Groundwater Risk:	**1.E-03**	**230**
		Cumulative Receptor Risk:	**1.E-03**	**231**

Table 5-2
Risk Summary Update - Combined Soil Exposure Scenarios
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Exposure Area / Medium (Surface and Subsurface Soil)	Receptor	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Area 2				
Surface and Subsurface Soil (0-10 ft)	Adolescent Trespasser	Incidental Ingestion	4.E-07	0.07
		Dermal Contact	2.E-07	0.001
	Adult Trespasser	Incidental Ingestion	2.E-07	0.03
		Dermal Contact	8.E-08	0.0004
		Total Surface and Subsurface Soil Soil Risk:	**1.E-06**	**0.1**
		Cumulative Receptor Risk:	**1.E-06**	**0.1**
Surface and Subsurface Soil (0-10 ft)	Outdoor Worker	Incidental Ingestion	2.E-06	0.1
		Dermal Contact	1E-06	0.004
		Dust Inhalation	3.E-09	0.0008
		Total Surface and Subsurface Soil Soil Risk:	**4.E-06**	**0.2**
Groundwater (Wells in CPS Plume)	Outdoor Worker	Incidental Ingestion	4.E-04	48
		Total Groundwater Risk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface and Subsurface Soil (0-10 ft)	Indoor Worker	Incidental Ingestion	1.E-06	0.07
		Dermal Contact	5.E-07	0.001
		Total Surface and Subsurface Soil Soil Risk:	**2.E-06**	**0.08**
Groundwater (Wells in CPS Plume)	Indoor Worker	Incidental Ingestion	4.E-04	48
		Total Groundwater Risk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface and Subsurface Soil (0-10 ft)	Resident Child	Incidental Ingestion	2.E-05	2
		Dermal Contact	6.E-06	0.02
	Resident Adult	Incidental Ingestion	4.E-06	0.2
		Dermal Contact	1.E-06	0.003
		Total Surface and Subsurface Soil Soil Risk:	**3.E-05**	**2**
Groundwater (Wells in CPS Plume)	Resident Child	Incidental Ingestion	7.E-04	299
		Dermal Contact	5.E-05	13
		Inhalation of Volatiles	1.E-03	695
	Resident Adult	Incidental Ingestion	9.E-04	128
		Dermal Contact	4.E-05	5
		Inhalation of Volatiles	1.E-03	161
		Total Groundwater Risk:	**4.E-03**	**1007**
		Cumulative Receptor Risk:	**4.E-03**	**1009**
Shallow Subsurface Soil (0-10 ft)	Construction Worker	Incidental Ingestion	4.E-07	0.4
		Dermal Contact	8.E-08	0.006
		Dust Inhalation	1.E-09	0.009
		Total Surface and Subsurface Soil Soil Risk:	**5.E-07**	**0.4**
Groundwater (Shallow)	Construction Worker	Incidental Ingestion	5.E-12	0.000006
		Dermal Contact	2.E-09	0.0004
		Inhalation of Volatiles	6.E-07	0.08
		Total Groundwater Risk:	**6.E-07**	**0.1**
		Cumulative Receptor Risk:	**1.E-06**	**0.5**

Table 5-2
Risk Summary Update - Combined Soil Exposure Scenarios
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

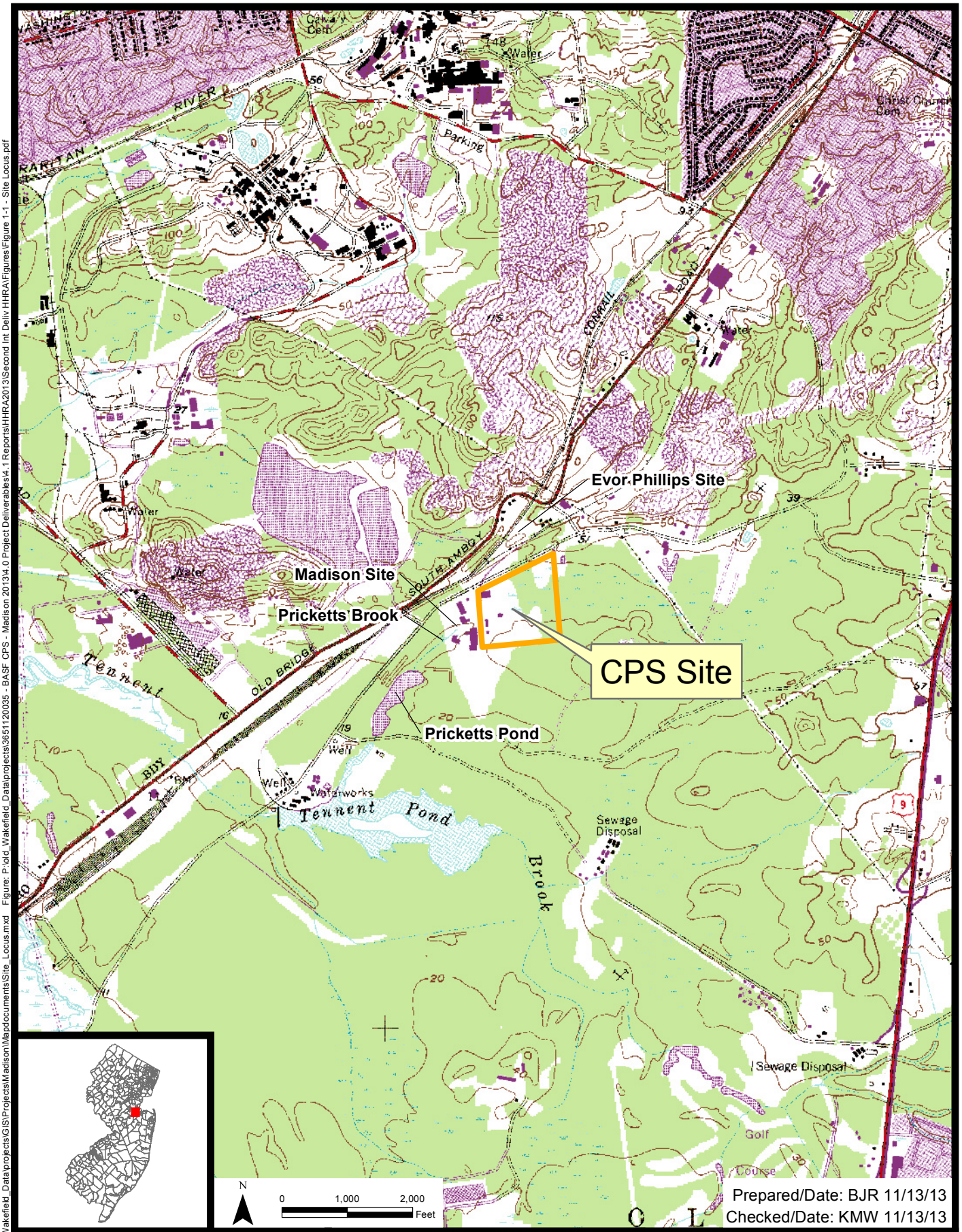
Exposure Area / Medium (Surface and Subsurface Soil)	Receptor	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Area 3				
Surface and Subsurface Soil (0-10 ft)	Adolescent Trespasser	Incidental Ingestion	3.E-07	0.01
		Dermal Contact	7.E-08	0.002
	Adult Trespasser	Incidental Ingestion	2.E-07	0.005
		Dermal Contact	4.E-08	0.0006
		Total Surface and Subsurface Soil Soil Risk:	**5.E-07**	**0.02**
		Cumulative Receptor Risk:	**5.E-07**	**0.02**
Surface and Subsurface Soil (0-10 ft)	Outdoor Worker	Incidental Ingestion	2.E-06	0.03
		Dermal Contact	7.E-07	0.005
		Dust Inhalation	2.E-09	0.0003
		Total Surface and Subsurface Soil Soil Risk:	**3.E-06**	**0.03**
Groundwater (Wells in CPS Plume)	Outdoor Worker	Incidental Ingestion	4.E-04	48
		Total Groundwater Risk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface and Subsurface Soil (0-10 ft)	Indoor Worker	Incidental Ingestion	1.E-06	0.01
		Dermal Contact	3.E-07	0.002
		Total Surface and Subsurface Soil Soil Risk:	**1.E-06**	**0.02**
Groundwater (Wells in CPS Plume)	Indoor Worker	Incidental Ingestion	4.E-04	48
		Total Groundwater Risk:	**4E-04**	**48**
		Cumulative Receptor Risk:	**4.E-04**	**48**
Surface and Subsurface Soil (0-10 ft)	Resident Child	Incidental Ingestion	8.E-06	0.4
		Dermal Contact	1.E-06	0.03
	Resident Adult	Incidental Ingestion	3.E-06	0.04
		Dermal Contact	6.E-07	0.005
		Total Surface and Subsurface Soil Soil Risk:	**1.E-05**	**0.4**
Groundwater (Wells in CPS Plume)	Resident Child	Incidental Ingestion	7.E-04	315
		Dermal Contact	5.E-05	13
		Inhalation of Volatiles	1.E-03	695
	Resident Adult	Incidental Ingestion	9.E-04	135
		Dermal Contact	4.E-05	5
		Inhalation of Volatiles	1.E-03	161
		Total Groundwater Risk:	**4.E-03**	**1023**
		Cumulative Receptor Risk:	**4.E-03**	**1023**
Shallow Subsurface Soil (0-10 ft)	Construction Worker	Incidental Ingestion	3.E-07	0.3
		Dermal Contact	4.E-08	0.008
		Dust Inhalation	7.E-10	0.003
		Total Surface and Subsurface Soil Soil Risk:	**3.E-07**	**0.3**
Groundwater (Shallow)	Construction Worker	Incidental Ingestion	5.E-14	0.000000006
		Dermal Contact	--	--
		Inhalation of Volatiles	6.E-10	0.00007
		Total Groundwater Risk:	**6.E-10**	**0.00007**
		Cumulative Receptor Risk:	**3.E-07**	**0.3**

Table 5-2
Risk Summary Update - Combined Soil Exposure Scenarios
Baseline Human Health Risk Assessment
CPS Madison Superfund Site
Old Bridge, New Jersey

Exposure Area / Medium (Surface and Subsurface Soil)	Receptor	Exposure Route	Excess Lifetime Cancer Risk	Hazard Index
Sewer Line				
Area 1				
Shallow Subsurface Soil (0-10 ft)	Construction Worker	Incidental Ingestion	4.E-07	0.4
		Dermal Contact	5.E-08	0.007
		Dust Inhalation	1.E-09	0.006
	Total Surface and Subsurface Soil Soil Risk:		**4.E-07**	**0.40**
Groundwater (Shallow)	Construction Worker	Incidental Ingestion	1.E-08	0.002
		Dermal Contact	7.E-07	0.2
		Inhalation of Volatiles	1.E-03	229
		Total Groundwater Risk:	**1.E-03**	**230**
		Total Receptor Risk:	**1.E-03**	**230**
Area 2				
Shallow Subsurface Soil (0-10 ft)	Construction Worker	Incidental Ingestion	4.E-07	0.4
		Dermal Contact	5.E-08	0.007
		Dust Inhalation	1.E-09	0.006
	Total Surface and Subsurface Soil Soil Risk:		**4.E-07**	**0.4**
Groundwater (Shallow)	Construction Worker	Incidental Ingestion	5.E-12	0.000006
		Dermal Contact	2.E-09	0.0004
		Inhalation of Volatiles	6.E-07	0.08
		Total Groundwater Risk:	**6.E-07**	**0.08**
		Total Receptor Risk:	**1.E-06**	**0.5**
Area 3				
Shallow Subsurface Soil (0-10 ft)	Construction Worker	Incidental Ingestion	4.E-07	0.4
		Dermal Contact	5.E-08	0.007
		Dust Inhalation	1.E-09	0.006
	Total Surface and Subsurface Soil Soil Risk:		**4.E-07**	**0.4**
Groundwater (Shallow)	Construction Worker	Incidental Ingestion	5.E-14	0.000000006
		Dermal Contact	--	--
		Inhalation of Volatiles	6.E-10	0.00007
		Total Groundwater Risk:	**6.E-10**	**0.00007**
		Total Receptor Risk:	**4.E-07**	**0.4**

Prepared by: LCG 5/21/2014
Checked by: MJM 8/5/14
Revised by: LCG 4/10/2015
Checked by: BJR 4/13/2015

Figures



Prepared/Date: BJR 11/13/13
Checked/Date: KMW 11/13/13

CPS/Madison Superfund Site
Old Bridge, New Jersey

amec

Figure 1-1
Site Locus

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Figure 1-2
Site Plan

Legend

Approximate Property Boundary

N

0 200 400 Feet

Prepared by BJR	Checked by KMW

CPS/Madison Superfund Site
Old Bridge, New Jersey

AMEC Environment & Infrastructure
107 Audubon Road
Wakefield, MA 01880

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Figure 1-3
Site Layout

Legend

Approximate Sewer Line

Exposure Areas

N

0 100 200 Feet

Prepared/Date: BJR 12/16/13 | Checked/Date: KMW 12/16/13

CPS/Madison Superfund Site
Old Bridge, New Jersey

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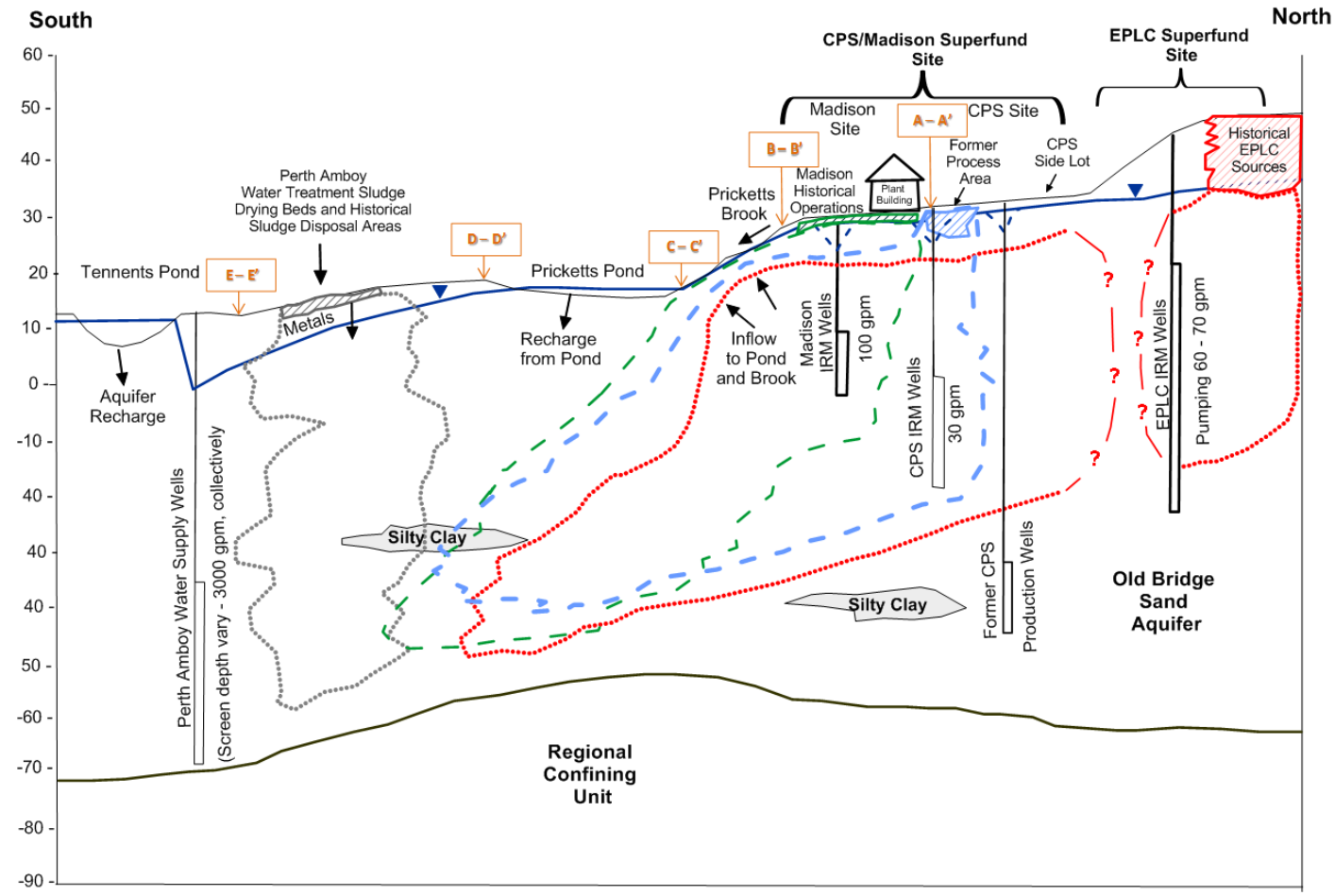
AMEC Environment & Infrastructure
107 Audubon Road, Suite 301
Wakefield, MA 01880

Document: P:\old_Wakefield_Data\projects\GIS\Projects\Madison\Mapdocuments\CPS_Madison8x11P.mxd PDF: P:\old_Wakefield_Data\projects\3651120035 - BASF CPS - Madison 2013\4.0 Project Deliverables\4.1 Reports\HHRA2013\Second Int Deliv HHRA\Figures\Figure 1-3 - Site Layout.pdf

Figure 1-3a showing surface water drainage across the CPS property. Both features support water only during significant storm events and during high groundwater table conditions.

Figure 1-4 - Conceptual Site Model



Legend

*Hatched areas show approximate source areas contributing to groundwater contamination

*Dashed outlines show generated representation of the locations of the dissolved phase contaminant plumes emanating from the source areas

*Potential source areas and plume configurations are shown in red for EPLC (primarily chlorinated VOCs); blue for CPS (primarily benzene, chlorobenzene and 1,2,4-trichlorobenzene) and green for Madison Industries (metals, primarily zinc) impacts

*Approximate locations of plume transect cross-sections are shown (e.g., (E-E'))

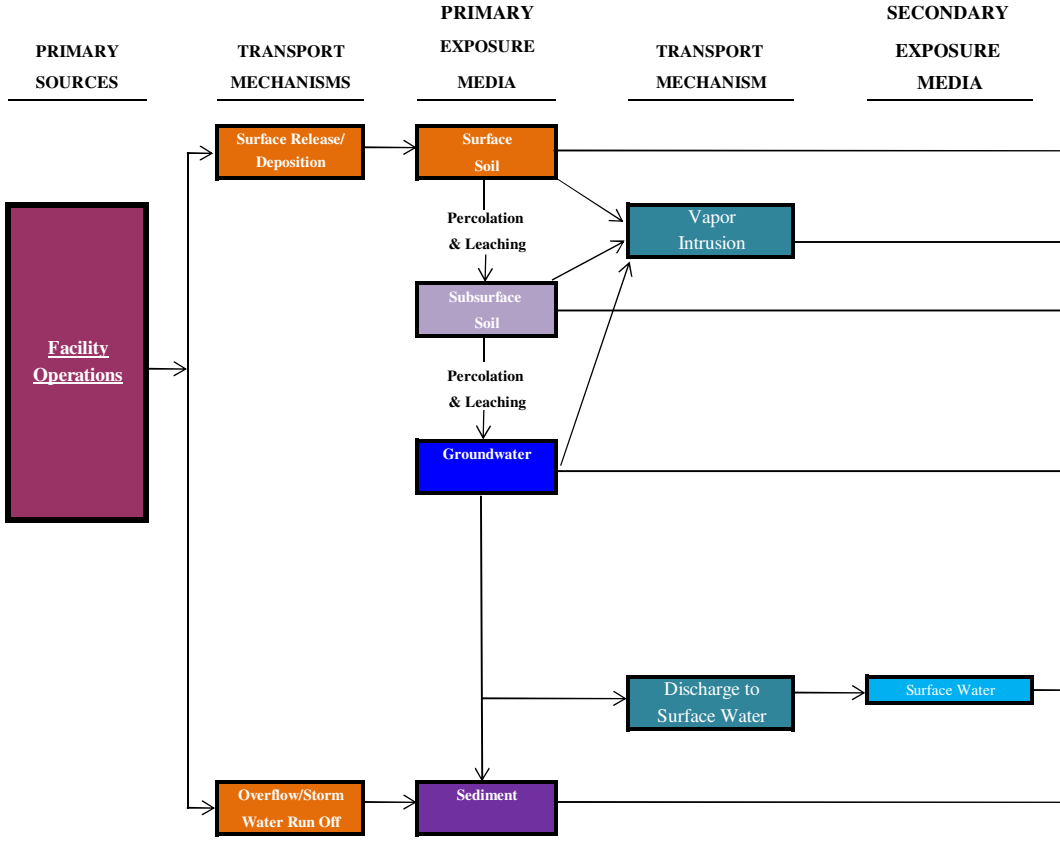
FIGURE 16
SIMPLIFIED CROSS-SECTION ILLUSTRATING KEY FEATURES OF THE CONCEPTUAL SITE MODEL

CPS/MADISON – OLD BRIDGE, NEW JERSEY

PRINCETON GEOSCIENCE, INC.
15 Vandeventer Ave. • Princeton, NJ 08542
tel: 609.279.0008 • www.princetongeoscience.com

SCALE:	See Map
DATE:	9/18/2011
PREPARED BY:	L.C.
CHECKED BY:	J.P.
PROJECT NO.:	08104
FILE NAME:	Figure 16 - CSM

Figure 1-5
Conceptual Site Model
Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ



	RECEPTORS							
	CURRENT	FUTURE						
Exposure Route	Trespasser (Ages 12-18)	Trespasser (Ages 12-18)	Indoor Worker	Outdoor Worker	Const. Workers	Utility Worker	Resident (Adult)	Resident (Ages <6)
Surface Soil – Ingestion	●	●	●	●	●	●	●	●
Surface Soil – Dermal Contact	●	●	●	●	●	●	●	●
Surface Soil – Inhalation	o	o	o	●	●	●	o	o
Vapor Intrusion – Inhalation	o	o	●	o	o	o	o	o
Subsurface Soil – Ingestion	x	●	●	●	●	●	●	●
Subsurface Soil – Dermal Contact	x	●	●	●	●	●	●	●
Subsurface Soil – Inhalation	x	o	o	●	●	●	o	o
Groundwater – Ingestion	x	x	●	●	●	●	●	●
Groundwater – Dermal Contact	x	x	●	●	●	●	●	●
Groundwater – Inhalation	x	x	●	●	●	●	●	●
Surface Water – Ingestion	o	o	x	x	x	x	x	x
Surface Water – Dermal	o	o	x	x	x	x	x	x
Sediment – Ingestion	o	o	x	x	x	x	x	x
Sediment – Dermal Contact	o	o	x	x	x	x	x	x

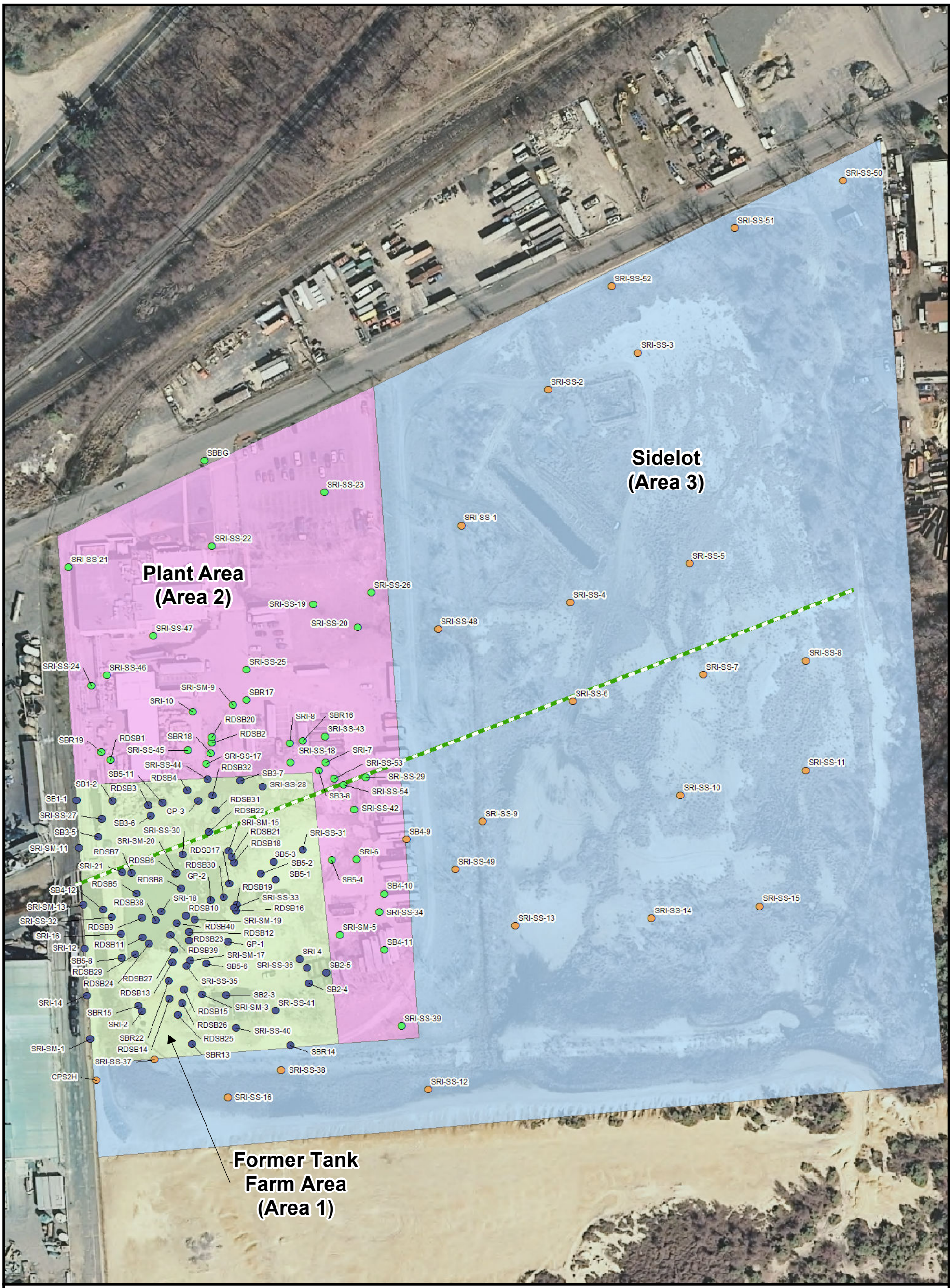
→ *Indicates a potentially complete exposure pathway*

● *Indicates an exposure route that may be complete in the exposure pathway*

o *Indicates an exposure route that may be complete in the exposure pathway but likely to be minimal risk; not evaluated quantitatively*

x *Indicates an exposure route that would not be complete in the exposure pathway, not evaluated*

Prepared by/ Date: KMW 11/18/13
Checked by/ Date: BJR 12/16/2013



Legend

- Approximate Sewer Line
- Area 1 Soil Samples
- Area 2 Soil Samples
- Area 3 Soil Samples
- Area 1
- Area 2
- Area 3

N

0 65 130 Feet

Prepared by BJR | Checked by KMW

Figure 1-6
Exposure Areas and Soil Sample Locations

CPS/Madison Superfund Site
Old Bridge, New Jersey

AMEC Environment & Infrastructure
107 Audubon Road
Wakefield, MA 01880

Document: P:\old_Wakefield_Data\projects\GIS\Projects\Madison\Mapdocuments\CPS_Madison11x17_P.mxd PDF: P:\old_Wakefield_Data\projects\3651120035 - BASF CPS - Madison 2013\4.0 Project Deliverables\4.1 Reports\HHRA2013\Second Int Deliv HHRA\Figures\Figure 1-6 - Exposure Areas and Soil Sample Locations.pdf

Legend

- Soil Gas Sampling Location (Sub-Slab)
- Indoor Air Sampling Location
- Background Air Sampling Location
- Approximate Property Boundary

N

0 100 200 Feet

Figure 1-7
Soil Gas and Indoor Air Sampling Locations

CPS/Madison Superfund Site
Old Bridge, New Jersey

amec
AMEC Environment & Infrastructure
107 Audubon Road, Suite 301
Wakefield, MA 01880

Prepared/Date: BJR 11/21/13 | Checked/Date: KMW 11/21/13

Document: P:\GIS\Projects\Madison\Mapdocuments\CPS_Madison8x11P.mxd PDF: P:\old_Wakefield_Data\projects\36511120035 - BASF CPS - Madison 2013\4.0 Project Deliverables\4.1 Reports\HHRA2013\Second Int Deliv HHRA\Figures\Figure 1-7 - Soil Gas and Indoor Air Sampling Locations.pdf

Legend

Shallow Groundwater Location

Exposure Areas

N

0 100 200 Feet

Figure 1-8
Shallow Groundwater Sampling Locations Used in Risk Assessment

CPS/Madison Superfund Site
Old Bridge, New Jersey

AMEC Environment & Infrastructure
107 Audubon Road, Suite 301
Wakefield, MA 01880

Prepared/Date: BJR 11/21/13 | Checked/Date: KMW 11/21/13

Document: P:\GIS\Projects\Madison\Mapdocuments\CPS_Madison8x11P.mxd PDF: P:\old_Wakefield_Data\projects\36511120035 - BASF CPS - Madison 2013\4.0 Project Deliverables\4.1 Reports\HHRA2013\Second Int Deliv HHRA\Figures\Figure 1-8 - Shallow Groundwater Locations.pdf

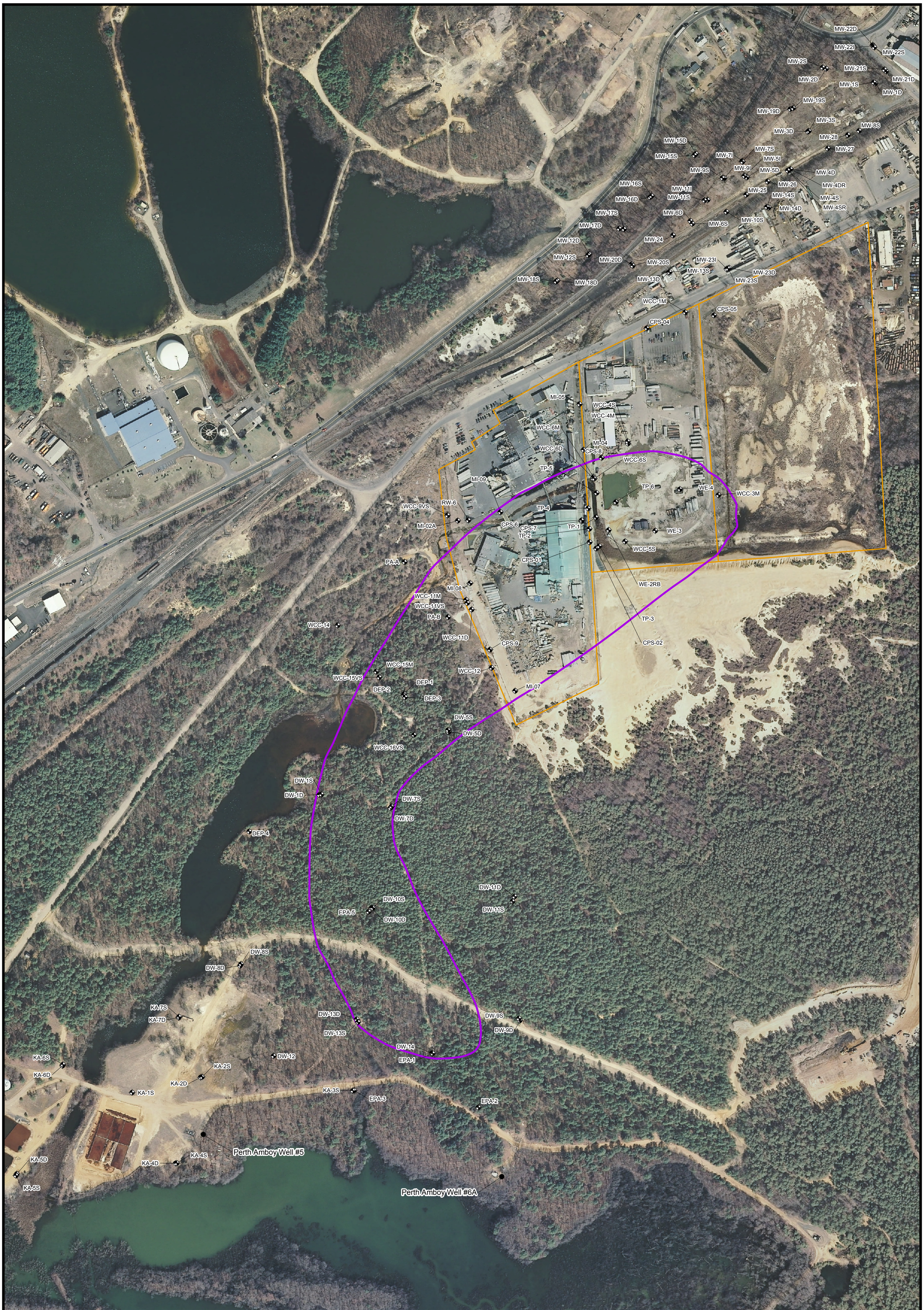


Figure 1-9
Groundwater Locations

Legend

- Monitoring Well
- GroundwaterPlume
- Approximate Property Line

0 90 180
Feet

N

Prepared by BJR | Checked by XXX

CPS/Madison Superfund Site
Old Bridge, New Jersey

amec
AMEC Environment & Infrastructure
2 Robbins Road
Westford, MA 01886

Document: P:\GIS\Projects\Madison\Mapdocuments\CPS_Madison_GW_Locs_22x34P.mxd PDF: P:\old_Wakefield_Data\projects\3651120035 - BASF CPS - Madison 2013\4.0 Project Deliverables\4.1 Reports\HHRA2013\Second Int Deliv HHRA\Figures\Figure 1-9 - Groundwater Locations.pdf 2/17/2014 12:39 PM brian.roden

ATTACHMENT A
ANALYTICAL DATA USED IN THE BHHRA

(PROVIDED ON CD)

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection			Range or Reporting Limits for Non-Detects			Range of Detected Concentrations			Average Excluding 0 ND
Semivolatile Organics (mg/Kg)										
1,1,1,2-TETRACHLOROETHANE	0	/	119	0.08427	:	11.08949				0.449063655
1,1,1-TRICHLOROETHANE	1	/	214	0	:	8.40655	0.24913	-	0.24913	0.300550337
1,1,2,2-TETRACHLOROETHANE	14	/	214	0	:	16.45537	0.009	-	170	2.27069311
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0	/	14	0.002	:	1.2				0.057214286
1,1,2-TRICHLOROETHANE	5	/	214	0	:	10.73176	0.002	-	1.58992	0.354568067
1,1-DICHLOROETHANE	0	/	214	0	:	5.8				0.218376472
1,1-DICHLOROETHYLENE	0	/	214	0	:	15.38219				0.42583862
1,1-DICHLOROPROPYLENE	0	/	30	0.06116	:	8.04882				0.792570333
1,2,3-TRICHLOROBENZENE	20	/	44	0.001	:	7.6911	0.08018	-	450	28.12981068
1,2,3-TRICHLOROPROPANE	0	/	30	0.05573	:	7.33337				0.7221195
1,2,4-TRICHLOROBENZENE	35	/	74	0.001	:	8.04882	0.001	-	1145.4937	80.51971101
1,2,4-TRIMETHYLBENZENE	8	/	30	0.05377	:	6.79678	0.05242	-	4.20417	0.854261167
1,2-CIS-DICHLOROETHYLENE	34	/	163	0.001	:	5.36588	0.0365	-	150	2.478641472
1,2-DIBROMO-3-CHLOROPROPANE	0	/	74	0.002	:	47.39862				1.980814054
1,2-DIBROMOETHANE	1	/	74	0.001	:	7.6911	0.14993	-	0.14993	0.352749392
1,2-DICHLOROBENZENE	103	/	215	0	:	2	0.004	-	8700	128.3152191
1,2-DICHLOROETHANE	23	/	221	0	:	5.90247	0.011	-	45	1.187339024
1,2-DICHLOROETHYLENE	2	/	35	0	:	0	0.005	-	0.015	0.01
1,2-DICHLOROPROPANE	3	/	210	0	:	10.19517	0.60781	-	13	0.41015478
1,2-TRANS-DICHLOROETHYLENE	9	/	199	0	:	9.83745	0.095	-	2	0.349263129
1,3,5-TRIMETHYLBENZENE	5	/	30	0.06933	:	8.76427	0.03468	-	1.23589	0.923031833
1,3-CIS-DICHLOROPROPYLENE	0	/	210	0	:	7.51223				0.289512453
1,3-DICHLOROBENZENE	44	/	215	0	:	6.43906	0.0037	-	27	0.621041445
1,3-DICHLOROPROPANE	1	/	30	0.07747	:	10.19517	0.26973	-	0.26973	1.010314333
1,3-TRANS-DICHLOROPROPYLENE	0	/	214	0	:	5.8				0.244309264
1,4-DICHLOROBENZENE	93	/	215	0	:	6.79678	0.003	-	220	4.23522112
1,4-DIOXANE	0	/	14	0.074	:	41				1.965607143
1-CHLOROBUTANE	13	/	30	0.06509	:	6.48545	0.10778	-	62.8631	4.899194167
2,2-DICHLOROPROPANE	0	/	30	0.07611	:	10.01631				0.986309333
2-CHLOROETHYL VINYL ETHER	0	/	27	0	:	0				
2-CHLOROTOLUENE	5	/	30	0.08631	:	10.91063	0.12127	-	0.37749	1.114924333
2-HEXANONE	0	/	82	0	:	10.91063				0.759856818
3-CHLOROPROPENE	0	/	30	0.07068	:	9.30086				0.915859167
ACETONE	79	/	218	0	:	41	0.0044	-	34	2.736047255
ACROLEIN	0	/	74	0	:	39				1.491204545
ACRYLONITRILE	1	/	193	0	:	31.30098	0.40025	-	0.40025	1.153591442
BENZENE	70	/	213	0	:	4.11384	0.001	-	98	1.859691506
BROMOBENZENE	1	/	30	0.07068	:	9.30086	0.23754	-	0.23754	0.921406
BROMOCHLOROMETHANE	0	/	133	0.001	:	29.15462				0.805973346
BROMOFORM	0	/	214	0	:	8.40655				0.29941638
CARBON DISULFIDE	5	/	105	0	:	6.61792	0.001	-	0.0059	0.3047328
CARBON TETRACHLORIDE	0	/	214	0	:	8.58541				0.302657945
CHLOROBENZENE	108	/	221	0	:	8.76427	0.001	-	310	4.061799866
CHLORODIBROMOMETHANE	0	/	214	0	:	5.90247				0.254034018
CHLOROETHANE	0	/	214	0	:	18.06513				0.62261273
CHLOROFORM	2	/	214	0	:	5.90247	0.008	-	0.27055	0.255462914
CYCLOHEXANE	5	/	14	0.001	:	0.073	0.008	-	53	3.833464286
CYCLOHEXANE, METHYL-	5	/	14	0.001	:	0.073	0.002	-	210	15.10582143
DICHLOROBROMOMETHANE	1	/	210	0	:	5.8	0.17226	-	0.17226	0.247145283
DICHLORODIFLUOROMETHANE	0	/	74	0.002	:	7.86996				0.402813851
DIETHYL ETHER	0	/	30	0.07475	:	9.83745				0.9686965
ETHYL METHACRYLATE	0	/	30	0.07883	:	10.37404				1.021534833

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection			Range or Reporting Limits for Non-Detects			Range of Detected Concentrations			Average Excluding 0 ND
ETHYLBENZENE	115	/	221	0	:	3.01671	0.0025	-	77	5.296426257
HEXACHLOROBUTADIENE	1	/	30	0.07204	:	9.47972	0.96977	-	0.96977	0.963380833
HEXACHLOROETHANE	0	/	30	0.15766	:	20.74808				2.043070167
ISOPROPYLBENZENE	6	/	44	0.001	:	5.54474	0.037	-	0.77	0.425275568
M+P-XYLENE	7	/	14	0.001	:	0.001	0.018	-	18	3.171964286
METHACRYLONITRILE	0	/	30	0.2895	:	38.09776				3.751499333
METHYL ACETATE	4	/	44	0.002	:	3.9	0.11	-	0.71	0.176579545
METHYL ACRYLATE	1	/	30	0.07475	:	9.83745	3.82342	-	3.82342	1.094893
METHYL BROMIDE	0	/	212	0	:	15.91878				0.590281615
METHYL CHLORIDE	0	/	214	0	:	12				0.486465798
METHYL ETHYL KETONE	3	/	112	0	:	10.37404	0.022	-	0.70637	0.5921716
METHYL IODIDE	0	/	30	0.33572	:	44.17909				4.3503305
METHYL ISOBUTYL KETONE	3	/	114	0	:	12.52039	0.08	-	0.18	0.642118014
METHYL METHACRYLATE	2	/	30	0.10873	:	14.30902	0.90694	-	40.4412	2.783483
METHYLENE BROMIDE	1	/	30	0.05029	:	6.61792	0.16359	-	0.16359	0.6554345
METHYLENE CHLORIDE	48	/	214	0	:	12	0.0016	-	350	6.951380576
METHYL-T-BUTYL ETHER	0	/	74	0.0005	:	8.40655				0.357742162
NAPHTHALENE	3	/	30	0.03962	:	5.00816	0.30964	-	1.15259	0.550142667
N-BUTYLBENZENE	1	/	30	0.05437	:	7.15451	0.44133	-	0.44133	0.717393833
N-PROPYLBENZENE	3	/	30	0.04952	:	6.2602	0.31114	-	0.76972	0.661433833
O-XYLENE	83	/	133	0.001	:	7.15451	0.003	-	110	9.363493797
P-CHLOROTOLUENE	8	/	30	0.07924	:	10.01631	0.10777	-	4.84826	1.298236
PENTACHLOROETHANE	0	/	30	0.11825	:	15.56106				1.532302333
P-ISOPROPYLTOLUENE	4	/	30	0.04528	:	5.72361	0.11395	-	0.37435	0.5918495
PROPANENITRILE	0	/	30	0.73531	:	96.76473				9.528455833
SEC-BUTYLBENZENE	1	/	30	0.05844	:	7.6911	0.36973	-	0.36973	0.7677085
STYRENE	1	/	107	0	:	9.83745	0.2749	-	0.2749	0.439899459
t-Butyl Alcohol	2	/	44	0.02	:	39	0.024	-	4.6	1.583534091
TERT-BUTYLBENZENE	2	/	30	0.05844	:	7.6911	0.11887	-	0.34599	0.769901667
TETRACHLOROETHYLENE	21	/	214	0	:	5.8	0.0021	-	19	0.458656726
TETRAHYDROFURAN	0	/	30	0.80191	:	105.529				10.39147667
TOLUENE	146	/	221	0	:	2	0.001	-	2100	88.21166077
TRANS-1,4-DICHLORO-2-BUTENE	0	/	30	0.15495	:	20.39035				2.007844167
TRICHLOROETHYLENE	34	/	211	0	:	7.6911	0.02	-	1200	14.54360616
TRICHLOROFLUOROMETHANE	0	/	105	0	:	6.43906				0.345691554
VINYL CHLORIDE	6	/	214	0	:	25.57737	0.20903	-	1.9	0.630035767
XYLENES,TOTAL	134	/	207	0	:	2.55102	0.002	-	320	25.7000956
Semivolatile Organics (mg/Kg)										
1,2,4,5-TETRACHLOROBENZENE	2	/	14	0.018	:	0.69	0.1	-	2.1	0.2155
1,2,4-TRICHLOROBENZENE	4	/	14	0	:	0	0.32	-	11	3.36
1,2-DICHLOROBENZENE	0	/	14	0	:	0				
1,2-DIPHENYLHYDRAZINE	0	/	30	0	:	0.4				0.03115625
1,3-DICHLOROBENZENE	1	/	14	0	:	0	0.11	-	0.11	0.11
1,4-DICHLOROBENZENE	2	/	14	0	:	0	0.13	-	0.18	0.155
1,4-DIOXANE	0	/	14	0.11	:	4.2				0.258928571
2,3,4,6-Tetrachlorophenol	0	/	14	0.07	:	2.8				0.172928571
2,4,5-TRICHLOROPHENOL	0	/	30	0.018	:	0.8				0.063033333
2,4,6-TRICHLOROPHENOL	0	/	36	0	:	0.69				0.039783333
2,4-DICHLOROPHENOL	0	/	36	0	:	0.69				0.039783333
2,4-DIMETHYLPHENOL	1	/	36	0	:	0.69	3	-	3	0.1497
2,4-DINITROPHENOL	0	/	36	0	:	12				0.690666667
2,4-DINITROTOLUENE	0	/	44	0	:	2.8				0.113883333
2,6-DINITROTOLUENE	0	/	44	0	:	0.69				0.039783333

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection			Range or Reporting Limits for Non-Detects			Range of Detected Concentrations			Average Excluding 0 ND
2-CHLORONAPHTHALENE	0	/	28	0	:	0.29				0.028892857
2-CHLOROPHENOL	0	/	36	0	:	0.69				0.039783333
2-METHYL-4,6-DINITROPHENOL	0	/	30	0.18	:	6.9				0.282333333
2-METHYLNAPHTHALENE	5	/	30	0.004	:	0.14	0.067	-	13	0.5971
2-NITROANILINE	0	/	38	0	:	0.69				0.039783333
2-NITROPHENOL	0	/	20	0	:	0.69				0.049642857
3,3-DICHLOROBENZIDINE	0	/	44	0	:	4.2				0.170666667
3-NITROANILINE	1	/	22	0	:	2.8	0.26	-	0.26	0.188607143
4-BROMOPHENYL PHENYL ETHER	0	/	28	0	:	0.69				0.049642857
4-CHLORO-3-METHYLPHENOL	0	/	36	0	:	0.8				0.063033333
4-CHLOROANILINE	0	/	14	0.018	:	0.69				0.063964286
4-CHLOROPHENYL PHENYL ETHER	0	/	28	0	:	0.69				0.049642857
4-NITROANILINE	0	/	22	0	:	2.8				0.172928571
4-NITROPHENOL	0	/	20	0	:	6.9				0.428214286
ACENAPHTHENE	1	/	44	0	:	0.4	0.12	-	0.12	0.02985
ACENAPHTHYLENE	1	/	44	0	:	0.4	0.15	-	0.15	0.03085
ACETOPHENONE	0	/	30	0.018	:	0.8				0.063033333
ANTHRACENE	1	/	44	0	:	0.4	0.043	-	0.043	0.0276
ATRAZINE	0	/	14	0.035	:	1.4				0.086071429
BENZALDEHYDE	0	/	30	0.07	:	2.8				0.113883333
BENZIDINE	0	/	44	0	:	29				1.5085
BENZO(A)ANTHRACENE	3	/	44	0	:	0.4	0.043	-	0.29	0.037548387
BENZO(A)PYRENE	4	/	44	0	:	0.4	0.048	-	0.25	0.0408
BENZO(B)FLUORANTHENE	6	/	44	0	:	0.4	0.044	-	0.34	0.048533333
BENZO(GHI)PERYLENE	2	/	44	0	:	0.4	0.047	-	0.17	0.0331
BENZO(K)FLUORANTHENE	2	/	44	0	:	0.4	0.07	-	0.19	0.034533333
BENZYL BUTYL PHTHALATE	2	/	44	0	:	2.8	0.18	-	1.2	0.153451613
Biphenyl	14	/	30	0.018	:	0.69	0.045	-	500	21.22848333
BIS(2-CHLOROETHOXY) METHANE	0	/	28	0	:	0.69				0.049642857
BIS(2-CHLOROETHYL) ETHER	0	/	44	0	:	0.69				0.039783333
Bis(2-chloroisopropyl) ether	0	/	30	0.018	:	0.69				0.039783333
BIS(2-CHLOROISOPROPYL)ETHER	0	/	28	0	:	0.69				0.049642857
BIS(2-ETHYLHEXYL)PHTHALATE	19	/	44	0	:	2.8	0.083	-	30	1.6205
CAPROLACTAM	0	/	30	0.035	:	1.4				0.056783333
CARBAZOLE	2	/	38	0	:	0.69	0.044	-	0.69	0.056933333
CHRYSENE	10	/	44	0	:	0.4	0.043	-	4.1	0.248677419
CRESOL,O	0	/	30	0.018	:	0.8				0.063033333
CRESOL,P	3	/	30	0.018	:	0.8	0.12	-	0.54	0.084583333
DIBENZO(A,H)ANTHRACENE	1	/	44	0	:	0.4	0.044	-	0.044	0.027633333
DIBENZOFURAN	1	/	14	0.018	:	0.69	0.044	-	0.044	0.051464286
DIETHYL PHTHALATE	0	/	44	0	:	2.8				0.113883333
DIMETHYL PHTHALATE	0	/	44	0	:	2.8				0.113883333
DI-N-BUTYL PHTHALATE	6	/	44	0	:	2.8	0.22	-	24	0.979241935
DI-N-OCTYL PHTHALATE	4	/	44	0	:	2.8	0.098	-	0.27	0.124060606
FLUORANTHENE	7	/	44	0	:	0.4	0.069	-	0.58	0.079096774
FLUORENE	6	/	44	0	:	0.14	0.045	-	1	0.078516667
HEXACHLOROBENZENE	0	/	44	0	:	0.4				0.026466667
HEXACHLOROBUTADIENE	0	/	44	0	:	0.8				0.063033333
HEXACHLOROCYCLOPENTADIENE	0	/	44	0	:	6.9				0.282333333
HEXACHLOROETHANE	0	/	44	0	:	1.4				0.056783333
INDENO(1,2,3-CD)PYRENE	2	/	44	0	:	0.4	0.048	-	0.15	0.032466667
ISOPHORONE	0	/	44	0	:	0.69				0.039783333
NAPHTHALENE	6	/	44	0	:	0.14	0.091	-	5.3	0.30955

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection			Range or Reporting Limits for Non-Detects			Range of Detected Concentrations			Average Excluding 0 ND
NITROBENZENE	0	/	44	0	:	0.69				0.039783333
N-NITROSODIMETHYLAMINE	0	/	30	0	:	0.8				0.06221875
N-NITROSODI-N-PROPYLAMINE	0	/	44	0	:	0.69				0.039783333
N-NITROSODIPHENYLAMINE	0	/	44	0	:	0.69				0.039783333
PENTACHLOROPHENOL	0	/	36	0	:	2				0.149033333
PHENANTHRENE	11	/	44	0	:	0.14	0.03	-	0.85	0.09315625
PHENOL	6	/	36	0	:	0.69	0.1	-	26	0.96075
PYRENE	8	/	44	0	:	0.4	0.021	-	0.52	0.058693548
PCBs (mg/Kg)										
PCB-1016 (AROCLOR 1016)	0	/	3	0.0039	:	0.004				0.001983333
PCB-1221 (AROCLOR 1221)	0	/	3	0.005	:	0.0052				0.00255
PCB-1232 (AROCLOR 1232)	0	/	3	0.0087	:	0.009				0.004433333
PCB-1242 (AROCLOR 1242)	0	/	3	0.0036	:	0.0037				0.001833333
PCB-1248 (AROCLOR 1248)	0	/	3	0.0036	:	0.0037				0.001833333
PCB-1254 (AROCLOR 1254)	1	/	3	0.0036	:	0.0037	0.011	-	0.011	0.004883333
PCB-1260 (AROCLOR 1260)	2	/	3	0.0054	:	0.0054	0.016	-	0.044	0.0209
Inorganics (mg/Kg)										
ALUMINUM	31	/	31				2.1	-	11600	2985.083871
ANTIMONY	8	/	41	0	:	5.97	1.01	-	4.03	0.844212121
ARSENIC	28	/	40	0.0011	:	5.67	0.0019	-	32.8	2.83088625
BARIUM	24	/	31	0.021	:	0.024	2.22	-	25.5	8.327370968
BERYLLIUM	14	/	41	0	:	0.0849	0.0717	-	3.27	0.357110161
CADMIUM	17	/	41	0	:	0.175	0.001	-	3.18	0.492078939
CALCIUM	30	/	31	0.58	:	0.58	0.89	-	22700	2542.631613
CHROMIUM	39	/	39				0.0088	-	144	18.50051026
COBALT	16	/	31	0.0053	:	0.237	0.0065	-	4.4	0.70385
COPPER	41	/	41				0.003	-	1310	57.8629122
IRON	31	/	31				2.8	-	142000	13977.96452
LEAD	37	/	41	0.011	:	0.687	0.013	-	130	13.22646341
MAGNESIUM	27	/	29	0.57	:	0.58	0.98	-	2920	402.7336207
MANGANESE	31	/	31				0.006	-	103	20.14177419
MERCURY	9	/	41	0	:	0.0144	0.0178	-	1.2	0.088815641
NICKEL	32	/	41	0	:	0.216	0.0044	-	57	5.750455714
POTASSIUM	24	/	31	0.53	:	0.59	26.4	-	1330	266.088871
SELENIUM	1	/	41	0	:	5.85	3.93	-	3.93	0.620467742
SILVER	3	/	41	0	:	0.225	0.135	-	1.5	0.147074242
SODIUM	13	/	31	0.53	:	46.5	13.1	-	3360	175.3872581
THALLIUM	6	/	41	0	:	8.66	0.461	-	1.32	0.758337097
VANADIUM	29	/	29				0.017	-	304	32.32689655
ZINC	39	/	39				0.0066	-	1000	121.293759
% Solid **(%)**	34	/	34				75.3	-	96.9	84.22647059
CYANIDE	0	/	6	0.001	:	0.001				0.0005
Moisture **(%)**	139	/	139				6.6	-	47.8	15.81294964
PH **(pH units)**	44	/	44				4.3	-	11.5	7.862727273
TOC/Solids/Sludges/Combustion	9	/	9				325	-	14800	4943.333333
TOTAL ORGANIC CARBON	1	/	1				61000	-	61000	61000

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	GP-1 GP-1/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-1 GP-1/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-2 GP-2/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/7.0-7.5-61196 6/11/1996 7-7.5 ft	GP-2 GP-2/7.0-7.5DL-61196 6/11/1996 7-7.5 ft	GP-3 GP-3/2.0-2.5-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/2.0-2.5DL-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/5.0-5.5-61196 6/11/1996 5-5.5 ft	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB10 RDSB10-092903-3.0 9/29/2003 2-4 ft	RDSB10 RDSB10-092903-6.0 9/29/2003 5-7 ft	RDSB10 RDSB10-092903-7.0 9/29/2003 6-8 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB11 RDSB11-093003-3.0 9/30/2003 2-4 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,1,1-TRICHLOROETHANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,1,2,2-TETRACHLOROETHANE										1.5 U	1.6 U	0.15 U	0.15 U	2.3	1.4 U	1.4 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,1-DICHLOROETHANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,1-DICHLOROETHYLENE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE																
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE										1.5 U	1.6 U	0.16	0.15 U	1.4 U	1.4 U	1.4 U
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROBENZENE	0 U	0 U	22	0.019	0.018		2.7		0 U	120	18	10	1.6	74	47	200
1,2-DICHLOROETHANE	0 U	0 U	0 U	0 U	0.011		0 U		0 U	9.5	10	35	45	1.4 U	1.4 U	1.4 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,2-TRANS-DICHLOROETHYLENE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,3-DICHLOROBENZENE	0 U	0 U	0 U	0 U	0 U		1		0 U	1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
1,4-DICHLOROBENZENE	0 U	0 U	6	0.008	0.006		6.2		0 U	1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	5.5
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE																
2-HEXANONE																
3-CHLOROPROPENE																
ACETONE	0 U	10	0 U	0.018		3.5 D	0 U		0 U	10 U	11 U	13	34	9.7 U	9.7 U	10 U
ACROLEIN																
ACRYLONITRILE										5.9 U	6.3 U	0.58 U	0.6 U	5.6 U	5.6 U	5.7 U
BENZENE										4.6	3.8	1.2	1.4	1.4 U	1.4 U	1.4 U
BROMOBENZENE																
BROMOCHLOROMETHANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
BROMOFORM										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
CARBON DISULFIDE																
CARBON TETRACHLORIDE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
CHLOROBENZENE	0 U	0 U	3.9	0.013	0 U		0 U		0 U	1.5 U	1.6 U	0.15 U	0.15 U	2.8	1.7	1.4 U
CHLORODIBROMOMETHANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
CHLOROETHANE										3 U	3.1 U	0.29 U	0.3 U	2.8 U	2.8 U	2.9 U
CHLOROFORM										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
DICHLORODIFLUOROMETHANE																
DIETHYL ETHER																
ETHYL METHACRYLATE																

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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	GP-1 GP-1/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-1 GP-1/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-2 GP-2/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/7.0-7.5-61196 6/11/1996 7-7.5 ft	GP-2 GP-2/7.0-7.5DL-61196 6/11/1996 7-7.5 ft	GP-3 GP-3/2.0-2.5-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/2.0-2.5DL-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/5.0-5.5-61196 6/11/1996 5-5.5 ft	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB10 RDSB10-092903-3.0 9/29/2003 2-4 ft	RDSB10 RDSB10-092903-6.0 9/29/2003 5-7 ft	RDSB10 RDSB10-092903-7.0 9/29/2003 6-8 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB11 RDSB11-093003-3.0 9/30/2003 2-4 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft
ETHYLBENZENE	0 U	0 U	1	0 U	0 U		10		0.5	30	17	2.6	2.6	23	13	10
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE																
METHYL ACRYLATE																
METHYL BROMIDE										3 U	3.1 U	0.29 U	0.3 U	2.8 U	2.8 U	2.9 U
METHYL CHLORIDE										3 U	3.1 U	0.29 U	0.3 U	2.8 U	2.8 U	2.9 U
METHYL ETHYL KETONE	0 U	0 U	0 U	0 U	0.066		0 U		0 U							
METHYL IODIDE																
METHYL ISOBUTYL KETONE	0 U	0 U	0 U	0 U	0.16		0 U		0 U							
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE										51	48	200	350	5.1	3.6	2.9 U
METHYL-T-BUTYL ETHER																
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE										41	19	3.3	2.8	43	26	19
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE																
t-Butyl Alcohol																
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
TETRAHYDROFURAN																
TOLUENE	380	13	20	0.008	0 U			220 D	1.4	1300	980	28	78	1200	790	690
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE										1.5 U	1.6 U	0.15 U	0.15	4.1	2.6	1.4 U
TRICHLOROFLUOROMETHANE																
VINYL CHLORIDE										1.5 U	1.6 U	0.15 U	0.15 U	1.4 U	1.4 U	1.4 U
XYLENES,TOTAL	0 U	0 U	7.9	0.007	0 U			55 D	0.61	150	75	12	13	120	73	76
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																

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Baseline Human Health Risk Assessment
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chemical_name	GP-1 GP-1/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-1 GP-1/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-2 GP-2/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/7.0-7.5-61196 6/11/1996 7-7.5 ft	GP-2 GP-2/7.0-7.5DL-61196 6/11/1996 7-7.5 ft	GP-3 GP-3/2.0-2.5-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/2.0-2.5DL-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/5.0-5.5-61196 6/11/1996 5-5.5 ft	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB10 RDSB10-092903-3.0 9/29/2003 2-4 ft	RDSB10 RDSB10-092903-6.0 9/29/2003 5-7 ft	RDSB10 RDSB10-092903-7.0 9/29/2003 6-8 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB11 RDSB11-093003-3.0 9/30/2003 2-4 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																

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chemical_name	GP-1 GP-1/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-1 GP-1/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/2.5-3.0-61196 6/11/1996 2.5-3 ft	GP-2 GP-2/5.0-5.5-61196 6/11/1996 5-5.5 ft	GP-2 GP-2/7.0-7.5-61196 6/11/1996 7-7.5 ft	GP-2 GP-2/7.0-7.5DL-61196 6/11/1996 7-7.5 ft	GP-3 GP-3/2.0-2.5-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/2.0-2.5DL-61196 6/11/1996 2-2.5 ft	GP-3 GP-3/5.0-5.5-61196 6/11/1996 5-5.5 ft	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB10 RDSB10-092903-3.0 9/29/2003 2-4 ft	RDSB10 RDSB10-092903-6.0 9/29/2003 5-7 ft	RDSB10 RDSB10-092903-7.0 9/29/2003 6-8 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB11 RDSB11-093003-3.0 9/30/2003 2-4 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft
NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**																
CYANIDE																
Moisture **(%)**										17.5	18.7	18.6	22	12.6	16.3	12.8
PH **(pH units)**																
TOC/Solids/Sludges/Combustion															3790	
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB12 RDSB12-092903-3.0 9/29/2003 2-4 ft	RDSB12 RDSB12-092903-5.0 9/29/2003 4-6 ft	RDSB12 RDSB12-092903-6.5 9/29/2003 5.5-7.5 ft	RDSB13 RDSB13-092303-10.0 9/23/2003 9-11 ft	RDSB13 RDSB13-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB13 RDSB13-092303-5.0 9/23/2003 4-6 ft	RDSB13 RDSB13-092303-7.0 9/23/2003 6-8 ft	RDSB14 RDSB14-100103-0.75 10/1/2003 0.25-1.25 ft	RDSB14 RDSB14-100103-3.5 10/1/2003 2.5-4.5 ft	RDSB14 RDSB14-100103-5.0 10/1/2003 4-6 ft	RDSB14 RDSB14-100103-6.75 10/1/2003 6-8 ft	RDSB14 RDSB14-100103-9.25 10/1/2003 8-10 ft	RDSB15 RDSB15-093003-1.0 9/30/2003 0.5-1.5 ft	RDSB15 RDSB15-093003-5.0 9/30/2003 4-6 ft	RDSB15 RDSB15-093003-7.0 9/30/2003 6-8 ft	RDSB15 RDSB15-093003-9.0 9/30/2003 8-10 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,1,1-TRICHLOROETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,1,2,2-TETRACHLOROETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	170	0.14 U	0.14 U	0.16 U	0.15 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,1-DICHLOROETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,1-DICHLOROETHYLENE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE																
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROBENZENE	55	61	2800	0.28	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.15	0.22	0.16 U	0.15 U
1,2-DICHLOROETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,2-TRANS-DICHLOROETHYLENE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,3-DICHLOROBENZENE	0.76 U	0.19	10	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
1,4-DICHLOROBENZENE	2	0.95	49	0.74	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.15	0.16 U	0.15 U
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE																
2-HEXANONE																
3-CHLOROPROPENE																
ACETONE	5.3 U	1.1 U	12	0.97 U	1 U	0.98 U	0.99 U	5.5 U	11 U	5.3 U	1.1 U	2.1 U	0.99 U	1 U	1.1 U	1 U
ACROLEIN																
ACRYLONITRILE	3 U	0.61 U	6.3 U	0.55 U	0.58 U	0.56 U	0.56 U	3.2 U	6.5 U	3 U	0.63 U	1.2 U	0.57 U	0.58 U	0.62 U	0.59 U
BENZENE	1.1	0.16	2.4	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.77	0.14 U	0.14 U	0.16 U	0.15 U
BROMOBENZENE																
BROMOCHLOROMETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
BROMOFORM	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
CARBON DISULFIDE																
CARBON TETRACHLORIDE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
CHLOROBENZENE	0.76 U	0.15 U	1.7	2.1	0.15 U	0.93	0.72	1.2	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.53	0.16 U	0.15 U
CHLORODIBROMOMETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
CHLOROETHANE	1.5 U	0.31 U	3.2 U	0.28 U	0.29 U	0.28 U	0.28 U	1.6 U	3.3 U	1.5 U	0.32 U	0.59 U	0.28 U	0.29 U	0.31 U	0.3 U
CHLOROFORM	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
DICHLORODIFLUOROMETHANE																
DIETHYL ETHER																
ETHYL METHACRYLATE																

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CPS Madison
Old Bridge, New Jersey

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ETHYLBENZENE	5.6	0.52	26	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	2.3	0.16 U	1.5	0.14 U	2.2	0.16 U	0.15 U
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE																
METHYL ACRYLATE																
METHYL BROMIDE	1.5 U	0.31 U	3.2 U	0.28 U	0.29 U	0.28 U	0.28 U	1.6 U	3.3 U	1.5 U	0.32 U	0.59 U	0.28 U	0.29 U	0.31 U	0.3 U
METHYL CHLORIDE	1.5 U	0.31 U	3.2 U	0.28 U	0.29 U	0.28 U	0.28 U	1.6 U	3.3 U	1.5 U	0.32 U	0.59 U	0.28 U	0.29 U	0.31 U	0.3 U
METHYL ETHYL KETONE																
METHYL IODIDE																
METHYL ISOBUTYL KETONE																
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	1.5 U	0.99	3.2 U	0.28 U	0.29 U	0.28 U	0.28 U	1.6 U	3.3 U	1.5 U	0.32 U	4.9	0.28 U	0.29 U	0.31 U	0.3 U
METHYL-T-BUTYL ETHER																
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE	11	0.73	36	0.14 U	0.15 U	0.14 U	0.14 U	1.8	1.6 U	3.8	0.16 U	1.6	0.18	2	0.16 U	0.15 U
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE																
t-Butyl Alcohol																
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	3.9	0.14 U	0.14 U	0.16 U	0.15 U
TETRAHYDROFURAN																
TOLUENE	280	23	760	0.93	0.15 U	0.14 U	0.14 U	18	1.8	5.9	0.16 U	210	0.25	1.2	0.55	0.15 U
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	55	0.14 U	0.14 U	0.16 U	0.15 U
TRICHLOROFLUOROMETHANE																
VINYL CHLORIDE	0.76 U	0.15 U	1.6 U	0.14 U	0.15 U	0.14 U	0.14 U	0.79 U	1.6 U	0.75 U	0.16 U	0.3 U	0.14 U	0.14 U	0.16 U	0.15 U
XYLENES,TOTAL	35	3.5	150	0.14 U	0.15 U	0.14 U	0.14 U	1.8	1.6 U	11	0.16 U	3.6	0.58	9.4	0.24	0.15 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																

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2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																

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NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**																
CYANIDE																
Moisture **(%)**	18.4	20.3	21.5	17.3	16.9	18	17.8	21.3	18.7	17.7	19.4	20.2	12.3	18.2	16.2	19.5
PH **(pH units)**																
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

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CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-10.0 9/25/2003 9-11 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB16 RDSB16-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB16 RDSB16-092503-7.0 9/25/2003 6-8 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-4.75 10/2/2003 4-6 ft	RDSB17 RDSB17-100203-6.5 10/2/2003 5.5-7.5 ft	RDSB17 RDSB17-100203-8.5 10/2/2003 7.5-9.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB18 RDSB18-092603-5.0 9/26/2003 4-6 ft	RDSB18 RDSB18-092603-7.0 9/26/2003 6-8 ft	RDSB18 RDSB18-092603-9.25 9/26/2003 8-10 ft	RDSB19 RDSB19-120103-3.0 12/1/2003 2-4 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,1,1-TRICHLOROETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,1,2,2-TETRACHLOROETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.22	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,1-DICHLOROETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,1-DICHLOROETHYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE																
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	14	0.26	13	0.32	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROBENZENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	540	11	22	2.1	1.8	21	12	96	0.2	1.1	0.14 U
1,2-DICHLOROETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	1.8	0.39	0.15 U	0.14 U	0.15 U	0.14 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,2-TRANS-DICHLOROETHYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.23	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,3-DICHLOROBENZENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.2	0.14 U	0.14 U	27	1.6	1.3	0.14 U
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
1,4-DICHLOROBENZENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	25	2.2	1.7	0.36	1.2	0.74	0.81	220	2.1	1.1	0.14 U
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE																
2-HEXANONE																
3-CHLOROPROPENE																
ACETONE	0.97 U	1.9	1 U	1 U	2.9	10 U	12	0.91 U	1.8	0.99 U	0.99 U	0.97 U	1 U	1 U	1 U	0.98 U
ACROLEIN																
ACRYLONITRILE	0.55 U	0.61 U	0.57 U	0.58 U	0.64 U	5.9 U	0.59 U	0.52 U	0.53 U	0.56 U	0.57 U	0.55 U	0.6 U	0.57 U	0.58 U	0.56 U
BENZENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	5.2	0.2	3.7	0.13 U	0.14 U	1.2	1.2	5.5	0.19	0.15 U	0.14 U
BROMOBENZENE																
BROMOCHLOROMETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
BROMOFORM	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
CARBON DISULFIDE																
CARBON TETRACHLORIDE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
CHLOROBENZENE	0.14 U	0.62	0.14 U	0.15 U	0.67	1.5 U	3.6	4.3	0.4	0.69	1.5	3.3	310	49	15	0.14 U
CHLORODIBROMOMETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
CHLOROETHANE	0.28 U	0.31 U	0.29 U	0.29 U	0.32 U	3 U	0.29 U	0.26 U	0.26 U	0.28 U	0.28 U	0.28 U	0.3 U	0.29 U	0.29 U	0.28 U
CHLOROFORM	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
DICHLORODIFLUOROMETHANE																
DIETHYL ETHER																
ETHYL METHACRYLATE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-10.0 9/25/2003 9-11 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB16 RDSB16-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB16 RDSB16-092503-7.0 9/25/2003 6-8 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-4.75 10/2/2003 4-6 ft	RDSB17 RDSB17-100203-6.5 10/2/2003 5.5-7.5 ft	RDSB17 RDSB17-100203-8.5 10/2/2003 7.5-9.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB18 RDSB18-092603-5.0 9/26/2003 4-6 ft	RDSB18 RDSB18-092603-7.0 9/26/2003 6-8 ft	RDSB18 RDSB18-092603-9.25 9/26/2003 8-10 ft	RDSB19 RDSB19-120103-3.0 12/1/2003 2-4 ft
ETHYLBENZENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	16	0.67	2.7	0.13 U	0.14 U	1.1	1.5	13	3.2	1.4	0.15
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE																
METHYL ACRYLATE																
METHYL BROMIDE	0.28 U	0.31 U	0.29 U	0.29 U	0.32 U	3 U	0.29 U	0.26 U	0.26 U	0.28 U	0.28 U	0.28 U	0.3 U	0.29 U	0.29 U	0.28 U
METHYL CHLORIDE	0.28 U	0.31 U	0.29 U	0.29 U	0.32 U	3 U	0.29 U	0.26 U	0.26 U	0.28 U	0.28 U	0.28 U	0.3 U	0.29 U	0.29 U	0.28 U
METHYL ETHYL KETONE																
METHYL IODIDE																
METHYL ISOBUTYL KETONE																
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	0.28 U	0.31 U	0.29 U	0.29 U	0.32 U	3.1	0.29 U	3.5	0.26 U	0.28 U	4.7	0.88	0.3 U	0.29 U	0.29 U	0.28 U
METHYL-T-BUTYL ETHER																
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	29	2.1	6	0.31	0.35	1.7	2.4	29	7.8	3.6	0.14 U
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE																
t-Butyl Alcohol																
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	5.9	0.15 U	1	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
TETRAHYDROFURAN																
TOLUENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	67	1.1	16	0.48	0.19	16	18	70	3.2	2	0.14 U
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	7	0.15 U	0.66	0.13 U	0.14 U	0.18	0.2	0.15 U	0.14 U	0.15 U	0.14 U
TRICHLOROFLUOROMETHANE																
VINYL CHLORIDE	0.14 U	0.15 U	0.14 U	0.15 U	0.16 U	1.5 U	0.15 U	0.39	0.13 U	0.14 U	0.14 U	0.14 U	0.15 U	0.14 U	0.15 U	0.14 U
XYLENES,TOTAL	0.33	0.15 U	0.14 U	0.15 U	0.16 U	82	4	14	0.64	0.68	5	7	76	19	8.5	0.35
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-10.0 9/25/2003 9-11 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB16 RDSB16-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB16 RDSB16-092503-7.0 9/25/2003 6-8 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-4.75 10/2/2003 4-6 ft	RDSB17 RDSB17-100203-6.5 10/2/2003 5.5-7.5 ft	RDSB17 RDSB17-100203-8.5 10/2/2003 7.5-9.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB18 RDSB18-092603-5.0 9/26/2003 4-6 ft	RDSB18 RDSB18-092603-7.0 9/26/2003 6-8 ft	RDSB18 RDSB18-092603-9.25 9/26/2003 8-10 ft	RDSB19 RDSB19-120103-3.0 12/1/2003 2-4 ft
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-10.0 9/25/2003 9-11 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB16 RDSB16-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB16 RDSB16-092503-7.0 9/25/2003 6-8 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-4.75 10/2/2003 4-6 ft	RDSB17 RDSB17-100203-6.5 10/2/2003 5.5-7.5 ft	RDSB17 RDSB17-100203-8.5 10/2/2003 7.5-9.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB18 RDSB18-092603-5.0 9/26/2003 4-6 ft	RDSB18 RDSB18-092603-7.0 9/26/2003 6-8 ft	RDSB18 RDSB18-092603-9.25 9/26/2003 8-10 ft	RDSB19 RDSB19-120103-3.0 12/1/2003 2-4 ft
NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**																
CYANIDE																
Moisture **(%)**	11.6	18.5	13.2	12.5	15.8	14.3	18.6	11.2	8.4	8.7	13.4	13.2	16.1	16.4	19.2	12.1
PH **(pH units)**																
TOC/Solids/Sludges/Combustion		1180					10700								325	
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB19 RDSB19-120103-6.0 12/1/2003 5-7 ft	RDSB21 RDSB21-120103-7.5 12/1/2003 6.5-8.5 ft	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB22 RDSB22-120403-3.8 12/4/2003 3-5 ft	RDSB22 RDSB22-120403-5.3 12/4/2003 4-6 ft	RDSB22 RDSB22-120403-7.3 12/4/2003 6-8 ft	RDSB22 RDSB22-120403-9.5 12/4/2003 8.5-10.5 ft	RDSB23 RDSB23-120303-5.0 12/3/2003 4-6 ft	RDSB23 RDSB23-120303-7.0 12/3/2003 6-8 ft	RDSB23 TS-RDSB-23-2-1M-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-1S-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-7-022504 2/25/2004 2-7 ft	RDSB23 TS-RDSB-23-7-12-022504 2/25/2004 7-12 ft	RDSB23 TS-RDSB-23-7-1M-051904 5/19/2004 1-7 ft	RDSB23 TS-RDSB-23-7-1S-051904 5/19/2004 1-7 ft	RDSB24 RDSB24-120203-1.5 12/2/2003 1-2 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.98852 U	1.06084 U	1.80458 U	1.73962 U	0.38447 U	1.04707 U	0.13 U
1,1,1-TRICHLOROETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.74936 U	0.80419 U	1.36799 U	1.31874 U	0.29145 U	0.79375 U	0.13 U
1,1,2,2-TETRACHLOROETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	1.46684 U	1.57416 U	2.67777 U	2.58137 U	0.5705 U	1.55372 U	0.13 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.29	0.15 U	0.52 U	0.95663 U	1.02662 U	1.74637 U	1.6835 U	0.37207 U	1.01329 U	0.13 U
1,1-DICHLOROETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.35077 U	0.37643 U	0.64034 U	0.61728 U	0.13642 U	0.37154 U	0.13 U
1,1-DICHLOROETHYLENE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	1.37117 U	1.47149 U	2.50313 U	2.41302 U	0.53329 U	1.45239 U	0.13 U
1,1-DICHLOROPROPYLENE										0.71747 U	0.76997 U	1.30978 U	1.26263 U	0.27905 U	0.75997 U	
1,2,3-TRICHLOROBENZENE										55.32922	53.96185	21.26846	6.9557	174.3996	121.92846	
1,2,3-TRICHLOROPROPANE										0.6537 U	0.70153 U	1.19335 U	1.15039 U	0.25424 U	0.69242 U	
1,2,4-TRICHLOROBENZENE										372.1994	391.1454	143.14415	41.23513	1145.4937	802.8599	
1,2,4-TRIMETHYLBENZENE										0.60587 U	0.6502 U	1.10603 U	1.06622 U	0.23564 U	0.64175 U	
1,2-CIS-DICHLOROETHYLENE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.27	0.56	0.15 U	0.52 U	0.47832 U	0.51331 U	0.87318 U	0.84175 U	0.18603 U	0.50665 U	0.13 U
1,2-DIBROMO-3-CHLOROPROPANE										4.22513 U	4.53426 U	7.71313 U	7.43547 U	1.64329 U	4.47538 U	
1,2-DIBROMOETHANE										0.68559 U	0.73575 U	1.25156 U	1.20651 U	0.26665 U	0.72619 U	
1,2-DICHLOROBENZENE	0.098 U	0.14 U	0.54	0.46	3.2	1.4	26	83	1200	413.0524	459.0225	87.84564	11.93141	272.0749	149.53676	6
1,2-DICHLOROETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	1.8	4.1	1.1	0.52 U	0.52615 U	0.56464 U	0.9605 U	0.92593 U	0.20464 U	0.55731 U	0.13 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.9088 U	0.97529 U	1.65905 U	1.59933 U	0.35346 U	0.96263 U	0.13 U
1,2-TRANS-DICHLOROETHYLENE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.87691 U	0.94107 U	1.60084 U	1.54321 U	0.34106 U	0.92885 U	0.13 U
1,3,5-TRIMETHYLBENZENE										0.78125 U	0.83841 U	1.4262 U	1.37486 U	0.30385 U	0.82752 U	
1,3-CIS-DICHLOROPROPYLENE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.66964 U	0.71864 U	1.22246 U	1.17845 U	0.26045 U	0.70931 U	0.13 U
1,3-DICHLOROBENZENE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.29	3.8	0.49196 J	0.45412 J	1.04782 U	1.0101 U	2.32574	1.03808	0.13 U
1,3-DICHLOROPROPANE										0.9088 U	0.97529 U	1.65905 U	1.59933 U	0.35346 U	0.96263 U	
1,3-TRANS-DICHLOROPROPYLENE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.47832 U	0.51331 U	0.87318 U	0.84175 U	0.18603 U	0.50665 U	0.13 U
1,4-DICHLOROBENZENE	0.098 U	0.14 U	0.22	0.14 U	0.69 U	0.15 U	0.89	1.5	23	5.35466	6.02808	1.28898	1.06622 U	11.13501	5.32173	0.59
1,4-DIOXANE																
1-CHLOROBUTANE										2.00656	0.78708 U	18.22621	1.29068 U	0.28525 U	0.77686 U	
2,2-DICHLOROPROPANE										0.89286 U	0.95818 U	1.62994 U	1.57127 U	0.34726 U	0.94574 U	
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE										0.97258 U	1.04373 U	1.77548 U	1.71156 U	0.37827 U	1.03018 U	
2-HEXANONE										0.97258 U	1.04373 U	1.77548 U	1.71156 U	0.37827 U	1.03018 U	
3-CHLOROPROPENE										0.82908 U	0.88974 U	1.51352 U	1.45903 U	0.32246 U	0.87819 U	
ACETONE	0.68 U	0.97 U	1 U	1 U	4.8 U	1 U	1.1 U	1.9	3.7 U	3.30038 U	3.54185 U	6.02497 U	5.80808 U	1.28363 U	3.49587 U	0.89 U
ACROLEIN																
ACRYLONITRILE	0.39 U	0.55 U	0.58 U	0.57 U	2.8 U	0.6 U	0.6 U	0.59 U	2.1 U	2.79018 U	2.99432 U	5.09358 U	4.91021 U	1.08519 U	2.95544 U	0.51 U
BENZENE	0.098 U	0.14 U	0.4	0.71	6.7	4	6.3	0.7	0.57	0.36671 U	0.39354 U	0.66944 U	0.64534 U	0.14263 U	0.38843 U	0.13 U
BROMOBENZENE										0.82908 U	0.88974 U	1.51352 U	1.45903 U	0.32246 U	0.87819 U	
BROMOCHLOROMETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	2.59885 U	2.78899 U	4.7443 U	4.57351 U	1.01078 U	2.75278 U	0.13 U
BROMOFORM	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.74936 U	0.80419 U	1.36799 U	1.31874 U	0.29145 U	0.79375 U	0.13 U
CARBON DISULFIDE										0.58992 U	0.63308 U	1.07693 U	1.03816 U	0.22944 U	0.62486 U	
CARBON TETRACHLORIDE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.76531 U	0.8213 U	1.3971 U	1.3468 U	0.29765 U	0.81064 U	0.13 U
CHLOROBENZENE	0.82	1.4	0.51	0.14 U	0.69 U	1	6.7	0.15 U	7	1.41028	3.14505	1.4262 U	1.37486 U	2.34492	0.96003	4.8
CHLORODIBROMOMETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.52615 U	0.56464 U	0.9605 U	0.92593 U	0.20464 U	0.55731 U	0.13 U
CHLOROETHANE	0.2 U	0.28 U	0.29 U	0.29 U	1.4 U	0.3 U	0.3 U	0.3 U	1 U	1.61033 U	1.72815 U	2.93972 U	2.83389 U	0.62631 U	1.70571 U	0.26 U
CHLOROFORM	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.52615 U	0.56464 U	0.9605 U	0.92593 U	0.20464 U	0.55731 U	0.13 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.46237 U	0.4962 U	0.84408 U	0.81369 U	0.17983 U	0.48976 U	0.13 U
DICHLORODIFLUOROMETHANE										0.70153 U	0.75286 U	1.28067 U	1.23457 U	0.27285 U	0.74308 U	
DIETHYL ETHER										0.87691 U	0.94107 U	1.60084 U	1.54321 U	0.34106 U	0.92885 U	
ETHYL METHACRYLATE										0.92474 U	0.9924 U	1.68816 U	1.62738 U	0.35966 U	0.97952 U	

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chemical_name	RDSB19 RDSB19-120103-6.0 12/1/2003 5-7 ft	RDSB21 RDSB21-120103-7.5 12/1/2003 6.5-8.5 ft	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB22 RDSB22-120403-3.8 12/4/2003 3-5 ft	RDSB22 RDSB22-120403-5.3 12/4/2003 4-6 ft	RDSB22 RDSB22-120403-7.3 12/4/2003 6-8 ft	RDSB22 RDSB22-120403-9.5 12/4/2003 8.5-10.5 ft	RDSB23 RDSB23-120303-5.0 12/3/2003 4-6 ft	RDSB23 RDSB23-120303-7.0 12/3/2003 6-8 ft	RDSB23 TS-RDSB-23-2-1M-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-1S-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-7-022504 2/25/2004 2-7 ft	RDSB23 TS-RDSB-23-7-12-022504 2/25/2004 7-12 ft	RDSB23 TS-RDSB-23-7-1M-051904 5/19/2004 1-7 ft	RDSB23 TS-RDSB-23-7-1S-051904 5/19/2004 1-7 ft	RDSB24 RDSB24-120203-1.5 12/2/2003 1-2 ft
ETHYLBENZENE	0.098 U	0.14 U	3.2	2.9	39	2.1	4.9	1.6	9.2	0.96995	1.25691	1.13514 U	1.09428 U	2.84072	1.59559	2.4
HEXACHLOROBUTADIENE										0.84503 U	0.90685 U	1.54263 U	1.48709 U	0.32866 U	0.89508 U	
HEXACHLOROETHANE										1.84949 U	1.98481 U	3.37631 U	3.25477 U	0.71933 U	1.95904 U	
ISOPROPYLBENZENE										0.49426 U	0.53042 U	0.90229 U	0.86981 U	0.19223 U	0.52354 U	
M+P-XYLENE																
METHACRYLONITRILE										3.39605 U	3.64451 U	6.19961 U	5.97643 U	1.32083 U	3.5972 U	
METHYL ACETATE																
METHYL ACRYLATE										0.87691 U	0.94107 U	1.60084 U	1.54321 U	0.34106 U	0.92885 U	
METHYL BROMIDE	0.2 U	0.28 U	0.29 U	0.29 U	1.4 U	0.3 U	0.3 U	0.3 U	1 U	1.41901 U	1.52283 U	2.59045 U	2.49719 U	0.5519 U	1.50305 U	0.26 U
METHYL CHLORIDE	0.2 U	0.28 U	0.29 U	0.29 U	1.4 U	0.3 U	0.3 U	0.3 U	1 U	0.94069 U	1.00951 U	1.71726 U	1.65544 U	0.36586 U	0.99641 U	0.26 U
METHYL ETHYL KETONE										0.92474 U	0.9924 U	1.68816 U	1.62738 U	0.35966 U	0.97952 U	
METHYL IODIDE										3.93814 U	4.22627 U	7.18922 U	6.93042 U	1.53167 U	4.1714 U	
METHYL ISOBUTYL KETONE										1.11607 U	1.19773 U	2.03743 U	1.96409 U	0.43408 U	1.18218 U	
METHYL METHACRYLATE										1.27551 U	1.36883 U	2.32849 U	2.24467 U	0.49609 U	1.35106 U	
METHYLENE BROMIDE										0.58992 U	0.63308 U	1.07693 U	1.03816 U	0.22944 U	0.62486 U	
METHYLENE CHLORIDE	0.2 U	0.28 U	0.29 U	0.94	5	15	32	5.7	1 U	0.92474 U	33.62514	4.70042	7.53122	0.35966 U	0.97952 U	0.26 U
METHYL-T-BUTYL ETHER										0.74936 U	0.80419 U	1.36799 U	1.31874 U	0.29145 U	0.79375 U	
NAPHTHALENE										0.44643 U	0.47909 U	0.81497 U	0.78563 U	0.17363 U	0.47287 U	
N-BUTYLBENZENE										0.63776 U	0.68442 U	1.16425 U	1.12233 U	0.24804 U	0.67553 U	
N-PROPYLBENZENE										0.55804 U	0.59886 U	1.01872 U	0.98204 U	0.21704 U	0.59109 U	
O-XYLENE	0.098 U	0.14 U	3.5	4.1	54	3.1	8.9	2.4	13	0.68863	1.88038	2.46243	1.12233 U	4.55318	2.15466	4.8
P-CHLOROTOLUENE										0.89286 U	0.95818 U	1.62994 U	1.57127 U	1.8128	0.96596	
PENTACHLOROETHANE										1.38712 U	1.4886 U	2.53224 U	2.44108 U	0.53949 U	1.46928 U	
P-ISOPROPYLTOLUENE										0.5102 U	0.54753 U	0.9314 U	0.89787 U	0.19843 U	0.54042 U	
PROPANENITRILE										8.62564 U	9.25672 U	15.74643 U	15.17957 U	3.35479 U	9.13654 U	
SEC-BUTYLBENZENE										0.68559 U	0.73575 U	1.25156 U	1.20651 U	0.26665 U	0.72619 U	
STYRENE										0.87691 U	0.94107 U	1.60084 U	1.54321 U	0.34106 U	0.92885 U	
t-Butyl Alcohol																
TERT-BUTYLBENZENE										0.68559 U	0.73575 U	1.25156 U	1.20651 U	0.26665 U	0.72619 U	
TETRACHLOROETHYLENE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	0.47832 U	0.51331 U	0.87318 U	0.84175 U	0.18603 U	0.50665 U	0.13 U
TETRAHYDROFURAN										9.40689 U	10.09513 U	17.17263 U	16.55443 U	3.65864 U	9.96406 U	
TOLUENE	2.9	0.15	20	28	270	27	43	160	300	15.7961	50.16218	95.75847	7.31748	4.20864	3.25577	10
TRANS-1,4-DICHLORO-2-BUTENE										1.8176 U	1.95059 U	3.3181 U	3.19865 U	0.70692 U	1.92526 U	
TRICHLOROETHYLENE	0.098 U	0.14 U	0.14 U	0.15	2.7	0.62	1.5	0.15 U	0.52 U	0.68559 U	0.73575 U	1.25156 U	1.20651 U	0.26665 U	0.72619 U	0.13 U
TRICHLOROFLUOROMETHANE										0.57398 U	0.61597 U	1.04782 U	1.0101 U	0.22324 U	0.60798 U	
VINYL CHLORIDE	0.098 U	0.14 U	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.15 U	0.52 U	2.27997 U	2.44679 U	4.16218 U	4.01235 U	0.88676 U	2.41502 U	0.13 U
XYLENES,TOTAL	0.098 U	0.18	14	13	170	9.5	24	13	56	5.58357	8.43189	11.25591	2.97759	17.4927	9.85098	14
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																

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2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																

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NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**										78.4	76.9			86.7	77.1	
CYANIDE																
Moisture **(%)**	16	17.6	15.3	12.4	15.3	16.2	16.5	19.1	16.5							13.1
PH **(pH units)**																
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB24 RDSB24-120203-7.5 12/2/2003 6.5-8.5 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB25 RDSB25-120303-10.0 12/3/2003 9-11 ft	RDSB25 RDSB25-120303-4.0 12/3/2003 3-5 ft	RDSB25 RDSB25-120303-6.0 12/3/2003 5-7 ft	RDSB25 RDSB25-120303-7.5 12/3/2003 6.5-8.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-5.5 12/2/2003 5-7 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB27 RDSB27-120803-3.5 12/8/2003 2.5-4.5 ft	RDSB27 RDSB27-120803-4.2 12/8/2003 3-5 ft	RDSB27 RDSB27-120803-7.9 12/8/2003 7-9 ft	RDSB27 RDSB27-120903-9.8 12/9/2003 9-11 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB29 RDSB29*042604-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.10225 U	0.09079 U	0.12 U
1,1,1-TRICHLOROETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.07751 U	0.06883 U	0.12 U
1,1,2,2-TETRACHLOROETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.15173 U	0.13472 U	0.12 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.09895 U	0.08786 U	0.12 U
1,1-DICHLOROETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.03628 U	0.03222 U	0.12 U
1,1-DICHLOROETHYLENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14183 U	0.12594 U	0.12 U
1,1-DICHLOROPROPYLENE														0.07421 U	0.0659 U	
1,2,3-TRICHLOROBENZENE														0.07092 U	0.06297 U	
1,2,3-TRICHLOROPROPANE														0.06762 U	0.06004 U	
1,2,4-TRICHLOROBENZENE														0.07421 U	0.0659 U	
1,2,4-TRIMETHYLBENZENE														0.06267 U	0.05565 U	
1,2-CIS-DICHLOROETHYLENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04948 U	0.04393 U	0.12 U
1,2-DIBROMO-3-CHLOROPROPANE														0.43704 U	0.38806 U	
1,2-DIBROMOETHANE														0.07092 U	0.06297 U	
1,2-DICHLOROBENZENE	1.4	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.87	0.74	0.14 U	0.14 U	0.3	0.14 U	0.14 U	0.04948 U	0.04393 U	0.12 U
1,2-DICHLOROETHANE	0.37	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.05442 U	0.04832 U	0.12 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.094 U	0.08347 U	0.12 U
1,2-TRANS-DICHLOROETHYLENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.09071 U	0.08054 U	0.12 U
1,3,5-TRIMETHYLBENZENE														0.08081 U	0.07175 U	
1,3-CIS-DICHLOROPROPYLENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.06927 U	0.0615 U	0.12 U
1,3-DICHLOROBENZENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.74	0.14 U	0.14 U	0.05937 U	0.05272 U	0.12 U
1,3-DICHLOROPROPANE														0.094 U	0.08347 U	
1,3-TRANS-DICHLOROPROPYLENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04948 U	0.04393 U	0.12 U
1,4-DICHLOROBENZENE	0.13 U	0.13 U	0.14 U	0.47	0.13 U	0.14 U	0.14 U	0.27	0.21	0.14 U	1.5	0.14 U	0.14 U	0.06267 U	0.05565 U	0.12 U
1,4-DIOXANE																
1-CHLOROBUTANE														0.07586 U	0.06736 U	
2,2-DICHLOROPROPANE														0.09236 U	0.082 U	
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE														0.1006 U	0.08933 U	
2-HEXANONE														0.1006 U	0.08933 U	
3-CHLOROPROPENE														0.08576 U	0.07615 U	
ACETONE	0.92 U	0.9 U	0.97 U	0.99 U	0.88 U	1 U	0.96 U	1 U	0.96 U	0.97 U	0.97 U	0.99 U	0.99 U	0.34138 U	0.30313 U	0.86 U
ACROLEIN																
ACRYLONITRILE	0.53 U	0.52 U	0.55 U	0.57 U	0.5 U	0.57 U	0.55 U	0.57 U	0.55 U	0.56 U	0.55 U	0.56 U	0.56 U	0.28861 U	0.25627 U	0.49 U
BENZENE	0.14	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.03793 U	0.03368 U	0.12 U
BROMOBENZENE														0.08576 U	0.07615 U	
BROMOCHLOROMETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.26882 U	0.23869 U	0.12 U
BROMOFORM	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.07751 U	0.06883 U	0.12 U
CARBON DISULFIDE														0.06102 U	0.05418 U	
CARBON TETRACHLORIDE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.07916 U	0.07029 U	0.12 U
CHLOROBENZENE	0.15	0.13 U	0.14 U	0.18	0.13 U	0.14 U	0.15	0.4	1.7	1.5	14	1.9	2.9	0.08081 U	0.22781	0.12 U
CHLORODIBROMOMETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.05442 U	0.04832 U	0.12 U
CHLOROETHANE	0.26 U	0.26 U	0.28 U	0.28 U	0.25 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.16657 U	0.1479 U	0.25 U
CHLOROFORM	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.05442 U	0.04832 U	0.12 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04783 U	0.04247 U	0.12 U
DICHLORODIFLUOROMETHANE														0.07256 U	0.06443 U	
DIETHYL ETHER														0.09071 U	0.08054 U	
ETHYL METHACRYLATE														0.09565 U	0.08493 U	

Attachment A
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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB24 RDSB24-120203-7.5 12/2/2003 6.5-8.5 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB25 RDSB25-120303-10.0 12/3/2003 9-11 ft	RDSB25 RDSB25-120303-4.0 12/3/2003 3-5 ft	RDSB25 RDSB25-120303-6.0 12/3/2003 5-7 ft	RDSB25 RDSB25-120303-7.5 12/3/2003 6.5-8.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-5.5 12/2/2003 5-7 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB27 RDSB27-120803-3.5 12/8/2003 2.5-4.5 ft	RDSB27 RDSB27-120803-4.2 12/8/2003 3-5 ft	RDSB27 RDSB27-120803-7.9 12/8/2003 7-9 ft	RDSB27 RDSB27-120903-9.8 12/9/2003 9-11 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB29 RDSB29*042604-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft
ETHYLBENZENE	0.31	0.13 U	0.98	0.14 U	0.36	0.52	0.21	0.69	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.06432 U	0.05711 U	0.12 U
HEXACHLOROBUTADIENE														0.08741 U	0.07761 U	
HEXACHLOROETHANE														0.19131 U	0.16987 U	
ISOPROPYLBENZENE														0.05113 U	0.0454 U	
M+P-XYLENE																
METHACRYLONITRILE														0.35128 U	0.31191 U	
METHYL ACETATE																
METHYL ACRYLATE														0.09071 U	0.08054 U	
METHYL BROMIDE	0.26 U	0.26 U	0.28 U	0.28 U	0.25 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.14678 U	0.13033 U	0.25 U
METHYL CHLORIDE	0.26 U	0.26 U	0.28 U	0.28 U	0.25 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.0973 U	0.0864 U	0.25 U
METHYL ETHYL KETONE														0.09565 U	0.08493 U	
METHYL IODIDE														0.40735 U	0.3617 U	
METHYL ISOBUTYL KETONE														0.11544 U	0.10251 U	
METHYL METHACRYLATE														0.13194 U	0.11715 U	
METHYLENE BROMIDE														0.06102 U	0.05418 U	
METHYLENE CHLORIDE	2.3	0.26 U	0.28 U	0.28 U	0.25 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.09565 U	0.08493 U	0.25 U
METHYL-T-BUTYL ETHER														0.07751 U	0.06883 U	
NAPHTHALENE														0.04618 U	0.041 U	
N-BUTYLBENZENE														0.06597 U	0.05857 U	
N-PROPYLBENZENE														0.05772 U	0.05125 U	
O-XYLENE	0.5	0.13 U	2	0.14 U	0.13 U	0.43	0.81	1.1	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.06597 U	0.05857 U	0.12 U
P-CHLOROTOLUENE														0.09236 U	0.082 U	
PENTACHLOROETHANE														0.14348 U	0.1274 U	
P-ISOPROPYLTOLUENE														0.05277 U	0.04686 U	
PROPANENITRILE														0.89222 U	0.79223 U	
SEC-BUTYLBENZENE														0.07092 U	0.06297 U	
STYRENE														0.09071 U	0.08054 U	
t-Butyl Alcohol																
TERT-BUTYLBENZENE														0.07092 U	0.06297 U	
TETRACHLOROETHYLENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.04948 U	0.04393 U	0.12 U
TETRAHYDROFURAN														0.97303 U	0.86398 U	
TOLUENE	15	0.13 U	4.6	0.14 U	0.13 U	0.34	1.6	1.6	0.14 U	0.14 U	0.14 U	0.14 U	0.3	0.07092 U	0.06297 U	0.12 U
TRANS-1,4-DICHLORO-2-BUTENE														0.18801 U	0.16694 U	
TRICHLOROETHYLENE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.07092 U	0.06297 U	0.12 U
TRICHLOROFLUOROMETHANE														0.05937 U	0.05272 U	
VINYL CHLORIDE	0.13 U	0.13 U	0.14 U	0.14 U	0.13 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.23584 U	0.20941 U	0.12 U
XYLENES,TOTAL	1.7	0.13 U	4.8	0.14 U	1.5	2.4	2.2	3.8	0.14 U	0.14 U	0.55	0.36	0.51	0.16162 U	0.14351 U	0.12 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																

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Old Bridge, New Jersey

chemical_name	RDSB24 RDSB24-120203-7.5 12/2/2003 6.5-8.5 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB25 RDSB25-120303-10.0 12/3/2003 9-11 ft	RDSB25 RDSB25-120303-4.0 12/3/2003 3-5 ft	RDSB25 RDSB25-120303-6.0 12/3/2003 5-7 ft	RDSB25 RDSB25-120303-7.5 12/3/2003 6.5-8.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-5.5 12/2/2003 5-7 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB27 RDSB27-120803-3.5 12/8/2003 2.5-4.5 ft	RDSB27 RDSB27-120803-4.2 12/8/2003 3-5 ft	RDSB27 RDSB27-120803-7.9 12/8/2003 7-9 ft	RDSB27 RDSB27-120903-9.8 12/9/2003 9-11 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB29 RDSB29*042604-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																

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chemical_name	RDSB24 RDSB24-120203-7.5 12/2/2003 6.5-8.5 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB25 RDSB25-120303-10.0 12/3/2003 9-11 ft	RDSB25 RDSB25-120303-4.0 12/3/2003 3-5 ft	RDSB25 RDSB25-120303-6.0 12/3/2003 5-7 ft	RDSB25 RDSB25-120303-7.5 12/3/2003 6.5-8.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-5.5 12/2/2003 5-7 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB27 RDSB27-120803-3.5 12/8/2003 2.5-4.5 ft	RDSB27 RDSB27-120803-4.2 12/8/2003 3-5 ft	RDSB27 RDSB27-120803-7.9 12/8/2003 7-9 ft	RDSB27 RDSB27-120903-9.8 12/9/2003 9-11 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB29 RDSB29*042604-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft
NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**														78.3	96.9	
CYANIDE																
Moisture **(%)**	12.7	8.6	13.2	10.5	14.2	15.7	16.8	19	11.1	14.2	12	19.3	16.5			12.1
PH **(pH units)**																
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB3 RDSB3-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB3 RDSB3-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB3 RDSB3-092403-6.5 9/24/2003 5.5-7.5 ft	RDSB30 RDSB30*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB30 RDSB30*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB31 RDSB31*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-9.0-042604 4/26/2004 8-10 ft	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB38 RDSB38*0518 04-3-052804 5/28/2004 2-4 ft	RDSB38 RDSB38*0518 04-4-052804 5/28/2004 3-5 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.10039 U	0.09097 U	0.09309 U	0.09219 U	0.09222 U	0.08427 U	0.0846 U	9.21522 U	11.08949 U	0.16963 U	3.76607 U	8.14572 U
1,1,1-TRICHLOROETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.0761 U	0.06896 U	0.07057 U	0.06989 U	0.06991 U	0.06388 U	0.06413 U	6.98573 U	8.40655 U	0.24913	2.85492 U	6.17498 U
1,1,2,2-TETRACHLOROETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.14896 U	0.13499 U	0.13814 U	1.01856	0.39326	31.7357	0.12553 U	13.6742 U	16.45537 U	0.2517 U	5.58836 U	12.0872 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.09715 U	0.08804 U	0.24903	1.58992	0.08924 U	0.08155 U	0.08187 U	8.91795 U	10.73176 U	0.16415 U	3.64458 U	7.88295 U
1,1-DICHLOROETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.03562 U	0.03228 U	0.03303 U	0.03271 U	0.03272 U	0.0299 U	0.03002 U	3.26992 U	3.93498 U	0.06019 U	1.33635 U	2.89042 U
1,1-DICHLOROETHYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.13925 U	0.12619 U	0.12913 U	0.12788 U	0.12791 U	0.11689 U	0.11735 U	12.7824 U	15.38219 U	0.23529 U	5.2239 U	11.2989 U
1,1-DICHLOROPROPYLENE					0.07286 U	0.06603 U	0.06757 U	0.06691 U	0.06693 U	0.06116 U	0.0614 U	6.68847 U	8.04882 U	0.12311 U	2.73344 U	5.91222 U
1,2,3-TRICHLOROBENZENE					0.06962 U	0.06309 U	1.18865	3.67337	0.08018	0.20939	0.48905	6.3912 U	7.6911 U	0.67299	2.61195 U	5.64945 U
1,2,3-TRICHLOROPROPANE					0.06638 U	0.06016 U	0.06156 U	0.06096 U	0.06098 U	0.05573 U	0.05594 U	6.09394 U	7.33337 U	0.11217 U	2.49046 U	5.38669 U
1,2,4-TRICHLOROBENZENE					0.07286 U	0.06603 U	11.57389	19.3054	0.33833	1.30627	2.50004	24.20213	8.04882 U	0.69212	2.73344 U	5.91222 U
1,2,4-TRIMETHYLBENZENE					0.08788	0.05576 U	0.05242 J	0.07564	0.27854	0.64042	4.20417	5.64804 U	6.79678 U	0.33152	2.30823 U	4.99254 U
1,2-CIS-DICHLOROETHYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.04857 U	0.04402 U	12.0759	14.9334	0.22486	0.0365 J	1.28512	4.45898 U	5.36588 U	0.30341	1.82229 U	3.94148 U
1,2-DIBROMO-3-CHLOROPROPANE					0.42907 U	0.38883 U	0.3979 U	0.39404 U	0.39415 U	0.36018 U	0.36159 U	39.38763 U	47.39862 U	0.72501 U	16.0969 U	34.81638 U
1,2-DIBROMOETHANE					0.06962 U	0.06309 U	0.06457 U	0.06394 U	0.06396 U	0.05844 U	0.05867 U	6.3912 U	7.6911 U	0.14993	2.61195 U	5.64945 U
1,2-DICHLOROBENZENE	0.13 U	0.14 U	0.15 U	0.14 U	0.04857 U	0.04402 U	3.96741	6.48656	0.09594	0.16708	1.38769	121.82296	8.1374	1.24451	9.97404	30.67174
1,2-DICHLOROETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.05343 U	0.04842 U	7.35333	8.70962	0.07311	0.04485 U	0.95759	4.90488 U	5.90247 U	0.51791	2.00452 U	4.33562 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.13 U	0.14 U	0.15 U	0.14 U	0.09229 U	0.08364 U	0.6338	0.60781	0.08478 U	0.07747 U	0.07778 U	8.47206 U	10.19517 U	0.15595 U	3.46235 U	7.48881 U
1,2-TRANS-DICHLOROETHYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.08905 U	0.0807 U	0.09801	0.26439	0.0818 U	0.07475 U	0.4278	8.17479 U	9.83745 U	0.15047 U	3.34087 U	7.22604 U
1,3,5-TRIMETHYLBENZENE					0.07934 U	0.0719 U	0.07357 U	0.03468 J	0.07271 J	0.31636	1.23589	7.283 U	8.76427 U	0.34732	2.97641 U	6.43775 U
1,3-CIS-DICHLOROPROPYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.068 U	0.06163 U	0.06306 U	0.06245 U	0.06247 U	0.05709 U	0.05731 U	6.24257 U	7.51223 U	0.11491 U	2.55121 U	5.51807 U
1,3-DICHLOROBENZENE	0.13 U	0.14 U	0.15 U	0.14 U	0.05829 U	0.05282 U	0.05405 U	0.04539 J	0.05354 U	0.04893 U	0.04912 U	5.35077 U	6.43906 U	0.378	2.18675 U	4.72977 U
1,3-DICHLOROPROPANE					0.09229 U	0.08364 U	0.08559 U	0.08476 U	0.08478 U	0.07747 U	0.07778 U	8.47206 U	10.19517 U	0.26973	3.46235 U	7.48881 U
1,3-TRANS-DICHLOROPROPYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.04857 U	0.04402 U	0.04505 U	0.04461 U	0.04462 U	0.04078 U	0.04094 U	4.45898 U	5.36588 U	0.08208 U	1.82229 U	3.94148 U
1,4-DICHLOROBENZENE	0.13 U	0.14 U	0.15 U	0.14 U	0.06153 U	0.05576 U	0.09008	0.1525	0.05652 U	0.05165 U	0.04805 J	5.64804 U	6.79678 U	0.37249	2.30823 U	4.99254 U
1,4-DIOXANE																
1-CHLOROBUTANE					0.49154	0.10778	1.5559	1.94198	2.07498	10.27941	62.8631	25.8269	6.4808 J	0.84614	2.79418 U	1.85888 J
2,2-DICHLOROPROPANE					0.09067 U	0.08217 U	0.08409 U	0.08327 U	0.08329 U	0.07611 U	0.07641 U	8.32342 U	10.01631 U	0.15321 U	3.40161 U	7.35742 U
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE					0.09877 U	0.08951 U	0.12127	0.37749	0.09073 U	0.32126	0.32072	9.06659 U	10.91063 U	0.33345	3.70532 U	8.01434 U
2-HEXANONE					0.09877 U	0.08951 U	0.09159 U	0.0907 U	0.09073 U	0.08291 U	0.08323 U	9.06659 U	10.91063 U	0.16689 U	3.70532 U	8.01434 U
3-CHLOROPROPENE					0.0842 U	0.0763 U	0.07808 U	0.07732 U	0.07734 U	0.07068 U	0.07095 U	7.72889 U	9.30086 U	0.14227 U	3.15864 U	6.83189 U
ACETONE	0.92 U	0.97 U	1 U	0.95 U	0.33516 U	0.30373 U	1.94247	1.27524	0.77608	0.28135 U	0.28245 U	30.76694 U	37.02458 U	0.56633 U	12.5738 U	27.19619 U
ACROLEIN																
ACRYLONITRILE	0.53 U	0.55 U	0.59 U	0.54 U	0.28335 U	0.25678 U	0.26277 U	0.26022 U	0.26029 U	0.23786 U	0.23879 U	26.0107 U	31.30098 U	0.40025 J	10.63003 U	22.99195 U
BENZENE	0.13 U	0.14 U	0.15 U	0.14 U	0.03724 U	0.03375 U	4.37191	9.94162	0.76629	0.28261	2.42236	3.41855 U	4.11384 U	0.40561	1.39709 U	3.0218 U
BROMOBENZENE					0.0842 U	0.0763 U	0.07808 U	0.07732 U	0.07734 U	0.07068 U	0.07095 U	7.72889 U	9.30086 U	0.23754	3.15864 U	6.83189 U
BROMOCHLOROMETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.26392 U	0.23917 U	0.24475 U	0.24237 U	0.24244 U	0.22155 U	0.22241 U	24.22711 U	29.15462 U	0.44595 U	9.90111 U	21.41536 U
BROMOFORM	0.13 U	0.14 U	0.15 U	0.14 U	0.0761 U	0.06896 U	0.07057 U	0.06989 U	0.06991 U	0.06388 U	0.06413 U	6.98573 U	8.40655 U	0.12859 U	2.85492 U	6.17498 U
CARBON DISULFIDE					0.05991 U	0.05429 U	0.05556 U	0.05502 U	0.05503 U	0.05029 U	0.05049 U	5.49941 U	6.61792 U	0.10123 U	2.24749 U	4.86115 U
CARBON TETRACHLORIDE	0.13 U	0.14 U	0.15 U	0.14 U	0.07772 U	0.07043 U	0.07207 U	0.07137 U	0.07139 U	0.06524 U	0.0655 U	7.13436 U	8.58541 U	0.13132 U	2.91566 U	6.30636 U
CHLOROBENZENE	0.13 U	0.14 U	0.15 U	0.14 U	0.07934 U	0.14457	0.07357 U	0.07286 U	0.07288 U	2.32764	0.68921	7.283 U	8.76427 U	0.34848	2.97641 U	6.43775 U
CHLORODIBROMOMETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.05343 U	0.04842 U	0.04955 U	0.04907 U	0.04908 U	0.04485 U	0.04503 U	4.90488 U	5.90247 U	0.09028 U	2.00452 U	4.33562 U
CHLOROETHANE	0.26 U	0.28 U	0.29 U	0.27 U	0.16353 U	0.1482 U	0.15165 U	0.15018 U	0.15022 U	0.13728 U	0.13781 U	15.01189 U	18.06513 U	0.27632 U	6.13504 U	13.26964 U
CHLOROFORM	0.13 U	0.14 U	0.15 U	0.14 U	0.05343 U	0.04842 U	0.04955 U	0.04907 U	0.04908 U	0.04485 U	0.04503 U	4.90488 U	5.90247 U	0.27055	2.00452 U	4.33562 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.13 U	0.14 U	0.15 U	0.14 U	0.04695 U	0.04255 U	0.04354 U	0.04312 U	0.04313 U	0.03942 U	0.03957 U	4.31034 U	5.18702 U	0.17226	1.76155 U	3.81009 U
DICHLORODIFLUOROMETHANE					0.07124 U	0.06456 U	0.06607 U	0.06543 U	0.06544 U	0.0598 U	0.06004 U	6.53983 U	7.86996 U	0.12038 U	2.67269 U	5.78083 U
DIETHYL ETHER					0.08905 U	0.0807 U	0.08258 U	0.08178 U	0.0818 U	0.07475 U	0.07505 U	8.17479 U	9.83745 U	0.15047 U	3.34087 U	7.22604 U
ETHYL METHACRYLATE					0.09391 U	0.0851 U	0.08709 U	0.08624 U	0.08627 U	0.07883 U	0.07914 U	8.62069 U	10.37404 U	0.15868 U	3.52309 U	7.62019 U

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB3 RDSB3-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB3 RDSB3-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB3 RDSB3-092403-6.5 9/24/2003 5.5-7.5 ft	RDSB30 RDSB30*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB30 RDSB30*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB31 RDSB31*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-9.0-042604 4/26/2004 8-10 ft	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB38 RDSB38*0518 04-3-052804 5/28/2004 2-4 ft	RDSB38 RDSB38*0518 04-4-052804 5/28/2004 3-5 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft
ETHYLBENZENE	0.13 U	0.14 U	0.15 U	0.14 U	0.06315 U	0.05722 U	1.15582	1.90839	1.38482	55.2902	39.2114	11.53173	1.32256 J	0.58022	6.50155	6.96138
HEXACHLOROBUTADIENE					0.08581 U	0.07777 U	0.07958 U	0.07881 U	0.07883 U	0.07204 U	0.07232 U	7.87753 U	9.47972 U	0.96977	3.21938 U	6.96328 U
HEXACHLOROETHANE					0.18782 U	0.17021 U	0.17418 U	0.17249 U	0.17253 U	0.15766 U	0.15828 U	17.24138 U	20.74808 U	0.31736 U	7.04619 U	15.24038 U
ISOPROPYLBENZENE					0.05019 U	0.04549 U	0.04655 U	0.0461 U	0.04611 U	0.40259	0.44731	4.60761 U	5.54474 U	0.30905	1.88303 U	4.07286 U
M+P-XYLENE																
METHACRYLONITRILE					0.34488 U	0.31254 U	0.31982 U	0.31672 U	0.31681 U	0.2895 U	0.29064 U	31.65874 U	38.09776 U	0.58274 U	12.93826 U	27.98449 U
METHYL ACETATE																
METHYL ACRYLATE					0.08905 U	0.0807 U	0.08258 U	0.08178 U	0.0818 U	0.07475 U	3.82342	8.17479 U	9.83745 U	0.15047 U	3.34087 U	7.22604 U
METHYL BROMIDE	0.26 U	0.28 U	0.29 U	0.27 U	0.1441 U	0.13059 U	0.13364 U	0.13234 U	0.13237 U	0.12097 U	0.12144 U	13.2283 U	15.91878 U	0.24349 U	5.40613 U	11.69305 U
METHYL CHLORIDE	0.26 U	0.28 U	0.29 U	0.27 U	0.09553 U	0.08657 U	0.08859 U	0.08773 U	0.08775 U	0.08019 U	0.08051 U	8.76932 U	10.5529 U	0.16142 U	3.58384 U	7.75157 U
METHYL ETHYL KETONE					0.09391 U	0.0851 U	0.70637	0.08624 U	0.08627 U	0.07883 U	0.07914 U	8.62069 U	10.37404 U	0.15868 U	3.52309 U	7.62019 U
METHYL IODIDE					0.39993 U	0.36242 U	0.37088 U	0.36728 U	0.36738 U	0.33572 U	0.33703 U	36.71225 U	44.17909 U	0.67576 U	15.00352 U	32.45149 U
METHYL ISOBUTYL KETONE					0.11334 U	0.10271 U	0.10511 U	0.10409 U	0.10411 U	0.09514 U	0.09552 U	10.40428 U	12.52039 U	0.19151 U	4.25201 U	9.19678 U
METHYL METHACRYLATE					0.12953 U	0.11738 U	0.12012 U	0.11896 U	0.90694	0.10873 U	40.4412	11.89061 U	14.30902 U	0.21887 U	4.85944 U	10.51061 U
METHYLENE BROMIDE					0.05991 U	0.05429 U	0.05556 U	0.05502 U	0.05503 U	0.05029 U	0.05049 U	5.49941 U	6.61792 U	0.16359	2.24749 U	4.86115 U
METHYLENE CHLORIDE	0.26 U	0.28 U	0.29 U	0.27 U	0.09391 U	0.0851 U	5.26218	39.3155	1.34334	0.98163	2.63686	8.62069 U	10.37404 U	1.39033	3.52309 U	7.62019 U
METHYL-T-BUTYL ETHER					0.0761 U	0.06896 U	0.07057 U	0.06989 U	0.06991 U	0.06388 U	0.06413 U	6.98573 U	8.40655 U	0.12859 U	2.85492 U	6.17498 U
NAPHTHALENE					0.04534 U	0.04108 U	0.04204 U	0.04163 U	0.04165 U	0.30964	1.15259	4.16171 U	5.00816 U	0.32385	1.7008 U	3.67871 U
N-BUTYLBENZENE					0.06477 U	0.05869 U	0.06006 U	0.05948 U	0.05949 U	0.05437 U	0.05458 U	5.9453 U	7.15451 U	0.44133	2.42972 U	5.2553 U
N-PROPYLBENZENE					0.05667 U	0.05136 U	0.05255 U	0.05204 U	0.05206 U	0.36439	0.76972	5.20214 U	6.2602 U	0.31114	2.12601 U	4.59839 U
O-XYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.06477 U	0.05869 U	3.15929	4.87932	2.5095	107.3259	73.4947	23.02152	7.15451 U	0.70111	10.04939	11.76381
P-CHLOROTOLUENE					0.09067 U	0.10777	1.20398	4.84826	0.08329 U	0.56185	0.46719	8.32342 U	10.01631 U	0.31412	3.40161 U	7.35742 U
PENTACHLOROETHANE					0.14086 U	0.12766 U	0.13063 U	0.12936 U	0.1294 U	0.11825 U	0.11871 U	12.93103 U	15.56106 U	0.23802 U	5.28464 U	11.43028 U
P-ISOPROPYLTOLUENE					0.30895	0.04695 U	0.04805 U	0.04758 U	0.0476 U	0.11395	0.16333	4.75624 U	5.72361 U	0.37435	1.94378 U	4.20424 U
PROPANENITRILE					0.87595 U	0.79381 U	0.81232 U	0.80444 U	0.80466 U	0.73531 U	0.7382 U	80.41023 U	96.76473 U	1.48012 U	32.86197 U	71.07797 U
SEC-BUTYLBENZENE					0.06962 U	0.06309 U	0.06457 U	0.06394 U	0.06396 U	0.05844 U	0.05867 U	6.3912 U	7.6911 U	0.36973	2.61195 U	5.64945 U
STYRENE					0.08905 U	0.0807 U	0.08258 U	0.08178 U	0.0818 U	0.07475 U	0.07505 U	8.17479 U	9.83745 U	0.2749	3.34087 U	7.22604 U
t-Butyl Alcohol																
TERT-BUTYLBENZENE					0.06962 U	0.06309 U	0.06457 U	0.06394 U	0.06396 U	0.05844 U	0.11887	6.3912 U	7.6911 U	0.34599	2.61195 U	5.64945 U
TETRACHLOROETHYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.04857 U	0.04402 U	0.30907	0.65043	0.04462 U	0.94448	0.71728	4.45898 U	5.36588 U	0.38899	1.82229 U	3.94148 U
TETRAHYDROFURAN					0.95529 U	0.86571 U	0.8859 U	0.8773 U	0.87754 U	0.80191 U	0.80506 U	87.69322 U	105.529 U	1.61417 U	35.83838 U	77.51571 U
TOLUENE	0.13 U	0.14 U	0.15 U	0.14 U	0.21083	0.15957	6.57202	13.81814	26.999	275.1625	379.2881	382.93469	122.62084	18.49811	115.7221	96.95367
TRANS-1,4-DICHLORO-2-BUTENE					0.18458 U	0.16727 U	0.17117 U	0.16951 U	0.16956 U	0.15495 U	0.15555 U	16.94411 U	20.39035 U	0.31189 U	6.9247 U	14.97761 U
TRICHLOROETHYLENE	0.13 U	0.14 U	0.15 U	0.14 U	0.06962 U	0.06309 U	0.2219	0.84956	0.627	5.89511	37.4029	6.3912 U	7.6911 U	0.35478	2.61195 U	5.64945 U
TRICHLOROFLUOROMETHANE					0.05829 U	0.05282 U	0.05405 U	0.05353 U	0.05354 U	0.04893 U	0.04912 U	5.35077 U	6.43906 U	0.09849 U	2.18675 U	4.72977 U
VINYL CHLORIDE	0.13 U	0.14 U	0.15 U	0.14 U	0.23154 U	0.26202	0.21472 U	0.20903 J	0.23798	0.19436 U	0.19512 U	21.25446 U	25.57737 U	0.39123 U	8.68625 U	18.78771 U
XYLENES,TOTAL	0.66	0.14 U	0.15 U	0.14 U	0.15868 U	0.03405 J	7.20712	11.19721	7.27406	280.3785	203.7355	75.92284	9.35399 J	2.01429	41.10212	43.18411
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB3 RDSB3-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB3 RDSB3-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB3 RDSB3-092403-6.5 9/24/2003 5.5-7.5 ft	RDSB30 RDSB30*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB30 RDSB30*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB31 RDSB31*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-9.0-042604 4/26/2004 8-10 ft	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB38 RDSB38*0518 04-3-052804 5/28/2004 2-4 ft	RDSB38 RDSB38*0518 04-4-052804 5/28/2004 3-5 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB3 RDSB3-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB3 RDSB3-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB3 RDSB3-092403-6.5 9/24/2003 5.5-7.5 ft	RDSB30 RDSB30*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB30 RDSB30*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB31 RDSB31*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*0426 04-3.5-042604 4/26/2004 2.5-4.5 ft	RDSB32 RDSB32*0426 04-9.0-042604 4/26/2004 8-10 ft	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB38 RDSB38*0518 04-3-052804 5/28/2004 2-4 ft	RDSB38 RDSB38*0518 04-4-052804 5/28/2004 3-5 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft
NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**					85.4	86.4	83	85	87	89.9	89.2	84.1	84.2	85.4	80.7	92.4
CYANIDE																
Moisture **(%)**	16.3	21.3	10.9	8.8												
PH **(pH units)**																
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-3-052804 5/28/2004 2-4 ft	RDSB39 RDSB39*0518 04-4-052804 5/28/2004 3-5 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB4 RDSB4- 092403-4.5 9/24/2003 3.5-5.5 ft	RDSB4 RDSB4- 092403-6.5 9/24/2003 5.5-7.5 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB40 RDSB40*0518 04-3-060204 6/2/2004 2-4 ft	RDSB40 RDSB40*0518 04-4-060204 6/2/2004 3-5 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB5 RDSB5- 100103-4.0 10/1/2003 3-5 ft	RDSB5 RDSB5- 100103-7.0 10/1/2003 6-8 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	8.74126 U	1.92796 U	1.64045 U	0.14 U	0.15 U	0.14 U	0.13 U	4.73138 U	1.5377 U	0.08773 U	4.79579 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,1,1-TRICHLOROETHANE	6.62644 U	1.46152 U	1.24357 U	0.14 U	0.15 U	0.14 U	0.13 U	3.58669 U	1.16567 U	0.0665 U	3.63552 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,1,2,2-TETRACHLOROETHANE	12.9709 U	2.86084 U	2.43422 U	0.14 U	0.15 U	0.14 U	0.13 U	7.02076 U	2.28175 U	0.13017 U	7.11634 U	0.15 U	0.74 U	0.7 U	41	11
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	8.45928 U	1.86576 U	1.58754 U	0.14 U	0.15 U	0.14 U	0.13 U	4.57875 U	1.4881 U	0.0849 U	4.64109 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,1-DICHLOROETHANE	3.10174 U	0.68411 U	0.5821 U	0.14 U	0.15 U	0.14 U	0.13 U	1.67888 U	0.54563 U	0.03113 U	1.70173 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,1-DICHLOROETHYLENE	12.12497 U	2.67426 U	2.27547 U	0.14 U	0.15 U	0.14 U	0.13 U	6.56288 U	2.13294 U	0.12168 U	6.65223 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,1-DICHLOROPROPYLENE	6.34446 U	1.39932 U	1.19065 U					3.43407 U	1.11607 U	0.06367 U	3.48082 U					
1,2,3-TRICHLOROBENZENE	6.06249 U	1.33713 U	1.13773 U					89.89409	41.86787	123.3767	25.39191					
1,2,3-TRICHLOROPROPANE	5.78051 U	1.27494 U	1.08482 U					3.12882 U	1.01687 U	0.05801 U	3.17141 U					
1,2,4-TRICHLOROBENZENE	6.34446 U	7.84897	1.19065 U					625.8031	265.004	894.7323	175.76996					
1,2,4-TRIMETHYLBENZENE	5.35755 U	0.68915 J	1.00544 U					2.89988 U	0.94246 U	0.05377 U	2.93936 U					
1,2-CIS-DICHLOROETHYLENE	4.22964 U	0.93288 U	0.79377 U	0.14 U	0.15 U	0.14 U	0.13 U	2.28938 U	0.74405 U	0.04245 U	2.32054 U	6.9	5.8	44	150	26
1,2-DIBROMO-3-CHLOROPROPANE	37.36183 U	8.24046 U	7.01162 U					20.22283 U	6.57242 U	0.37495 U	20.49814 U					
1,2-DIBROMOETHANE	6.06249 U	1.33713 U	1.13773 U					3.28144 U	1.06647 U	0.06084 U	3.32611 U					
1,2-DICHLOROBENZENE	38.37978	124.03661	28.91711	0.14 U	0.15 U	0.14 U	0.13 U	338.78543	141.45316	334.7376	112.03489	180	280	190	480	430
1,2-DICHLOROETHANE	4.65261 U	1.02617 U	0.87315 U	0.14 U	0.15 U	0.14 U	0.13 U	2.51832 U	0.81845 U	0.04669 U	2.5526 U	0.15 U	0.74 U	0.7 U	5.6 U	5.2
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	8.03632 U	1.77248 U	1.50816 U	0.14 U	0.15 U	0.14 U	0.13 U	4.34982 U	1.41369 U	0.08065 U	4.40903 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,2-TRANS-DICHLOROETHYLENE	7.75434 U	1.71028 U	1.45524 U	0.14 U	0.15 U	0.14 U	0.13 U	4.19719 U	1.36409 U	0.07782 U	4.25433 U	0.45	0.74 U	0.9	5.6 U	0.26 U
1,3,5-TRIMETHYLBENZENE	6.90841 U	1.52371 U	1.29649 U					3.73932 U	1.21528 U	0.06933 U	3.79022 U					
1,3-CIS-DICHLOROPROPYLENE	5.9215 U	1.30604 U	1.11128 U	0.14 U	0.15 U	0.14 U	0.13 U	3.20513 U	1.04167 U	0.05943 U	3.24876 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,3-DICHLOROBENZENE	5.07557 U	1.11946 U	0.95252 U	0.14 U	0.15 U	0.14 U	0.13 U	2.74725 U	0.89286 U	0.08807	2.78465 U	0.19	0.74 U	0.7 U	5.6 U	0.41
1,3-DICHLOROPROPANE	8.03632 U	1.77248 U	1.50816 U					4.34982 U	1.41369 U	0.08065 U	4.40903 U					
1,3-TRANS-DICHLOROPROPYLENE	4.22964 U	0.93288 U	0.79377 U	0.14 U	0.15 U	0.14 U	0.13 U	2.28938 U	0.74405 U	0.04245 U	2.32054 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
1,4-DICHLOROBENZENE	5.35755 U	2.40444	1.00544 U	0.25	0.15 U	0.14 U	0.13 U	6.56397	2.74976	0.79547	2.93936 U	3.9	6.3	3.7	9.1	9
1,4-DIOXANE																
1-CHLOROBUTANE	6.48545 U	1.43042 U	1.21711 U					3.51038 U	1.14087 U	0.06509 U	3.55817 U					
2,2-DICHLOROPROPANE	7.89533 U	1.74138 U	1.4817 U					4.2735 U	1.38889 U	0.07924 U	4.33168 U					
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE	8.60027 U	1.89686 U	1.614 U					4.65507 U	1.5129 U	0.08631 U	4.71844 U					
2-HEXANONE	8.60027 U	1.89686 U	1.614 U					4.65507 U	1.5129 U	0.08631 U	4.71844 U					
3-CHLOROPROPENE	7.33138 U	1.617 U	1.37587 U					3.96825 U	1.28968 U	0.07358 U	4.02228 U					
ACETONE	29.18453 U	6.43689 U	5.477 U	7.9	1 U	0.97 U	0.93 U	15.7967 U	5.13393 U	0.29289 U	16.01176 U	1 U	5.2 U	4.9 U	39 U	19
ACROLEIN																
ACRYLONITRILE	24.67291 U	5.44181 U	4.63032 U	0.55 U	0.58 U	0.56 U	0.53 U	13.3547 U	4.34028 U	0.24761 U	13.53651 U	0.6 U	3 U	2.8 U	22 U	1 U
BENZENE	3.24273 U	0.71521 U	0.60856 U	0.66	0.15 U	0.14 U	0.13 U	1.75519 U	0.57044 U	0.03254 U	1.77908 U	1.2	1.4	16	98	19
BROMOBENZENE	7.33138 U	1.617 U	1.37587 U					3.96825 U	1.28968 U	0.07358 U	4.02228 U					
BROMOCHLOROMETHANE	22.98105 U	5.06866 U	4.31281 U	0.14 U	0.15 U	0.14 U	0.13 U	12.43895 U	4.04266 U	0.23063 U	12.60829 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
BROMOFORM	6.62644 U	1.46152 U	1.24357 U	0.14 U	0.15 U	0.14 U	0.13 U	3.58669 U	1.16567 U	0.0665 U	3.63552 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
CARBON DISULFIDE	5.21656 U	1.15055 U	0.97898 U					2.82357 U	0.91766 U	0.05235 U	2.862 U					
CARBON TETRACHLORIDE	6.76743 U	1.49261 U	1.27003 U	0.14 U	0.15 U	0.14 U	0.13 U	3.663 U	1.19048 U	0.06792 U	3.71287 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
CHLOROBENZENE	6.90841 U	2.86426	1.29649 U	1.2	0.56	0.16	0.13 U	3.73932 U	1.21528 U	0.06933 U	4.2022	0.18	6.4	0.7 U	5.6 U	1.5
CHLORODIBROMOMETHANE	4.65261 U	1.02617 U	0.87315 U	0.14 U	0.15 U	0.14 U	0.13 U	2.51832 U	0.81845 U	0.04669 U	2.5526 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
CHLOROETHANE	14.23979 U	3.1407 U	2.67235 U	0.27 U	0.29 U	0.28 U	0.27 U	7.70757 U	2.50496 U	0.14291 U	7.8125 U	0.3 U	1.5 U	1.4 U	11 U	0.52 U
CHLOROFORM	4.65261 U	1.02617 U	0.87315 U	0.14 U	0.15 U	0.14 U	0.13 U	2.51832 U	0.81845 U	0.04669 U	2.5526 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	4.08865 U	0.90179 U	0.76731 U	0.14 U	0.15 U	0.14 U	0.13 U	2.21306 U	0.71925 U	0.04103 U	2.24319 U	0.15 U	0.74 U	0.7 U	5.6 U	0.26 U
DICHLORODIFLUOROMETHANE	6.20347 U	1.36823 U	1.16419 U					3.35775 U	1.09127 U	0.06226 U	3.40347 U					
DIETHYL ETHER	7.75434 U	1.71028 U	1.45524 U					4.19719 U	1.36409 U	0.07782 U	4.25433 U					
ETHYL METHACRYLATE	8.17731 U	1.80357 U	1.53462 U					4.42613 U	1.43849 U	0.08207 U	4.48639 U					

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-3-052804 5/28/2004 2-4 ft	RDSB39 RDSB39*0518 04-4-052804 5/28/2004 3-5 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB4 RDSB4- 092403-4.5 9/24/2003 3.5-5.5 ft	RDSB4 RDSB4- 092403-6.5 9/24/2003 5.5-7.5 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB40 RDSB40*0518 04-3-060204 6/2/2004 2-4 ft	RDSB40 RDSB40*0518 04-4-060204 6/2/2004 3-5 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB5 RDSB5- 100103-4.0 10/1/2003 3-5 ft	RDSB5 RDSB5- 100103-7.0 10/1/2003 6-8 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft
ETHYLBENZENE	7.26411	19.86784	5.27304	3.5	0.15 U	0.14 U	0.13 U	6.05543	2.71215	0.49432	3.01671 U	6.3	8.3	13	77	67
HEXACHLOROBUTADIENE	7.47237 U	1.64809 U	1.40232 U					4.04457 U	1.31448 U	0.07499 U	4.09963 U					
HEXACHLOROETHANE	16.35461 U	3.60714 U	3.06924 U					8.85226 U	2.87698 U	0.16413 U	8.97277 U					
ISOPROPYLBENZENE	4.37063 U	0.96398 U	0.82023 U					2.36569 U	0.76885 U	0.04386 U	2.3979 U					
M+P-XYLENE																
METHACRYLONITRILE	30.03045 U	6.62346 U	5.63576 U					16.25458 U	5.28274 U	0.30138 U	16.47587 U					
METHYL ACETATE																
METHYL ACRYLATE	7.75434 U	1.71028 U	1.45524 U					4.19719 U	1.36409 U	0.07782 U	4.25433 U					
METHYL BROMIDE	12.54794 U	2.76755 U	2.35485 U	0.27 U	0.29 U	0.28 U	0.27 U	6.79182 U	2.20734 U	0.12593 U	6.88428 U	0.3 U	1.5 U	1.4 U	11 U	0.52 U
METHYL CHLORIDE	8.31829 U	1.83467 U	1.56108 U	0.27 U	0.29 U	0.28 U	0.27 U	4.50244 U	1.46329 U	0.08348 U	4.56374 U	0.3 U	1.5 U	1.4 U	11 U	0.52 U
METHYL ETHYL KETONE	8.17731 U	1.80357 U	1.53462 U					4.42613 U	1.43849 U	0.08207 U	4.48639 U					
METHYL IODIDE	34.82405 U	7.68073 U	6.53536 U					18.84921 U	6.12599 U	0.34949 U	19.10582 U					
METHYL ISOBUTYL KETONE	9.86916 U	2.17673 U	1.85213 U					5.34188 U	1.73611 U	0.09904 U	5.4146 U					
METHYL METHACRYLATE	11.27904 U	2.48769 U	2.11672 U					6.10501 U	1.98413 U	0.11319 U	6.18812 U					
METHYLENE BROMIDE	5.21656 U	1.15055 U	0.97898 U					2.82357 U	0.91766 U	0.05235 U	2.862 U					
METHYLENE CHLORIDE	8.17731 U	9.08841	18.99072	0.27 U	0.29 U	0.28 U	0.27 U	4.42613 U	1.43849 U	0.08207 U	4.48639 U	1.3	1.5 U	13	52	8.7
METHYL-T-BUTYL ETHER	6.62644 U	1.46152 U	1.24357 U					3.58669 U	1.16567 U	0.0665 U	3.63552 U					
NAPHTHALENE	3.94767 U	0.87069 U	0.74085 U					2.13675 U	0.69444 U	0.03962 U	2.16584 U					
N-BUTYLBENZENE	5.63952 U	1.24384 U	1.05836 U					3.0525 U	0.99206 U	0.0566 U	3.09406 U					
N-PROPYLBENZENE	4.93458 U	1.08836 U	0.92606 U					2.67094 U	0.86806 U	0.04952 U	2.7073 U					
O-XYLENE	12.48499	35.95508	8.63171	1	0.18	0.14 U	0.13 U	12.46591	5.66297	0.7918	3.09406 U	14	23	19	110	55
P-CHLOROTOLUENE	7.89533 U	1.74138 U	1.4817 U					4.2735 U	1.38889 U	0.07924 U	4.33168 U					
PENTACHLOROETHANE	12.26596 U	2.70536 U	2.30193 U					6.63919 U	2.15774 U	0.1231 U	6.72958 U					
P-ISOPROPYLTOLUENE	4.51162 U	0.99507 U	0.84669 U					2.442 U	0.79365 U	0.04528 U	2.47525 U					
PROPANENITRILE	76.27453 U	16.82298 U	14.31429 U					41.2851 U	13.41766 U	0.76547 U	41.84715 U					
SEC-BUTYLBENZENE	6.06249 U	1.33713 U	1.13773 U					3.28144 U	1.06647 U	0.06084 U	3.32611 U					
STYRENE	7.75434 U	1.71028 U	1.45524 U					4.19719 U	1.36409 U	0.07782 U	4.25433 U					
t-Butyl Alcohol																
TERT-BUTYLBENZENE	6.06249 U	1.33713 U	1.13773 U					3.28144 U	1.06647 U	0.06084 U	3.32611 U					
TETRACHLOROETHYLENE	4.22964 U	0.93288 U	0.79377 U	0.14 U	0.15 U	0.14 U	0.13 U	2.28938 U	0.74405 U	0.04245 U	2.32054 U	0.89	0.74 U	4.1	19	0.72
TETRAHYDROFURAN	83.18295 U	18.34668 U	15.61078 U					45.02442 U	14.63294 U	0.8348 U	45.63738 U					
TOLUENE	99.30575	223.286	91.0176	0.14 U	0.15 U	0.14 U	0.13 U	376.50113	178.96203	315.4938	80.58189	32	65	450	2100	740
TRANS-1,4-DICHLORO-2-BUTENE	16.07264 U	3.54495 U	3.01632 U					8.69963 U	2.82738 U	0.1613 U	8.81807 U					
TRICHLOROETHYLENE	6.06249 U	1.33713 U	1.13773 U	0.14 U	0.15 U	0.14 U	0.13 U	3.28144 U	1.06647 U	0.06084 U	3.32611 U	10	15	250	1200	10
TRICHLOROFLUOROMETHANE	5.07557 U	1.11946 U	0.95252 U					2.74725 U	0.89286 U	0.05094 U	2.78465 U					
VINYL CHLORIDE	20.16129 U	4.44674 U	3.78363 U	0.14 U	0.15 U	0.14 U	0.13 U	10.9127 U	3.54663 U	0.20233 U	11.06126 U	0.15 U	0.74 U	0.7 U	5.6 U	1.9
XYLENES,TOTAL	47.2841	130.6251	31.02155	4.4	0.15	0.14 U	0.13 U	53.56618	23.03605	4.88444	6.89853 J	32	46	51	300	230
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-3-052804 5/28/2004 2-4 ft	RDSB39 RDSB39*0518 04-4-052804 5/28/2004 3-5 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB4 RDSB4- 092403-4.5 9/24/2003 3.5-5.5 ft	RDSB4 RDSB4- 092403-6.5 9/24/2003 5.5-7.5 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB40 RDSB40*0518 04-3-060204 6/2/2004 2-4 ft	RDSB40 RDSB40*0518 04-4-060204 6/2/2004 3-5 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB5 RDSB5- 100103-4.0 10/1/2003 3-5 ft	RDSB5 RDSB5- 100103-7.0 10/1/2003 6-8 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-3-052804 5/28/2004 2-4 ft	RDSB39 RDSB39*0518 04-4-052804 5/28/2004 3-5 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB4 RDSB4- 092403-4.5 9/24/2003 3.5-5.5 ft	RDSB4 RDSB4- 092403-6.5 9/24/2003 5.5-7.5 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB40 RDSB40*0518 04-3-060204 6/2/2004 2-4 ft	RDSB40 RDSB40*0518 04-4-060204 6/2/2004 3-5 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB5 RDSB5- 100103-4.0 10/1/2003 3-5 ft	RDSB5 RDSB5- 100103-7.0 10/1/2003 6-8 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft
NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**	80.6	79.6	79.4					78	80	81.8	80					
CYANIDE																
Moisture **(%)**				10.5	17.6	15.1	14.8					20.3	15.9	13.9	12	47.8
PH **(pH units)**																
TOC/Solids/Sludges/Combustion						1310									8720	
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB6 RDSB6-092203-2.5 9/22/2003 1.5-3.5 ft	RDSB6 RDSB6-092603-5.0 9/26/2003 4-6 ft	RDSB6 RDSB6-092603-6.5 9/26/2003 5.5-7.5 ft	RDSB7 RDSB7-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB7 RDSB7-100203-2.75 10/2/2003 2-4 ft	RDSB8 RDSB8-091803-2.0 9/18/2003 1-3 ft	RDSB8 RDSB8-092203-10.5 9/22/2003 9.5-11.5 ft	RDSB8 RDSB8-092203-4.0 9/22/2003 3-5 ft	RDSB8 RDSB8-092203-6.0 9/22/2003 5-7 ft	RDSB8 RDSB8-092203-8.5 9/22/2003 7.5-9.5 ft	RDSB9 RDSB9-093003-1.25 9/30/2003 0.5-1.5 ft	RDSB9 RDSB9-093003-3.0 9/30/2003 2-4 ft	RDSB9 RDSB9-093003-6.0 9/30/2003 5-7 ft	SB1-1 SB1-1-110692-0.5-1 11/6/1992 0.5-1 ft	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-110692-2.5-3 11/6/1992 2.5-3 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U			
1,1,1-TRICHLOROETHANE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,1,2,2-TETRACHLOROETHANE	3.1	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	1.4	0.13 U	0.15 U	0.15 U	0.26	2.7		0 U	0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,1-DICHLOROETHANE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,1-DICHLOROETHYLENE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE																
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE	11	4.9	0.59	24	7.6	3.4	0.15 U	0.52	0.18	0.15 U	0.15	0.92	0.69			
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROBENZENE	220	310	3.5	1000	360	490	0.36	180	110	0.21	1.8	2.3	6.5	0 U	0 U	0 U
1,2-DICHLOROETHANE	1.8	1.4	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.27	0 U	0 U	0 U
1,2-DICHLOROETHYLENE														0 U	0 U	0 U
1,2-DICHLOROPROPANE	0.16 U	0.15 U	0.15 U	13	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,2-TRANS-DICHLOROETHYLENE	1	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,3-DICHLOROBENZENE	0.23	0.23	0.15 U	5.8 U	1.4 U	1.4 U	0.21	0.25	0.15	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0.11	0 U
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
1,4-DICHLOROBENZENE	4.6	5.6	0.32	23	11	9.7	0.32	3.3	1.7	0.21	0.15 U	0.14 U	0.14 U	0 U	0.13	0 U
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER														0 U	0 U	0 U
2-CHLOROTOLUENE																
2-HEXANONE															0 U	
3-CHLOROPROPENE																
ACETONE	11	1.1 U	1.2	41 U	10 U	9.8 U	1.1 U	0.91 U	0.93 U	1.1 U	1 U	0.99 U	1 U	0 U	0.21	0 U
ACROLEIN														0 U		0 U
ACRYLONITRILE	0.63 U	0.61 U	0.59 U	23 U	5.8 U	5.6 U	0.61 U	0.52 U	0.53 U	0.6 U	0.6 U	0.56 U	0.57 U	0 U		0 U
BENZENE	8.1	4.7	0.78	11	5.4	13	0.15 U	3.3	1.7	0.15 U	0.15 U	0.15	0.44	0 U	0 U	0 U
BROMOBENZENE																
BROMOCHLOROMETHANE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U			
BROMOFORM	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
CARBON DISULFIDE															0 U	
CARBON TETRACHLORIDE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
CHLOROBENZENE	4.8	2.7	1.1	36	62	1.4 U	0.15 U	7.7	6.2	2.2	0.41	0.15	0.14 U	0 U	0 U	0.014
CHLORODIBROMOMETHANE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
CHLOROETHANE	0.32 U	0.31 U	0.29 U	12 U	2.9 U	2.8 U	0.31 U	0.26 U	0.27 U	0.3 U	0.3 U	0.28 U	0.29 U	0 U	0 U	0 U
CHLOROFORM	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.16 U	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
DICHLORODIFLUOROMETHANE																
DIETHYL ETHER																
ETHYL METHACRYLATE																

Attachment A
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Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
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CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB6 RDSB6-092203-2.5 9/22/2003 1.5-3.5 ft	RDSB6 RDSB6-092603-5.0 9/26/2003 4-6 ft	RDSB6 RDSB6-092603-6.5 9/26/2003 5.5-7.5 ft	RDSB7 RDSB7-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB7 RDSB7-100203-2.75 10/2/2003 2-4 ft	RDSB8 RDSB8-091803-2.0 9/18/2003 1-3 ft	RDSB8 RDSB8-092203-10.5 9/22/2003 9.5-11.5 ft	RDSB8 RDSB8-092203-4.0 9/22/2003 3-5 ft	RDSB8 RDSB8-092203-6.0 9/22/2003 5-7 ft	RDSB8 RDSB8-092203-8.5 9/22/2003 7.5-9.5 ft	RDSB9 RDSB9-093003-1.25 9/30/2003 0.5-1.5 ft	RDSB9 RDSB9-093003-3.0 9/30/2003 2-4 ft	RDSB9 RDSB9-093003-6.0 9/30/2003 5-7 ft	SB1-1 SB1-1-110692-0.5-1 11/6/1992 0.5-1 ft	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-110692-2.5-3 11/6/1992 2.5-3 ft
ETHYLBENZENE	36	31	1.4	63	22	24	0.15 U	49	14	0.15 U	0.88	1.2	4.6	0 U	0 U	0 U
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE																
METHYL ACRYLATE																
METHYL BROMIDE	0.32 U	0.31 U	0.29 U	12 U	2.9 U	2.8 U	0.31 U	0.26 U	0.27 U	0.3 U	0.3 U	0.28 U	0.29 U	0 U	0 U	0 U
METHYL CHLORIDE	0.32 U	0.31 U	0.29 U	12 U	2.9 U	2.8 U	0.31 U	0.26 U	0.27 U	0.3 U	0.3 U	0.28 U	0.29 U	0 U	0 U	0 U
METHYL ETHYL KETONE															0 U	
METHYL IODIDE																
METHYL ISOBUTYL KETONE															0 U	
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	3.1	15	0.29 U	12 U	2.9 U	2.8 U	0.31 U	0.26 U	0.27 U	0.3 U	0.3 U	0.72	1.9	0 U	0 U	0 U
METHYL-T-BUTYL ETHER																
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE	31	43	2.3	110	36	20	0.15 U	30	9	0.15 U	1	1.1	3.8			
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE															0 U	0 U
t-Butyl Alcohol																
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0.4	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0.0059	0 U
TETRAHYDROFURAN																
TOLUENE	310	46	4.9	500	260	600	0.15 U	200	51	0.15 U	2.9	8.3	41	0 U	0.048	0.0063
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	3.4	1	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.17	0.13 U	0.15 U	0.15 U	0.15	4.1	0 U	0 U	0 U
TRICHLOROFLUOROMETHANE														0 U		0 U
VINYL CHLORIDE	0.76	0.15 U	0.15 U	5.8 U	1.4 U	1.4 U	0.15 U	0.13 U	0.13 U	0.15 U	0.15 U	0.14 U	0.14 U	0 U	0 U	0 U
XYLENES,TOTAL	130	120	5.8	320	100	85	0.15 U	170	49	0.16	3.4	3.6	14	0 U	0.033	0 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE															0 U	
1,2-DICHLOROBENZENE															0 U	
1,2-DIPHENYLHYDRAZINE															0 U	
1,3-DICHLOROBENZENE															0.11 J	
1,4-DICHLOROBENZENE															0.13 J	
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE															0 U	
2,6-DINITROTOLUENE															0 U	

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB6 RDSB6-092203-2.5 9/22/2003 1.5-3.5 ft	RDSB6 RDSB6-092603-5.0 9/26/2003 4-6 ft	RDSB6 RDSB6-092603-6.5 9/26/2003 5.5-7.5 ft	RDSB7 RDSB7-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB7 RDSB7-100203-2.75 10/2/2003 2-4 ft	RDSB8 RDSB8-091803-2.0 9/18/2003 1-3 ft	RDSB8 RDSB8-092203-10.5 9/22/2003 9.5-11.5 ft	RDSB8 RDSB8-092203-4.0 9/22/2003 3-5 ft	RDSB8 RDSB8-092203-6.0 9/22/2003 5-7 ft	RDSB8 RDSB8-092203-8.5 9/22/2003 7.5-9.5 ft	RDSB9 RDSB9-093003-1.25 9/30/2003 0.5-1.5 ft	RDSB9 RDSB9-093003-3.0 9/30/2003 2-4 ft	RDSB9 RDSB9-093003-6.0 9/30/2003 5-7 ft	SB1-1 SB1-1-110692-0.5-1 11/6/1992 0.5-1 ft	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-110692-2.5-3 11/6/1992 2.5-3 ft
2-CHLORONAPHTHALENE															0 U	
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE															0 U	
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE															0 U	
3-NITROANILINE															0 U	
4-BROMOPHENYL PHENYL ETHER															0 U	
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER															0 U	
4-NITROANILINE															0 U	
4-NITROPHENOL																
ACENAPHTHENE															0 U	
ACENAPHTHYLENE															0 U	
ACETOPHENONE																
ANTHRACENE															0 U	
ATRAZINE																
BENZALDEHYDE																
BENZIDINE															0 U	
BENZO(A)ANTHRACENE															0 U	
BENZO(A)PYRENE															0 U	
BENZO(B)FLUORANTHENE															0 U	
BENZO(GHI)PERYLENE															0 U	
BENZO(K)FLUORANTHENE															0 U	
BENZYL BUTYL PHTHALATE															0 U	
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE															0 U	
BIS(2-CHLOROETHYL) ETHER															0 U	
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER															0 U	
BIS(2-ETHYLHEXYL)PHTHALATE															0 U	
CAPROLACTAM																
CARBAZOLE															0 U	
CHRYSENE															0 U	
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE															0 U	
DIBENZOFURAN																
DIETHYL PHTHALATE															0 U	
DIMETHYL PHTHALATE															0 U	
DI-N-BUTYL PHTHALATE															0 U	
DI-N-OCTYL PHTHALATE															0 U	
FLUORANTHENE															0 U	
FLUORENE															0 U	
HEXACHLOROBENZENE															0 U	
HEXACHLOROBUTADIENE															0 U	
HEXACHLOROCYCLOPENTADIENE															0 U	
HEXACHLOROETHANE															0 U	
INDENO(1,2,3-CD)PYRENE															0 U	
ISOPHORONE															0 U	
NAPHTHALENE															0 U	

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB6 RDSB6-092203-2.5 9/22/2003 1.5-3.5 ft	RDSB6 RDSB6-092603-5.0 9/26/2003 4-6 ft	RDSB6 RDSB6-092603-6.5 9/26/2003 5.5-7.5 ft	RDSB7 RDSB7-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB7 RDSB7-100203-2.75 10/2/2003 2-4 ft	RDSB8 RDSB8-091803-2.0 9/18/2003 1-3 ft	RDSB8 RDSB8-092203-10.5 9/22/2003 9.5-11.5 ft	RDSB8 RDSB8-092203-4.0 9/22/2003 3-5 ft	RDSB8 RDSB8-092203-6.0 9/22/2003 5-7 ft	RDSB8 RDSB8-092203-8.5 9/22/2003 7.5-9.5 ft	RDSB9 RDSB9-093003-1.25 9/30/2003 0.5-1.5 ft	RDSB9 RDSB9-093003-3.0 9/30/2003 2-4 ft	RDSB9 RDSB9-093003-6.0 9/30/2003 5-7 ft	SB1-1 SB1-1-110692-0.5-1 11/6/1992 0.5-1 ft	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-110692-2.5-3 11/6/1992 2.5-3 ft
NITROBENZENE															0 U	
N-NITROSODIMETHYLAMINE															0 U	
N-NITROSODI-N-PROPYLAMINE															0 U	
N-NITROSODIPHENYLAMINE															0 U	
PENTACHLOROPHENOL																
PHENANTHRENE															0 U	
PHENOL																
PYRENE															0 U	
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY														1.4		0 U
ARSENIC														1.7		1.3
BARIUM																
BERYLLIUM														0 U		0 U
CADMIUM														2.3		0 U
CALCIUM																
CHROMIUM														36		14
COBALT																
COPPER														92		2.9
IRON																
LEAD														130		6.1
MAGNESIUM																
MANGANESE																
MERCURY														0.14		0 U
NICKEL														27		0 U
POTASSIUM																
SELENIUM														0 U		0 U
SILVER														1.5		0 U
SODIUM																
THALLIUM														0 U		0 U
VANADIUM																
ZINC														1000		17
% Solid **(%)**																
CYANIDE																
Moisture **(%)**	24.4	17.9	15.5	14.8	10.2	12.2	18.8	13.7	17	17.7	13	16.5	16.3			
PH **(pH units)**																
TOC/Solids/Sludges/Combustion								2740								
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-4.5-5 11/6/1992 4.5-5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB1-2 SB1-2-110692-3-4 11/6/1992 3-4 ft	SB1-2 SB1-2-110692-5-6 11/6/1992 5-6 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-3 SB2-3-110592-5-6 11/5/1992 5-6 ft	SB2-3 SB2-3-110592-7-8 11/5/1992 7-8 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-4-5 11/5/1992 4-5 ft	SB2-4 SB2-4-110592-7-7.5 11/5/1992 7-7.5 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB2-5 SB2-5-110692-3-4 11/6/1992 3-4 ft	SB2-5 SB2-5-110692-5-6 11/6/1992 5-6 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-5 SB3-5-110492-3.5-4 11/4/1992 3.5-4 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,1,2,2-TETRACHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,1-DICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,1-DICHLOROETHYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE																
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE																
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROBENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,2-DICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,2-DICHLOROETHYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,2-DICHLOROPROPANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,2-TRANS-DICHLOROETHYLENE	0 U		0 U	0 U	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,3-DICHLOROBENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.12	0 U	0 U	
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
1,4-DICHLOROBENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.0043 J	0 U	0 U	0.11	0 U	0 U	
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER	0 U		0 U	0 U	0 U		0 U	0 U		0 U	0 U	0 U			0 U	
2-CHLOROTOLUENE																
2-HEXANONE	0 U					0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	
3-CHLOROPROPENE																
ACETONE	0.046		0.66 E	1.1 E	0.44 E	1.3	0.23	0.06	16	33 E	0.46 E	34 E	2.6	1.9	1.7 E	
ACROLEIN	0 U		0 U	0 U	0 U		0 U	0 U		0 U	0 U	0 U			0 U	
ACRYLONITRILE	0 U		0 U	0 U	0 U		0 U	0 U		0 U	0 U	0 U			0 U	
BENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
BROMOBENZENE																
BROMOCHLOROMETHANE																
BROMOFORM	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
CARBON DISULFIDE	0 U					0 U			0 U				0 U	0 U		
CARBON TETRACHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
CHLOROBENZENE	0.029		0 U	0.016	0 U	0 U	0 U	0 U	0 U	0.0041 J	0 U	0 U	0.76	0 U	0 U	
CHLORODIBROMOMETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
CHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
CHLOROFORM	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
DICHLORODIFLUOROMETHANE																
DIETHYL ETHER																
ETHYL METHACRYLATE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-4.5-5 11/6/1992 4.5-5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB1-2 SB1-2-110692-3-4 11/6/1992 3-4 ft	SB1-2 SB1-2-110692-5-6 11/6/1992 5-6 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-3 SB2-3-110592-5-6 11/5/1992 5-6 ft	SB2-3 SB2-3-110592-7-8 11/5/1992 7-8 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-4-5 11/5/1992 4-5 ft	SB2-4 SB2-4-110592-7-7.5 11/5/1992 7-7.5 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB2-5 SB2-5-110692-3-4 11/6/1992 3-4 ft	SB2-5 SB2-5-110692-5-6 11/6/1992 5-6 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-5 SB3-5-110492-3.5-4 11/4/1992 3.5-4 ft
ETHYLBENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.03	0 U	0 U	
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE																
METHYL ACRYLATE																
METHYL BROMIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
METHYL CHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
METHYL ETHYL KETONE	0 U					0 U			0 U				0 U	0 U		
METHYL IODIDE																
METHYL ISOBUTYL KETONE	0 U					0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
METHYL-T-BUTYL ETHER																
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE																
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE	0 U					0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U		
t-Butyl Alcohol																
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0.0021 J		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
TETRAHYDROFURAN																
TOLUENE	0.0083		0 U	0.0068	0 U	0.004 J	0 U	0 U	0.021 J	0.0043 J	0 U	0.0077	0.019	0 U	0.0048 J	
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
TRICHLOROFLUOROMETHANE	0 U		0 U	0 U	0 U		0 U	0 U	0 U	0 U	0 U	0 U			0 U	
VINYL CHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	
XYLENES,TOTAL	0.006		0 U	0 U	0 U	0 U	0 U	0 U	0.01	0 U	0 U	0 U	0.29	0 U	0 U	
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE	0 U					0.62			0 U							
1,2-DICHLOROBENZENE	0 U					0 U			0 U							
1,2-DIPHENYLHYDRAZINE	0 U					0 U			0 U							
1,3-DICHLOROBENZENE	0 U					0 U			0 U							
1,4-DICHLOROBENZENE	0 U					0 U			0 U							
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE	0 U					0 U			0 U							
2,6-DINITROTOLUENE	0 U					0 U			0 U							

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-4.5-5 11/6/1992 4.5-5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB1-2 SB1-2-110692-3-4 11/6/1992 3-4 ft	SB1-2 SB1-2-110692-5-6 11/6/1992 5-6 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-3 SB2-3-110592-5-6 11/5/1992 5-6 ft	SB2-3 SB2-3-110592-7-8 11/5/1992 7-8 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-4-5 11/5/1992 4-5 ft	SB2-4 SB2-4-110592-7-7.5 11/5/1992 7-7.5 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB2-5 SB2-5-110692-3-4 11/6/1992 3-4 ft	SB2-5 SB2-5-110692-5-6 11/6/1992 5-6 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-5 SB3-5-110492-3.5-4 11/4/1992 3.5-4 ft
2-CHLORONAPHTHALENE	0 U					0 U			0 U							
2-CHLOROPHENOL																
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE	0 U					0 U			0 U							
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE	0 U					0 U			0 U							
3-NITROANILINE	0 U					0 U			0 U							
4-BROMOPHENYL PHENYL ETHER	0 U					0 U			0 U							
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER	0 U					0 U			0 U							
4-NITROANILINE	0 U					0 U			0 U							
4-NITROPHENOL																
ACENAPHTHENE	0 U					0 U			0 U							
ACENAPHTHYLENE	0 U					0 U			0 U							
ACETOPHENONE																
ANTHRACENE	0 U					0 U			0 U							
ATRAZINE																
BENZALDEHYDE																
BENZIDINE	0 U					0 U			0 U							
BENZO(A)ANTHRACENE	0 U					0 U			0.055							
BENZO(A)PYRENE	0 U					0 U			0 U							
BENZO(B)FLUORANTHENE	0 U					0 U			0 U							
BENZO(GHI)PERYLENE	0 U					0 U			0 U							
BENZO(K)FLUORANTHENE	0 U					0 U			0 U							
BENZYL BUTYL PHTHALATE	0 U					0 U			0 U							
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE	0 U					0 U			0 U							
BIS(2-CHLOROETHYL) ETHER	0 U					0 U			0 U							
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER	0 U					0 U			0 U							
BIS(2-ETHYLHEXYL)PHTHALATE	0 U					0.099 J			0 U							
CAPROLACTAM																
CARBAZOLE	0 U					0 U			0 U							
CHRYSENE	0 U					0 U			0.074 J							
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE	0 U					0 U			0 U							
DIBENZOFURAN																
DIETHYL PHTHALATE	0 U					0 U			0 U							
DIMETHYL PHTHALATE	0 U					0 U			0 U							
DI-N-BUTYL PHTHALATE	0 U					0 U			0 U							
DI-N-OCTYL PHTHALATE	0 U					0 U			0 U							
FLUORANTHENE	0 U					0 U			0.15 J							
FLUORENE	0 U					0 U			0 U							
HEXACHLOROBENZENE	0 U					0 U			0 U							
HEXACHLOROBUTADIENE	0 U					0 U			0 U							
HEXACHLOROCYCLOPENTADIENE	0 U					0 U			0 U							
HEXACHLOROETHANE	0 U					0 U			0 U							
INDENO(1,2,3-CD)PYRENE	0 U					0 U			0 U							
ISOPHORONE	0 U					0 U			0 U							
NAPHTHALENE	0 U					0 U			0 U							

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-4.5-5 11/6/1992 4.5-5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB1-2 SB1-2-110692-3-4 11/6/1992 3-4 ft	SB1-2 SB1-2-110692-5-6 11/6/1992 5-6 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-3 SB2-3-110592-5-6 11/5/1992 5-6 ft	SB2-3 SB2-3-110592-7-8 11/5/1992 7-8 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-4-5 11/5/1992 4-5 ft	SB2-4 SB2-4-110592-7-7.5 11/5/1992 7-7.5 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB2-5 SB2-5-110692-3-4 11/6/1992 3-4 ft	SB2-5 SB2-5-110692-5-6 11/6/1992 5-6 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-5 SB3-5-110492-3.5-4 11/4/1992 3.5-4 ft
NITROBENZENE	0 U					0 U			0 U							
N-NITROSODIMETHYLAMINE	0 U					0 U			0 U							
N-NITROSODI-N-PROPYLAMINE	0 U					0 U			0 U							
N-NITROSODIPHENYLAMINE	0 U					0 U			0 U							
PENTACHLOROPHENOL																
PHENANTHRENE	0 U					0.051 J			0.078 J							
PHENOL																
PYRENE	0 U					0 U			0.11 J							
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY	0 U		0 U	0 U	0 U											0 U
ARSENIC	2.6		1	1.6	1.9											2.1
BARIUM																
BERYLLIUM	0 U		0 U	0 U	0 U											0 U
CADMIUM	0 U		0 U	0 U	0 U											0 U
CALCIUM																
CHROMIUM	38		8	7.5	26											6
COBALT																
COPPER	4.5		36	15	3.4											5
IRON																
LEAD	5.1		22	10	3.2											4.6
MAGNESIUM																
MANGANESE																
MERCURY	0 U		0 U	0 U	0 U											0 U
NICKEL	0 U		4.2	4.9	0 U											0 U
POTASSIUM																
SELENIUM	0 U		0 U	0 U	0 U											0 U
SILVER	0 U		1.2	0 U	0 U											0 U
SODIUM																
THALLIUM	0 U		0 U	0 U	0 U											0 U
VANADIUM																
ZINC	21		170	73	19											12
% Solid **(%)**																
CYANIDE																
Moisture **(%)**																
PH **(pH units)**	6.3			11		11	7.8	11		7.9	7.8	6.8	6.5	6.5	8.6	
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB3-5 SB3-5-110492-4.5-6 11/4/1992 4.5-6 ft	SB3-5 SB3-5-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-3.5-4 11/4/1992 3.5-4 ft	SB3-6 SB3-6-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB3-7 SB3-7-110592-4-5 11/5/1992 4-5 ft	SB3-7 SB3-7-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB4-12 SB4-12-110592-4-5.5 11/5/1992 4-5.5 ft	SB4-12 SB4-12-110592-7-8 11/5/1992 7-8 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-1 SB5-1-110992-2-2.5 11/9/1992 2-2.5 ft	SB5-1 SB5-1-110992-5.5-6 11/9/1992 5.5-6 ft	SB5-11 SB5-11-082494-2-3 8/24/1994 2-3 ft	SB5-11 SB5-11-082494-4-5 8/24/1994 4-5 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1,2,2-TETRACHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.01	0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE																
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE																
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROBENZENE	0 U	0 U	0.03	0 U	0 U	20	0 U	0 U	0 U	0.011	0.068	0.0043	0 U	0 U		
1,2-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2-DICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U				0 U	0 U	0 U				0.015	0.005
1,2-DICHLOROPROPANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2-TRANS-DICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	0 U				
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,3-DICHLOROBENZENE	0.022	0 U	0.015	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.12	0.0037		
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,4-DICHLOROBENZENE	0.038	0.011 J	0 U	0.21 J	0 U	0 U	0.55	0.0081	0 U	0.019	0.055 J	0.0087	0.43	0.017		
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U			0 U		
2-CHLOROTOLUENE																
2-HEXANONE	0 U	0 U	0 U	0 U	0 U			0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
3-CHLOROPROPENE																
ACETONE	9.6	17 E	0.57 E	0.83	2 E	0 U	0.22	0.48	0.34 E	5.1 E	1.7	0.056	0 U	0.073	0 U	0.025
ACROLEIN	0 U	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	0 U	0 U	0 U		
ACRYLONITRILE	0 U	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	0 U	0 U	0 U		
BENZENE	0.016	0 U	0 U	0.094 J	0 U	0 U	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
BROMOBENZENE																
BROMOCHLOROMETHANE																
BROMOFORM	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CARBON DISULFIDE	0 U							0 U				0 U	0 U	0 U	0 U	0 U
CARBON TETRACHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROBENZENE	1.1	0.19	0.091	3.5	0 U	0.39	0 U	0 U	0 U	0.61 E	6.6	0 U	1.1	0.044 J	0 U	0.38
CHLORODIBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROFORM	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
DICHLORODIFLUOROMETHANE																
DIETHYL ETHER																
ETHYL METHACRYLATE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB3-5 SB3-5-110492-4.5-6 11/4/1992 4.5-6 ft	SB3-5 SB3-5-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-3.5-4 11/4/1992 3.5-4 ft	SB3-6 SB3-6-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB3-7 SB3-7-110592-4-5 11/5/1992 4-5 ft	SB3-7 SB3-7-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB4-12 SB4-12-110592-4-5.5 11/5/1992 4-5.5 ft	SB4-12 SB4-12-110592-7-8 11/5/1992 7-8 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-1 SB5-1-110992-2-2.5 11/9/1992 2-2.5 ft	SB5-1 SB5-1-110992-5.5-6 11/9/1992 5.5-6 ft	SB5-11 SB5-11-082494-2-3 8/24/1994 2-3 ft	SB5-11 SB5-11-082494-4-5 8/24/1994 4-5 ft
ETHYLBENZENE	0.12	0 U	0.015	1	0 U	0.51	0 U	0 U	0 U	0.034	0.64	0 U	0.17	0.013	0.042	0.018
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE																
METHYL ACRYLATE																
METHYL BROMIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL ETHYL KETONE	0 U							0 U				0 U	0 U	0 U	0 U	0 U
METHYL IODIDE																
METHYL ISOBUTYL KETONE	0 U	0 U	0 U	0 U	0 U			0.08	0 U	0 U	0 U	0 U			0 U	0 U
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL-T-BUTYL ETHER																
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE																
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE	0 U							0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
t-Butyl Alcohol																
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
TETRAHYDROFURAN																
TOLUENE	0.011 J	0.019 J	0.0074 J	0 U	0 U	0.64	0 U	0.0035 J	0 U	0.0081	0 U	0 U	0 U	0.004 J	0.018	0.01
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
TRICHLOROFLUOROMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U						
VINYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
XYLENES,TOTAL	0.14	0.086	0.06	23	0 U	5.6	0 U	0 U	0 U	0.03	3.6	0 U	1.5	0.12	0.37	0.11
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE	0 U							0 U							0.32	11
1,2-DICHLOROBENZENE	0 U							0 U							0 U	0 U
1,2-DIPHENYLHYDRAZINE	0 U							0 U							0 U	0 U
1,3-DICHLOROBENZENE	0 U							0 U							0 U	0 U
1,4-DICHLOROBENZENE	0 U							0 U							0 U	0 U
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL															0 U	0 U
2,4-DICHLOROPHENOL															0 U	0 U
2,4-DIMETHYLPHENOL															0 U	0 U
2,4-DINITROPHENOL															0 U	0 U
2,4-DINITROTOLUENE	0 U							0 U							0 U	0 U
2,6-DINITROTOLUENE	0 U							0 U							0 U	0 U

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB3-5 SB3-5-110492-4.5-6 11/4/1992 4.5-6 ft	SB3-5 SB3-5-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-3.5-4 11/4/1992 3.5-4 ft	SB3-6 SB3-6-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB3-7 SB3-7-110592-4-5 11/5/1992 4-5 ft	SB3-7 SB3-7-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB4-12 SB4-12-110592-4-5.5 11/5/1992 4-5.5 ft	SB4-12 SB4-12-110592-7-8 11/5/1992 7-8 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-1 SB5-1-110992-2-2.5 11/9/1992 2-2.5 ft	SB5-1 SB5-1-110992-5.5-6 11/9/1992 5.5-6 ft	SB5-11 SB5-11-082494-2-3 8/24/1994 2-3 ft	SB5-11 SB5-11-082494-4-5 8/24/1994 4-5 ft
2-CHLORONAPHTHALENE	0 U							0 U							0 U	0 U
2-CHLOROPHENOL															0 U	0 U
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE	0 U							0 U								
2-NITROPHENOL															0 U	0 U
3,3-DICHLOROBENZIDINE	0 U							0 U							0 U	0 U
3-NITROANILINE	0 U							0 U								
4-BROMOPHENYL PHENYL ETHER	0 U							0 U							0 U	0 U
4-CHLORO-3-METHYLPHENOL															0 U	0 U
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER	0 U							0 U							0 U	0 U
4-NITROANILINE	0 U							0 U								
4-NITROPHENOL															0 U	0 U
ACENAPHTHENE	0 U							0 U							0 U	0 U
ACENAPHTHYLENE	0 U							0 U							0 U	0 U
ACETOPHENONE																
ANTHRACENE	0 U							0 U							0 U	0 U
ATRAZINE																
BENZALDEHYDE																
BENZIDINE	0 U							0 U							0 U	0 U
BENZO(A)ANTHRACENE	0 U							0 U							0 U	0 U
BENZO(A)PYRENE	0 U							0 U							0 U	0 U
BENZO(B)FLUORANTHENE	0 U							0 U							0 U	0 U
BENZO(GHI)PERYLENE	0 U							0 U							0 U	0 U
BENZO(K)FLUORANTHENE	0 U							0 U							0 U	0 U
BENZYL BUTYL PHTHALATE	0 U							0 U							0 U	0.18
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE	0 U							0 U							0 U	0 U
BIS(2-CHLOROETHYL) ETHER	0 U							0 U							0 U	0 U
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER	0 U							0 U							0 U	0 U
BIS(2-ETHYLHEXYL)PHTHALATE	0 U							0 U							0.83	5.6
CAPROLACTAM																
CARBAZOLE	0 U							0 U								
CHRYSENE	0 U							0 U							0 U	0 U
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE	0 U							0 U							0 U	0 U
DIBENZOFURAN																
DIETHYL PHTHALATE	0 U							0 U							0 U	0 U
DIMETHYL PHTHALATE	0 U							0 U							0 U	0 U
DI-N-BUTYL PHTHALATE	0 U							0 U							0 U	0.22
DI-N-OCTYL PHTHALATE	0 U							0 U							0.27	0.19
FLUORANTHENE	0 U							0 U							0 U	0 U
FLUORENE	0 U							0 U							0 U	0 U
HEXACHLOROBENZENE	0 U							0 U							0 U	0 U
HEXACHLOROBUTADIENE	0 U							0 U							0 U	0 U
HEXACHLOROCYCLOPENTADIENE	0 U							0 U							0 U	0 U
HEXACHLOROETHANE	0 U							0 U							0 U	0 U
INDENO(1,2,3-CD)PYRENE	0 U							0 U							0 U	0 U
ISOPHORONE	0 U							0 U							0 U	0 U
NAPHTHALENE	0 U							0 U							0 U	0 U

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB3-5 SB3-5-110492-4.5-6 11/4/1992 4.5-6 ft	SB3-5 SB3-5-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-3.5-4 11/4/1992 3.5-4 ft	SB3-6 SB3-6-110492-7.5-8 11/4/1992 7.5-8 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB3-7 SB3-7-110592-4-5 11/5/1992 4-5 ft	SB3-7 SB3-7-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB4-12 SB4-12-110592-4-5.5 11/5/1992 4-5.5 ft	SB4-12 SB4-12-110592-7-8 11/5/1992 7-8 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-1 SB5-1-110992-2-2.5 11/9/1992 2-2.5 ft	SB5-1 SB5-1-110992-5.5-6 11/9/1992 5.5-6 ft	SB5-11 SB5-11-082494-2-3 8/24/1994 2-3 ft	SB5-11 SB5-11-082494-4-5 8/24/1994 4-5 ft
NITROBENZENE	0 U							0 U							0 U	0 U
N-NITROSODIMETHYLAMINE	0 U							0 U							0 U	0 U
N-NITROSODI-N-PROPYLAMINE	0 U							0 U							0 U	0 U
N-NITROSODIPHENYLAMINE	0 U							0 U							0 U	0 U
PENTACHLOROPHENOL															0 U	0 U
PHENANTHRENE	0 U							0 U							0 U	0 U
PHENOL															0 U	0 U
PYRENE	0 U							0 U							0 U	0 U
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM															8.8	4.4
ANTIMONY									0 U	0 U	1.6				0.0065 U	0.0067 U
ARSENIC									0.68	0.74	2.5				0.0019	0.0011 U
BARIUM															0.022 U	0.022 U
BERYLLIUM									0 U	0 U	0 U				0.00054 U	0.00058 U
CADMIUM									0 U	0 U	1.1				0.001	0.0012
CALCIUM															15	6.8
CHROMIUM									5.6	11	25				0.016	0.0088
COBALT															0.0065	0.0056 U
COPPER									4	20	97				0.16	0.043
IRON															16	6.9
LEAD									6.5	8.6	30				0.046	0.02
MAGNESIUM															3.8	1.6
MANGANESE															0.13	0.057
MERCURY									0 U	0 U	0 U				0.000095 U	0.000095 U
NICKEL									0 U	0 U	57				0.013	0.0054
POTASSIUM															0.54 U	0.56 U
SELENIUM									0 U	0 U	0 U				0.011 U	0.011 U
SILVER									0 U	0 U	0 U				0.0011 U	0.0011 U
SODIUM															0.54 U	0.56 U
THALLIUM									0 U	0 U	0 U				0.0011 U	0.0011 U
VANADIUM															0.035	0.017
ZINC									8	54	370				0.88	0.31
% Solid **(%)**															92	89
CYANIDE															0.001 U	0.001 U
Moisture **(%)**																
PH **(pH units)**	6.8	6		5.8	7.2	9.3	8.2		6.4	6.6		8.8	8.6	11.5		
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-2 SB5-2-110992-5-5.5 11/9/1992 5-5.5 ft	SB5-3 SB5-3-110992-3.5-4 11/9/1992 3.5-4 ft	SB5-3 SB5-3-110992-5-6 11/9/1992 5-6 ft	SB5-6 SB5-6-082294-2-4 8/22/1994 2-4 ft	SB5-6 TS-SB5-6-5-10-022504 2/25/2004 5-10 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SB5-8 SB5-8-081894-3-4 8/18/1994 3-4 ft	SB5-8 SB5-8-081894-4-5 8/18/1994 4-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft	SBR13 SBR13-110692-3-4 11/6/1992 3-4 ft	SBR13 SBR13-110692-7-8 11/6/1992 7-8 ft	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR14 SBR14-110692-4-5 11/6/1992 4-5 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE							1.61391 U	0.09805 U	0.10292 U							
1,1,1-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	1.22345 U	0.07433 U	0.07802 U		0 U	0 U	0 U	0 U	0 U	0 U
1,1,2,2-TETRACHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	2.39484 U	0.1455 U	0.15272 U		0 U	0 U	0 U	0 U	0 U	0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	1.56185 U	0.09489 U	0.0996 U		0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.57268 U	0.03479 U	0.03652 U		0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	2.23865 U	0.13601 U	0.14276 U		0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROPROPYLENE							1.17139 U	0.07117 U	0.0747 U							
1,2,3-TRICHLOROBENZENE							1.11933 U	0.068 U	0.07138 U							
1,2,3-TRICHLOROPROPANE							1.06726 U	0.06484 U	0.06806 U							
1,2,4-TRICHLOROBENZENE							1.17139 U	0.07117 U	0.0747 U							
1,2,4-TRIMETHYLBENZENE							0.98917 U	0.0601 U	0.06308 U							
1,2-CIS-DICHLOROETHYLENE							0.78092 U	0.04744 U	0.0498 U							
1,2-DIBROMO-3-CHLOROPROPANE							6.89817 U	0.41909 U	0.43991 U							
1,2-DIBROMOETHANE							1.11933 U	0.068 U	0.07138 U							
1,2-DICHLOROBENZENE	0 U	0 U	0 U	0 U	0.15		0.78092 U	0.04744 U	0.0498 U			0 U	0 U	0 U	0 U	0 U
1,2-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.85902 U	0.05219 U	0.05478 U		0 U	0 U	0 U	0 U	0 U	0 U
1,2-DICHLOROETHYLENE						0 U					0 U	0 U	0 U	0 U	0 U	
1,2-DICHLOROPROPANE	0 U	0 U	0 U	0 U	0 U	0 U	1.48376 U	0.09014 U	0.09462 U		0 U	0 U	0 U	0 U	0 U	0 U
1,2-TRANS-DICHLOROETHYLENE							1.4317 U	0.08698 U	0.0913 U			0 U	0 U	0 U	0 U	0 U
1,3,5-TRIMETHYLBENZENE							1.27551 U	0.07749 U	0.08134 U							
1,3-CIS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	1.09329 U	0.06642 U	0.06972 U		0 U	0 U	0 U	0 U	0 U	0 U
1,3-DICHLOROBENZENE	0 U	0 U	0 U	0.0069	0.12		0.93711 U	0.05693 U	0.05976 U			0 U	0 U	0 U	0 U	0 U
1,3-DICHLOROPROPANE							1.48376 U	0.09014 U	0.09462 U							
1,3-TRANS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0.78092 U	0.04744 U	0.0498 U		0 U	0 U	0 U	0 U	0 U	0 U
1,4-DICHLOROBENZENE	0 U	0 U	0 U	0.038	0.36 E		0.98917 U	0.0601 U	0.06308 U			0 U	0 U	0 U	0 U	0 U
1,4-DIOXANE																
1-CHLOROBUTANE							1.19742 U	0.07275 U	0.07636 U							
2,2-DICHLOROPROPANE							1.45773 U	0.08856 U	0.09296 U							
2-CHLOROETHYL VINYL ETHER				0 U	0 U											
2-CHLOROTOLUENE							1.58788 U	0.09647 U	0.10126 U							
2-HEXANONE	0 U	0 U	0 U	0 U	0 U	0 U	1.58788 U	0.09647 U	0.10126 U		0 U	0 U	0 U	0 U	0 U	
3-CHLOROPROPENE							1.3536 U	0.08224 U	0.08632 U							
ACETONE	0.22	0 U	0.028	0.95	1.8	0.0044	5.38838 U	0.32737 U	0.34363 U		0 U	0.2	0.3	0.086	0 U	0.03
ACROLEIN	0 U	0 U	0 U	0 U	0 U											
ACRYLONITRILE	0 U	0 U	0 U	0 U	0 U		4.55539 U	0.27676 U	0.2905 U							
BENZENE	0 U	0 U	0 U	0 U	0 U	0 U	0.59871 U	0.03637 U	0.03818 U		0 U	0 U	0 U	0 U	0 U	0 U
BROMOBENZENE							1.3536 U	0.08224 U	0.08632 U							
BROMOCHLOROMETHANE							4.24302 U	0.25778 U	0.27058 U							
BROMOFORM	0 U	0 U	0 U	0 U	0 U	0 U	1.22345 U	0.07433 U	0.07802 U		0 U	0 U	0 U	0 U	0 U	0 U
CARBON DISULFIDE	0 U	0 U	0 U	0 U	0 U	0 U	0.96314 U	0.05851 U	0.06142 U		0 U	0 U	0 U	0 U	0 U	0 U
CARBON TETRACHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	1.24948 U	0.07591 U	0.07968 U		0 U	0 U	0 U	0 U	0 U	0 U
CHLOROBENZENE	0 U	0.097	0 U	0.097	0.37	0 U	2.06682	0.07749 U	0.08134 U		0.0046	0 U	0 U	0 U	0 U	0 U
CHLORODIBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.85902 U	0.05219 U	0.05478 U		0 U	0 U	0 U	0 U	0 U	0 U
CHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	2.62911 U	0.15973 U	0.16766 U		0 U	0 U	0 U	0 U	0 U	0 U
CHLOROFORM	0 U	0 U	0 U	0 U	0 U	0 U	0.85902 U	0.05219 U	0.05478 U		0 U	0 U	0 U	0 U	0 U	0 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.75489 U	0.04586 U	0.04814 U		0 U	0 U	0 U	0 U	0 U	0 U
DICHLORODIFLUOROMETHANE							1.14536 U	0.06959 U	0.07304 U							
DIETHYL ETHER							1.4317 U	0.08698 U	0.0913 U							
ETHYL METHACRYLATE							1.50979 U	0.09173 U	0.09628 U							

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-2 SB5-2-110992-5-5.5 11/9/1992 5-5.5 ft	SB5-3 SB5-3-110992-3.5-4 11/9/1992 3.5-4 ft	SB5-3 SB5-3-110992-5-6 11/9/1992 5-6 ft	SB5-6 SB5-6-082294-2-4 8/22/1994 2-4 ft	SB5-6 TS-SB5-6-5-10-022504 2/25/2004 5-10 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SB5-8 SB5-8-081894-3-4 8/18/1994 3-4 ft	SB5-8 SB5-8-081894-4-5 8/18/1994 4-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft	SBR13 SBR13-110692-3-4 11/6/1992 3-4 ft	SBR13 SBR13-110692-7-8 11/6/1992 7-8 ft	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR14 SBR14-110692-4-5 11/6/1992 4-5 ft
ETHYLBENZENE	0 U	0 U	0 U	0 U	0.018	0 U	1.0152 U	0.06168 U	0.06474 U		0.011	0 U	0.015	0 U	0 U	0 U
HEXACHLOROBUTADIENE							1.37963 U	0.08382 U	0.08798 U							
HEXACHLOROETHANE							3.01958 U	0.18345 U	0.19256 U							
ISOPROPYLBENZENE							0.80696 U	0.04903 U	0.05146 U							
M+P-XYLENE																
METHACRYLONITRILE							5.54456 U	0.33685 U	0.35359 U							
METHYL ACETATE																
METHYL ACRYLATE							1.4317 U	0.08698 U	0.0913 U							
METHYL BROMIDE	0 U	0 U	0 U	0 U	0 U	0 U	2.31674 U	0.14075 U	0.14774 U		0 U	0 U	0 U	0 U	0 U	0 U
METHYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	1.53582 U	0.09331 U	0.09794 U		0 U	0 U	0 U	0 U	0 U	0 U
METHYL ETHYL KETONE	0 U	0 U	0 U	0 U	0 U	0 U	1.50979 U	0.09173 U	0.09628 U		0 U	0 U	0 U	0 U	0 U	0 U
METHYL IODIDE							6.42961 U	0.39062 U	0.41003 U							
METHYL ISOBUTYL KETONE	0 U	0 U	0 U	0 U	0 U	0 U	1.82216 U	0.1107 U	0.1162 U		0 U	0 U	0 U	0 U	0 U	
METHYL METHACRYLATE							2.08247 U	0.12652 U	0.1328 U							
METHYLENE BROMIDE							0.96314 U	0.05851 U	0.06142 U							
METHYLENE CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	52.3352	0.10505	0.09628 U		0 U	0 U	0 U	0 U	0 U	0.0016 J
METHYL-T-BUTYL ETHER							1.22345 U	0.07433 U	0.07802 U							
NAPHTHALENE							0.72886 U	0.04428 U	0.04648 U							
N-BUTYLBENZENE							1.04123 U	0.06326 U	0.0664 U							
N-PROPYLBENZENE							0.91108 U	0.05535 U	0.0581 U							
O-XYLENE							1.04123 U	0.06326 U	0.0664 U							
P-CHLOROTOLUENE							1.45773 U	0.08856 U	0.09296 U							
PENTACHLOROETHANE							2.26468 U	0.13759 U	0.14442 U							
P-ISOPROPYLTOLUENE							0.83299 U	0.05061 U	0.05312 U							
PROPANENITRILE							14.08267 U	0.85558 U	0.89807 U							
SEC-BUTYLBENZENE							1.11933 U	0.068 U	0.07138 U							
STYRENE	0 U	0 U	0 U	0 U	0 U	0 U	1.4317 U	0.08698 U	0.0913 U		0 U	0 U		0 U	0 U	
t-Butyl Alcohol																
TERT-BUTYLBENZENE							1.11933 U	0.068 U	0.07138 U							
TETRACHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0.78092 U	0.04744 U	0.0498 U		0 U	0 U	0 U	0 U	0 U	0 U
TETRAHYDROFURAN							15.35818 U	0.93307 U	0.97942 U							
TOLUENE	0 U	0.0043 J	0.0025 J	0.0048 J	0.02	0 U	1.06127 J	0.068 U	0.07138 U		0.0024	0.018	0.012	0 U	0 U	0.0058
TRANS-1,4-DICHLORO-2-BUTENE							2.96751 U	0.18029 U	0.18924 U							
TRICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	1.11933 U	0.068 U	0.07138 U		0 U	0 U	0 U	0 U	0 U	0 U
TRICHLOROFLUOROMETHANE							0.93711 U	0.05693 U	0.05976 U			0 U	0 U	0 U	0 U	0 U
VINYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	3.72241 U	0.22615 U	0.23738 U		0 U	0 U	0 U	0 U	0 U	0 U
XYLENES,TOTAL	0 U	0.0062	0 U	0.002 J	0.21	0 U	2.55102 U	0.15498 U	0.16268 U		0.036	0 U	0.15	0 U	0 U	0 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE				0 U	0 U	0 U					1.5					
1,2-DICHLOROBENZENE				0 U	0 U	0 U					0 U					
1,2-DIPHENYLHYDRAZINE				0 U	0 U	0 U					0 U					
1,3-DICHLOROBENZENE				0 U	0 U	0 U					0 U					
1,4-DICHLOROBENZENE				0 U	0 U	0 U					0 U					
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL						0 U					0 U					
2,4-DICHLOROPHENOL						0 U					0 U					
2,4-DIMETHYLPHENOL						0 U					0 U					
2,4-DINITROPHENOL						0 U					0 U					
2,4-DINITROTOLUENE				0 U	0 U	0 U					0 U					
2,6-DINITROTOLUENE				0 U	0 U	0 U					0 U					

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-2 SB5-2-110992-5-5.5 11/9/1992 5-5.5 ft	SB5-3 SB5-3-110992-3.5-4 11/9/1992 3.5-4 ft	SB5-3 SB5-3-110992-5-6 11/9/1992 5-6 ft	SB5-6 SB5-6-082294-2-4 8/22/1994 2-4 ft	SB5-6 TS-SB5-6-5-10-022504 2/25/2004 5-10 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SB5-8 SB5-8-081894-3-4 8/18/1994 3-4 ft	SB5-8 SB5-8-081894-4-5 8/18/1994 4-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft	SBR13 SBR13-110692-3-4 11/6/1992 3-4 ft	SBR13 SBR13-110692-7-8 11/6/1992 7-8 ft	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR14 SBR14-110692-4-5 11/6/1992 4-5 ft
2-CHLORONAPHTHALENE				0 U	0 U	0 U					0 U					
2-CHLOROPHENOL						0 U					0 U					
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE				0 U	0 U											
2-NITROPHENOL						0 U					0 U					
3,3-DICHLOROBENZIDINE				0 U	0 U	0 U					0 U					
3-NITROANILINE				0 U	0 U											
4-BROMOPHENYL PHENYL ETHER				0 U	0 U	0 U					0 U					
4-CHLORO-3-METHYLPHENOL						0 U					0 U					
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER				0 U	0 U	0 U					0 U					
4-NITROANILINE				0 U	0 U											
4-NITROPHENOL						0 U					0 U					
ACENAPHTHENE				0 U	0 U	0 U					0 U					
ACENAPHTHYLENE				0 U	0 U	0 U					0 U					
ACETOPHENONE																
ANTHRACENE				0 U	0 U	0 U					0 U					
ATRAZINE																
BENZALDEHYDE																
BENZIDINE				0 U	0 U	0 U					0 U					
BENZO(A)ANTHRACENE				0 U	0 U	0 U					0 U					
BENZO(A)PYRENE				0 U	0 U	0 U					0 U					
BENZO(B)FLUORANTHENE				0 U	0 U	0 U					0 U					
BENZO(GHI)PERYLENE				0 U	0 U	0 U					0 U					
BENZO(K)FLUORANTHENE				0 U	0 U	0 U					0 U					
BENZYL BUTYL PHTHALATE				0 U	0 U	0 U					0 U					
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE				0 U	0 U	0 U					0 U					
BIS(2-CHLOROETHYL) ETHER				0 U	0 U	0 U					0 U					
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER				0 U	0 U	0 U					0 U					
BIS(2-ETHYLHEXYL)PHTHALATE				0 U	0.083	0.45					0.39					
CAPROLACTAM																
CARBAZOLE				0 U	0 U											
CHRYSENE				0 U	0 U	0 U					0 U					
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE				0 U	0 U	0 U					0 U					
DIBENZOFURAN																
DIETHYL PHTHALATE				0 U	0 U	0 U					0 U					
DIMETHYL PHTHALATE				0 U	0 U	0 U					0 U					
DI-N-BUTYL PHTHALATE				0 U	0 U	0 U					0 U					
DI-N-OCTYL PHTHALATE				0 U	0 U	0.098					0 U					
FLUORANTHENE				0 U	0 U	0 U					0 U					
FLUORENE				0 U	0 U	0 U					0 U					
HEXACHLOROBENZENE				0 U	0 U	0 U					0 U					
HEXACHLOROBUTADIENE				0 U	0 U	0 U					0 U					
HEXACHLOROCYCLOPENTADIENE				0 U	0 U	0 U					0 U					
HEXACHLOROETHANE				0 U	0 U	0 U					0 U					
INDENO(1,2,3-CD)PYRENE				0 U	0 U	0 U					0 U					
ISOPHORONE				0 U	0 U	0 U					0 U					
NAPHTHALENE				0 U	0 U	0 U					0 U					

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-2 SB5-2-110992-5-5.5 11/9/1992 5-5.5 ft	SB5-3 SB5-3-110992-3.5-4 11/9/1992 3.5-4 ft	SB5-3 SB5-3-110992-5-6 11/9/1992 5-6 ft	SB5-6 SB5-6-082294-2-4 8/22/1994 2-4 ft	SB5-6 TS-SB5-6-5-10-022504 2/25/2004 5-10 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SB5-8 SB5-8-081894-3-4 8/18/1994 3-4 ft	SB5-8 SB5-8-081894-4-5 8/18/1994 4-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft	SBR13 SBR13-110692-3-4 11/6/1992 3-4 ft	SBR13 SBR13-110692-7-8 11/6/1992 7-8 ft	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR14 SBR14-110692-4-5 11/6/1992 4-5 ft
NITROBENZENE				0 U	0 U	0 U					0 U					
N-NITROSODIMETHYLAMINE				0 U	0 U	0 U					0 U					
N-NITROSODI-N-PROPYLAMINE				0 U	0 U	0 U					0 U					
N-NITROSODIPHENYLAMINE				0 U	0 U	0 U					0 U					
PENTACHLOROPHENOL						0 U					0 U					
PHENANTHRENE				0 U	0 U	0 U					0 U					
PHENOL						0 U					0 U					
PYRENE				0 U	0 U	0 U					0 U					
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM						5.6				7.7	5.3					
ANTIMONY						0.0071 U				0.0063 U	0.0065 U					
ARSENIC						0.0012 U				0.0028	0.002					
BARIUM						0.024 U				0.021 U	0.022 U					
BERYLLIUM						0.00059 U				0.00053 U	0.00054 U					
CADMIUM						0.00059 U				0.00053 U	0.00054 U					
CALCIUM						15				4.9	1.9					
CHROMIUM						0.0091				0.014	0.016					
COBALT						0.0059 U				0.0053 U	0.0054 U					
COPPER						0.016				0.05	0.032					
IRON						24				15	9.9					
LEAD						0.012 U				0.013	0.015					
MAGNESIUM						2.4				2.6	0.98					
MANGANESE						0.093				0.08	0.045					
MERCURY						0.0001 U				0.000091 U	0.00011 U					
NICKEL						0.007				0.0095	0.0044					
POTASSIUM						0.59 U				0.53 U	0.54 U					
SELENIUM						0.012 U				0.011 U	0.011 U					
SILVER						0.0012 U				0.0011 U	0.0011 U					
SODIUM						0.59 U				0.53 U	0.54 U					
THALLIUM						0.0012 U				0.0011 U	0.0011 U					
VANADIUM						0.019				0.036	0.026					
ZINC						0.016				0.16	0.14					
% Solid **(%)**						85	76	75.3		95	92					
CYANIDE						0.001 U					0.001 U					
Moisture **(%)**																
PH **(pH units)**	9.3	7.7	7.6	7.6	7.6							7	7.9	6.8	5.6	5.2
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-7-8 11/6/1992 7-8 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR15 SBR15-110692-3-4 11/6/1992 3-4 ft	SBR15 SBR15-110692-5-6 11/6/1992 5-6 ft	SBR22 SBR22-081594-3-4 8/15/1994 3-4 ft	SBR22 SBR22-081594-5-6 8/15/1994 5-6 ft	SRI-12 SRI-12-4-8-19-09 8/19/2009 3-5 ft	SRI-12 SRI-12-8-8-19-09 8/19/2009 7-9 ft	SRI-14 SRI-14-4-8-19-09 8/19/2009 3-5 ft	SRI-14 SRI-14-8-8-19-09 8/19/2009 7-9 ft	SRI-16 SRI-16-4-8-6-09 8/6/2009 3-5 ft	SRI-16 SRI-16-8-8-6-09 8/6/2009 7-9 ft	SRI-18 SRI-18-4-071409 7/14/2009 3-5 ft	SRI-18 SRI-18-8-071409 7/14/2009 7-9 ft	SRI-2 SRI-2-4-8-6-09 8/6/2009 3-5 ft	SRI-2 SRI-2-8-8-6-09 8/6/2009 7-9 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
1,1,2,2-TETRACHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.009 J	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.002	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
1,1-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
1,1-DICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE							0.072 U	0.001 U	0.001 UJ	0.001 U	0.001	0.001 U	1.3	0.24	0.081 U	0.063 U
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE							0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.58	0.081 U	0.063 U
1,2-DIBROMO-3-CHLOROPROPANE							0.14 U	0.002 U	0.002 UJ	0.002 U	0.002 U	0.002 U	0.2 U	0.11 U	0.16 U	0.13 U
1,2-DIBROMOETHANE							0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
1,2-DICHLOROBENZENE	0 U	0 U	0 U	0 U			0.072 U	0.001 U	0.001 UJ	0.001 U	0.004	0.001 U	19	16	0.081 U	0.063 U
1,2-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	1.4	0.081 U	0.063 U
1,2-DICHLOROETHYLENE					0 U	0 U										
1,2-DICHLOROPROPANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U			0.081 U	0.063 U
1,2-TRANS-DICHLOROETHYLENE	0 U	0 U	0 U	0 U			0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.095	0.081 U	0.063 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U			0.081 U	0.063 U
1,3-DICHLOROBENZENE	0 U	0 U	0 U	0.0096			0.072 U	0.001 U	0.001 UJ	0.001 U	0.012	0.001 U	0.59	0.055 U	0.081 U	0.063 U
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
1,4-DICHLOROBENZENE	0 U	0 U	0 U	0.035			0.072 U	0.001 U	0.001 UJ	0.001 U	0.033	0.001 U	1.8	0.14	0.081 U	0.063 U
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE																
2-HEXANONE					0 U	0 U										
3-CHLOROPROPENE																
ACETONE	0.084	4.6	9.9	3.3	0 U	0 U	0.5 U	0.022	0.015	0.01	0.13	0.039		2.4 J	0.57 U	0.44 U
ACROLEIN							1.4 U	0.021 U	0.022 U	0.021 U	0.02 U	0.02 U	2 U	1.1 U	1.6 U	1.3 U
ACRYLONITRILE							0.29 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.39 U	0.22 U	0.33 U	0.25 U
BENZENE	0 U	0 U	0 U	0 U	0 U	0.011	0.32	0.0005 U	0.0006 U	0.0005 U	0.014	0.0005 U	0.45 J	0.6 J	0.041 U	0.032 U
BROMOBENZENE																
BROMOCHLOROMETHANE																
BROMOFORM	0 U	0 U	0 U	0 U	0 U	0 U	0.072 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
CARBON DISULFIDE	0.0059 J	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.002	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
CARBON TETRACHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
CHLOROBENZENE	0 U	0 U	0 U	0 U	0.093	1.6	0.89	0.004	0.001 U	0.001 U	0.043	0.002	41	0.055 U	0.081 U	0.063 U
CHLORODIBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
CHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.14 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.2 UJ	0.11 UJ	0.16 U	0.13 U
CHLOROFORM	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U			0.081 U	0.063 U
DICHLORODIFLUOROMETHANE							0.14 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.2 U	0.11 U	0.16 U	0.13 U
DIETHYL ETHER																
ETHYL METHACRYLATE																

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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-7-8 11/6/1992 7-8 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR15 SBR15-110692-3-4 11/6/1992 3-4 ft	SBR15 SBR15-110692-5-6 11/6/1992 5-6 ft	SBR22 SBR22-081594-3-4 8/15/1994 3-4 ft	SBR22 SBR22-081594-5-6 8/15/1994 5-6 ft	SRI-12 SRI-12-4-8-19-09 8/19/2009 3-5 ft	SRI-12 SRI-12-8-8-19-09 8/19/2009 7-9 ft	SRI-14 SRI-14-4-8-19-09 8/19/2009 3-5 ft	SRI-14 SRI-14-8-8-19-09 8/19/2009 7-9 ft	SRI-16 SRI-16-4-8-6-09 8/6/2009 3-5 ft	SRI-16 SRI-16-8-8-6-09 8/6/2009 7-9 ft	SRI-18 SRI-18-4-071409 7/14/2009 3-5 ft	SRI-18 SRI-18-8-071409 7/14/2009 7-9 ft	SRI-2 SRI-2-4-8-6-09 8/6/2009 3-5 ft	SRI-2 SRI-2-8-8-6-09 8/6/2009 7-9 ft
ETHYLBENZENE	0 U	0 U	0 U	0.0025 J	0.0041	0.026	3.8	0.001 U	0.001 U	0.001 U	0.068	0.001 U	6	20	0.093	0.063 U
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE							0.49	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.2 U	0.11	0.16 U	0.13 U
METHYL ACRYLATE																
METHYL BROMIDE	0 U	0 U	0 U	0 U	0 U	0 U	0.14 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.2 UJ	0.11 UJ	0.16 U	0.13 U
METHYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0.14 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.2 U	0.11 U	0.16 U	0.13 U
METHYL ETHYL KETONE	0 U	0 U	0 U	0 U	0 U	0 U	0.29 U	0.004 U	0.004 U	0.004 U	0.022	0.004 U	0.39 U	0.22 U	0.33 U	0.25 U
METHYL IODIDE																
METHYL ISOBUTYL KETONE					0 U	0 U	0.22 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U		0.18 J	0.24 U	0.19 U
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	0.0046 J	0 U	0 U	0 U	0 U	0 U	0.14 U	0.002 U	0.002 U	0.002 U	0.003	0.002 U	0.2 U	50	0.16 U	0.13 U
METHYL-T-BUTYL ETHER							0.036 U	0.0005 U	0.0006 U	0.0005 U	0.0005 U	0.0005 U	0.049 U	0.028 U	0.041 U	0.032 U
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE																
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE					0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
t-Butyl Alcohol							1.4 U	0.021 U	0.022 U	0.021 U	0.02 U	0.02 U	2 U	1.1 U	1.6 U	1.3 U
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0.011	0.0052 J	0 U	0.0062	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.079	0.081 U	0.063 U
TETRAHYDROFURAN																
TOLUENE	0.034	0.014	0 U	0.019	0.016	0.33	1.5	0.002	0.001 U	0.002	0.094	0.001 U	13	36	0.081 U	0.063 U
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.67 J	0.081 U	0.063 U
TRICHLOROFLUOROMETHANE	0 U	0 U	0 U	0 U			0.14 U	0.002 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.2 U	0.11 U	0.16 U	0.13 U
VINYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0.072 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.098 U	0.055 U	0.081 U	0.063 U
XYLENES,TOTAL	0 U	0 U	0 U	0.011	0.026	0.15	11	0.001 U	0.001 U	0.001 U	0.26	0.001 U	40	85	0.4	0.11
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE					0 U	0 U										
1,2-DICHLOROBENZENE					0 U	0 U										
1,2-DIPHENYLHYDRAZINE					0 U	0 U										
1,3-DICHLOROBENZENE					0 U	0 U										
1,4-DICHLOROBENZENE					0 U	0.18										
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL					0 U	0 U										
2,4-DICHLOROPHENOL					0 U	0 U										
2,4-DIMETHYLPHENOL					0 U	0 U										
2,4-DINITROPHENOL					0 U	0 U										
2,4-DINITROTOLUENE					0 U	0 U										
2,6-DINITROTOLUENE					0 U	0 U										

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-7-8 11/6/1992 7-8 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR15 SBR15-110692-3-4 11/6/1992 3-4 ft	SBR15 SBR15-110692-5-6 11/6/1992 5-6 ft	SBR22 SBR22-081594-3-4 8/15/1994 3-4 ft	SBR22 SBR22-081594-5-6 8/15/1994 5-6 ft	SRI-12 SRI-12-4-8-19-09 8/19/2009 3-5 ft	SRI-12 SRI-12-8-8-19-09 8/19/2009 7-9 ft	SRI-14 SRI-14-4-8-19-09 8/19/2009 3-5 ft	SRI-14 SRI-14-8-8-19-09 8/19/2009 7-9 ft	SRI-16 SRI-16-4-8-6-09 8/6/2009 3-5 ft	SRI-16 SRI-16-8-8-6-09 8/6/2009 7-9 ft	SRI-18 SRI-18-4-071409 7/14/2009 3-5 ft	SRI-18 SRI-18-8-071409 7/14/2009 7-9 ft	SRI-2 SRI-2-4-8-6-09 8/6/2009 3-5 ft	SRI-2 SRI-2-8-8-6-09 8/6/2009 7-9 ft
2-CHLORONAPHTHALENE					0 U	0 U										
2-CHLOROPHENOL					0 U	0 U										
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL					0 U	0 U										
3,3-DICHLOROBENZIDINE					0 U	0 U										
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER					0 U	0 U										
4-CHLORO-3-METHYLPHENOL					0 U	0 U										
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER					0 U	0 U										
4-NITROANILINE																
4-NITROPHENOL					0 U	0 U										
ACENAPHTHENE					0 U	0 U										
ACENAPHTHYLENE					0 U	0 U										
ACETOPHENONE																
ANTHRACENE					0 U	0 U										
ATRAZINE																
BENZALDEHYDE																
BENZIDINE					0 U	0 U										
BENZO(A)ANTHRACENE					0 U	0 U										
BENZO(A)PYRENE					0 U	0 U										
BENZO(B)FLUORANTHENE					0 U	0 U										
BENZO(GHI)PERYLENE					0 U	0 U										
BENZO(K)FLUORANTHENE					0 U	0 U										
BENZYL BUTYL PHTHALATE					0 U	0 U										
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE					0 U	0 U										
BIS(2-CHLOROETHYL) ETHER					0 U	0 U										
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER					0 U	0 U										
BIS(2-ETHYLHEXYL)PHTHALATE					0.17	0.36										
CAPROLACTAM																
CARBAZOLE																
CHRYSENE					0 U	0 U										
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE					0 U	0 U										
DIBENZOFURAN																
DIETHYL PHTHALATE					0 U	0 U										
DIMETHYL PHTHALATE					0 U	0 U										
DI-N-BUTYL PHTHALATE					0 U	0 U										
DI-N-OCTYL PHTHALATE					0 U	0 U										
FLUORANTHENE					0 U	0 U										
FLUORENE					0 U	0 U										
HEXACHLOROBENZENE					0 U	0 U										
HEXACHLOROBUTADIENE					0 U	0 U										
HEXACHLOROCYCLOPENTADIENE					0 U	0 U										
HEXACHLOROETHANE					0 U	0 U										
INDENO(1,2,3-CD)PYRENE					0 U	0 U										
ISOPHORONE					0 U	0 U										
NAPHTHALENE					0 U	0 U										

Attachment A
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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-7-8 11/6/1992 7-8 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR15 SBR15-110692-3-4 11/6/1992 3-4 ft	SBR15 SBR15-110692-5-6 11/6/1992 5-6 ft	SBR22 SBR22-081594-3-4 8/15/1994 3-4 ft	SBR22 SBR22-081594-5-6 8/15/1994 5-6 ft	SRI-12 SRI-12-4-8-19-09 8/19/2009 3-5 ft	SRI-12 SRI-12-8-8-19-09 8/19/2009 7-9 ft	SRI-14 SRI-14-4-8-19-09 8/19/2009 3-5 ft	SRI-14 SRI-14-8-8-19-09 8/19/2009 7-9 ft	SRI-16 SRI-16-4-8-6-09 8/6/2009 3-5 ft	SRI-16 SRI-16-8-8-6-09 8/6/2009 7-9 ft	SRI-18 SRI-18-4-071409 7/14/2009 3-5 ft	SRI-18 SRI-18-8-071409 7/14/2009 7-9 ft	SRI-2 SRI-2-4-8-6-09 8/6/2009 3-5 ft	SRI-2 SRI-2-8-8-6-09 8/6/2009 7-9 ft
NITROBENZENE					0 U	0 U										
N-NITROSODIMETHYLAMINE					0 U	0 U										
N-NITROSODI-N-PROPYLAMINE					0 U	0 U										
N-NITROSODIPHENYLAMINE					0 U	0 U										
PENTACHLOROPHENOL					0 U	0 U										
PHENANTHRENE					0 U	0 U										
PHENOL					0 U	0 U										
PYRENE					0 U	0 U										
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM					3.7	2.1										
ANTIMONY					0.0069 U	0.007 U										
ARSENIC					0.002	0.0012 U										
BARIUM					0.023 U	0.023 U										
BERYLLIUM					0.00057 U	0.00058 U										
CADMIUM					0.00057 U	0.00058 U										
CALCIUM					0.89	0.58 U										
CHROMIUM					0.011	0.015										
COBALT					0.0057 U	0.0058 U										
COPPER					0.003	0.0034										
IRON					8.3	2.8										
LEAD					0.011 U	0.012 U										
MAGNESIUM					0.57 U	0.58 U										
MANGANESE					0.014	0.006										
MERCURY					0.00011 U	0.0001 U										
NICKEL					0.0046 U	0.0047 U										
POTASSIUM					0.57 U	0.58 U										
SELENIUM					0.011 U	0.012 U										
SILVER					0.0011 U	0.0012 U										
SODIUM					0.57 U	0.58 U										
THALLIUM					0.0011 U	0.0012 U										
VANADIUM					0.02	0.017										
ZINC					0.024	0.0066										
% Solid **(%)**					87	86										
CYANIDE					0.001 U	0.001 U										
Moisture **(%)**							27.9	12.5	15.3	7.3	9.4	12.9	13.2	18.6	20.5	17.7
PH **(pH units)**	4.3	6.9	6.9	6.9												
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON					61000											

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-21 CPS-SRI-21-4-7-27-09 7/27/2009 3-5 ft	SRI-21 CPS-SRI-21-8-7-27-09 7/27/2009 7-9 ft	SRI-4 SRI-4-4-8-6-09 8/6/2009 3-5 ft	SRI-4 SRI-4-8-8-6-09 8/6/2009 7-9 ft	SRI-SM-1 SRI-1-4-8-20-09 8/20/2009 3-5 ft	SRI-SM-1 SRI-1-8-8-20-09 8/20/2009 7-9 ft	SRI-SM-11 SRI-11-4-7-17-09 7/17/2009 3-5 ft	SRI-SM-11 SRI-11-8-7-17-09 7/17/2009 7-9 ft	SRI-SM-13 SRI-13-4-8-19-09 8/19/2009 3-5 ft	SRI-SM-13 SRI-13-8-8-19-09 8/19/2009 7-9 ft	SRI-SM-15 SRI-15-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-15 SRI-15-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-17 SRI-17-4-7-16-09 7/16/2009 3-5 ft	SRI-SM-17 SRI-17-8-7-16-09 7/16/2009 7-9 ft	SRI-SM-19 SRI-19-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-19 SRI-19-8-7-28-09 7/28/2009 7-9 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,1,2,2-TETRACHLOROETHANE	0.057 U	0.053 U	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,1-DICHLOROETHANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,1-DICHLOROETHYLENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE																
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE	0.057 U	0.078	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.16	2 U	1.3	2.2	0.053 U	1.2	53	55
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE	0.057 U	1.3	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.8	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,2-DIBROMO-3-CHLOROPROPANE	0.11 U	0.11 U	0.003 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.13 U	3.9 U	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.12 U
1,2-DIBROMOETHANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,2-DICHLOROBENZENE	0.061	0.58	0.001 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.19	2 U	5.4	7.7	0.053 U	0.89	49	9.9
1,2-DICHLOROETHANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.095	0.061 U	0.06 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U			0.061 U	0.06 U
1,2-TRANS-DICHLOROETHYLENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U			0.061 U	0.06 U
1,3-DICHLOROBENZENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.087	2 U	0.06 U	0.061 U	0.053 U	0.089	0.12	0.41
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
1,4-DICHLOROBENZENE	0.4	0.08	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.62	2 U	0.06 U	0.18	0.053 U	0.27	0.74	2.3
1,4-DIOXANE																
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE																
2-HEXANONE																
3-CHLOROPROPENE																
ACETONE	0.4 U	0.37 U	0.021 J	0.012	0.008 U	0.029	0.008 U	0.013	0.44 U	14 U	2.5	0.43 U			0.43 U	0.42 U
ACROLEIN	1.1 U	1.1 U	0.026 UJ	0.021 U	0.023 U	0.023 U	0.023 U	0.024 U	1.3 U	39 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
ACRYLONITRILE	0.23 U	0.21 U	0.005 UJ	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	7.8 U	0.24 U	0.25 U	0.21 U	0.22 U	0.25 U	0.24 U
BENZENE	0.65	12	0.0006 U	0.0005 U	0.0006 U	0.0006 U	0.001	0.0006 U	0.28	0.98 U	0.7	0.042	0.32 J	0.088 J	0.062	0.14
BROMOBENZENE																
BROMOCHLOROMETHANE																
BROMOFORM	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 UJ	2 UJ	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
CARBON DISULFIDE	0.057 U	0.053 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.003	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
CARBON TETRACHLORIDE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
CHLOROBENZENE	0.71	0.38	0.001 U	0.001 U	0.009	0.001	0.003	0.003	4.3	2 U	0.06 U	0.76	5.2	1.1	0.64	2.8
CHLORODIBROMOMETHANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
CHLOROETHANE	0.11 U	0.11 U	0.003 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.13 U	3.9 U	0.12 U	0.12 U	0.11 UJ	0.11 UJ	0.12 U	0.12 U
CHLOROFORM	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U			0.061 U	0.06 U
DICHLORODIFLUOROMETHANE	0.11 U	0.11 U	0.003 U	0.002 U	0.002 U	0.002 U	0.002 UJ	0.002 UJ	0.13 U	3.9 U	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.12 U
DIETHYL ETHER																
ETHYL METHACRYLATE																

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CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-21 CPS-SRI-21-4-7-27-09 7/27/2009 3-5 ft	SRI-21 CPS-SRI-21-8-7-27-09 7/27/2009 7-9 ft	SRI-4 SRI-4-4-8-6-09 8/6/2009 3-5 ft	SRI-4 SRI-4-8-8-6-09 8/6/2009 7-9 ft	SRI-SM-1 SRI-1-4-8-20-09 8/20/2009 3-5 ft	SRI-SM-1 SRI-1-8-8-20-09 8/20/2009 7-9 ft	SRI-SM-11 SRI-11-4-7-17-09 7/17/2009 3-5 ft	SRI-SM-11 SRI-11-8-7-17-09 7/17/2009 7-9 ft	SRI-SM-13 SRI-13-4-8-19-09 8/19/2009 3-5 ft	SRI-SM-13 SRI-13-8-8-19-09 8/19/2009 7-9 ft	SRI-SM-15 SRI-15-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-15 SRI-15-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-17 SRI-17-4-7-16-09 7/16/2009 3-5 ft	SRI-SM-17 SRI-17-8-7-16-09 7/16/2009 7-9 ft	SRI-SM-19 SRI-19-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-19 SRI-19-8-7-28-09 7/28/2009 7-9 ft
ETHYLBENZENE	1.7	0.71	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.98	2 U	0.73	0.23	0.053 U	0.08	4.8	2.2
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE																
M+P-XYLENE																
METHACRYLONITRILE																
METHYL ACETATE	0.11 U	0.11 U	0.003 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.15	3.9 U	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.12 U
METHYL ACRYLATE																
METHYL BROMIDE	0.11 U	0.11 U	0.003 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.13 U	3.9 U	0.12 U	0.12 U			0.12 U	0.12 U
METHYL CHLORIDE	0.11 U	0.11 U	0.003 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.13 U	3.9 U	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.12 U
METHYL ETHYL KETONE	0.23 U	0.21 U	0.005 UJ	0.004 U	0.005 U	0.005 U	0.005 U	0.005 U	0.25 U	7.8 U	0.24 U	0.25 U	0.21 U	0.22 U	0.25 U	0.24 U
METHYL IODIDE																
METHYL ISOBUTYL KETONE	0.17 U	0.16 U	0.004 UJ	0.003 U	0.003 U	0.003 U	0.003 UJ	0.004 UJ	0.19 U	5.9 U	0.18 U	0.18 U			0.18 U	0.18 U
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	0.11 U	0.11 U	0.003 U	0.002 U	0.002 U	0.005	0.002 U	0.002 U	0.13 U	3.9 U	1.2	0.12 U	0.11 U	0.13	0.12 U	0.12 U
METHYL-T-BUTYL ETHER	0.029 U	0.026 U	0.0006 U	0.0005 U	0.0006 U	0.0006 U	0.0006 UJ	0.0006 UJ	0.032 U	0.98 U	0.03 U	0.031 U	0.027 U	0.028 U	0.031 U	0.03 U
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE																
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
t-Butyl Alcohol	1.1 U	1.1 U	0.026 U	0.021 U	0.023 U	0.023 U	0.023 U	0.024 U	1.3 U	39 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
TETRAHYDROFURAN																
TOLUENE	8.7	5.1	0.001 U	0.001 U	0.001 U	0.002	0.001 U	0.001 U	0.063 U	2 U	3.5	1	0.053 U	3	110	19
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.085			0.065	0.06 U
TRICHLOROFLUOROMETHANE	0.11 U	0.11 U	0.003 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.13 U	3.9 U	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.12 U
VINYL CHLORIDE	0.057 U	0.053 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U	2 U	0.06 U	0.061 U	0.053 U	0.055 U	0.061 U	0.06 U
XYLENES,TOTAL	9.5	3	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	2.2	2 U	5	1.5	0.053 U	0.52	23	12
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
2,4,6-TRICHLOROPHENOL					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
2,4-DICHLOROPHENOL					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
2,4-DIMETHYLPHENOL					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
2,4-DINITROPHENOL					0.77 U	0.8 U	0.77 UJ	0.8 UJ	0.82 U	0.74 U	0.78 U	0.77 U	0.76 UJ	0.82 UJ	0.81 U	0.86 U
2,4-DINITROTOLUENE					0.077 U	0.08 U	0.077 UJ	0.08 UJ	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 UJ	0.081 U	0.086 U
2,6-DINITROTOLUENE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-21 CPS-SRI-21-4-7-27-09 7/27/2009 3-5 ft	SRI-21 CPS-SRI-21-8-7-27-09 7/27/2009 7-9 ft	SRI-4 SRI-4-4-8-6-09 8/6/2009 3-5 ft	SRI-4 SRI-4-8-8-6-09 8/6/2009 7-9 ft	SRI-SM-1 SRI-1-4-8-20-09 8/20/2009 3-5 ft	SRI-SM-1 SRI-1-8-8-20-09 8/20/2009 7-9 ft	SRI-SM-11 SRI-11-4-7-17-09 7/17/2009 3-5 ft	SRI-SM-11 SRI-11-8-7-17-09 7/17/2009 7-9 ft	SRI-SM-13 SRI-13-4-8-19-09 8/19/2009 3-5 ft	SRI-SM-13 SRI-13-8-8-19-09 8/19/2009 7-9 ft	SRI-SM-15 SRI-15-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-15 SRI-15-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-17 SRI-17-4-7-16-09 7/16/2009 3-5 ft	SRI-SM-17 SRI-17-8-7-16-09 7/16/2009 7-9 ft	SRI-SM-19 SRI-19-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-19 SRI-19-8-7-28-09 7/28/2009 7-9 ft
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
2-METHYL-4,6-DINITROPHENOL					0.19 U	0.2 U	0.19 UJ	0.2 UJ	0.2 U	0.18 U	0.19 U	0.19 U	0.19 UJ	0.21 UJ	0.2 U	0.21 U
2-METHYLNAPHTHALENE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
2-NITROANILINE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE					0.12 U	0.12 U	0.12 UJ	0.12 UJ	0.12 U	0.11 U	0.12 U	0.12 U	0.11 UJ	0.12 UJ	0.12 U	0.13 U
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
ACENAPHTHYLENE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
ACETOPHENONE					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
ANTHRACENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
ATRAZINE																
BENZALDEHYDE					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
BENZIDINE					1.3 UJ	1.4 UJ	1.3 UJ	1.4 UJ	1.4 UJ	1.3 UJ	1.4 U	1.3 U	1.3 UJ	1.4 UJ	1.4 U	1.5 U
BENZO(A)ANTHRACENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
BENZO(A)PYRENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
BENZO(B)FLUORANTHENE					0.084	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
BENZO(GHI)PERYLENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
BENZO(K)FLUORANTHENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
BENZYL BUTYL PHTHALATE					0.077 U	0.08 U	0.077 UJ	0.08 UJ	0.082 U	0.074 U	0.078 U	0.077 U	0.076 UJ	0.082 UJ	0.081 U	0.086 U
Biphenyl					0.045	0.04 U	0.038 U	0.04 U	20	5.2	2.1	0.47	0.038 U	0.041 U	0.21	0.56
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
Bis(2-chloroisopropyl) ether					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 U	0.041 U	0.043 U
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE					0.097	0.08 U	0.077 UJ	0.08 UJ	0.082 U	0.074 U	0.078 U	0.077 U	0.076 UJ	0.082 UJ	1.1	0.57
CAPROLACTAM					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
CARBAZOLE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
CHRYSENE					0.073	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
CRESOL,O					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 UJ	0.082 U	0.081 U	0.086 U
CRESOL,P					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.12	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
DIBENZO(A,H)ANTHRACENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
DIBENZOFURAN																
DIETHYL PHTHALATE					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
DIMETHYL PHTHALATE					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
DI-N-BUTYL PHTHALATE					0.077 U	0.08 U	0.077 UJ	0.08 UJ	0.082 U	0.074 U	0.078 U	0.077 U	0.076 UJ	0.082 UJ	0.27	1.6
DI-N-OCTYL PHTHALATE					0.077 U	0.08 U	0.077 UJ	0.08 UJ	0.082 U	0.074 U	0.078 U	0.077 U	0.076 UJ	0.082 UJ	0.081 U	0.086 U
FLUORANTHENE					0.069	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
FLUORENE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
HEXACHLOROBENZENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
HEXACHLOROBUTADIENE					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 U	0.081 U	0.086 U
HEXACHLOROCYCLOPENTADIENE					0.19 UJ	0.2 UJ	0.19 UJ	0.2 UJ	0.2 UJ	0.18 UJ	0.19 U	0.19 U	0.19 U	0.21 UJ	0.2 U	0.21 U
HEXACHLOROETHANE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
INDENO(1,2,3-CD)PYRENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
ISOPHORONE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
NAPHTHALENE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-21 CPS-SRI-21-4-7-27-09 7/27/2009 3-5 ft	SRI-21 CPS-SRI-21-8-7-27-09 7/27/2009 7-9 ft	SRI-4 SRI-4-4-8-6-09 8/6/2009 3-5 ft	SRI-4 SRI-4-8-8-6-09 8/6/2009 7-9 ft	SRI-SM-1 SRI-1-4-8-20-09 8/20/2009 3-5 ft	SRI-SM-1 SRI-1-8-8-20-09 8/20/2009 7-9 ft	SRI-SM-11 SRI-11-4-7-17-09 7/17/2009 3-5 ft	SRI-SM-11 SRI-11-8-7-17-09 7/17/2009 7-9 ft	SRI-SM-13 SRI-13-4-8-19-09 8/19/2009 3-5 ft	SRI-SM-13 SRI-13-8-8-19-09 8/19/2009 7-9 ft	SRI-SM-15 SRI-15-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-15 SRI-15-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-17 SRI-17-4-7-16-09 7/16/2009 3-5 ft	SRI-SM-17 SRI-17-8-7-16-09 7/16/2009 7-9 ft	SRI-SM-19 SRI-19-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-19 SRI-19-8-7-28-09 7/28/2009 7-9 ft
NITROBENZENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
N-NITROSODIMETHYLAMINE					0.077 U	0.08 U	0.077 U	0.08 U	0.082 U	0.074 U	0.078 U	0.077 U	0.076 U	0.082 UJ	0.081 U	0.086 U
N-NITROSODI-N-PROPYLAMINE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 U	0.041 U	0.041 U	0.043 U
N-NITROSODIPHENYLAMINE					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 U	0.041 U	0.043 U
PENTACHLOROPHENOL					0.19 U	0.2 U	0.19 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.21 U	0.2 U	0.21 U
PHENANTHRENE					0.039 U	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
PHENOL					0.039 U	0.04 U	0.038 U	0.04 U	0.041 U	0.037 U	0.32	0.1	0.038 U	0.39	0.041 U	0.25
PYRENE					0.062	0.04 U	0.038 UJ	0.04 UJ	0.041 U	0.037 U	0.039 U	0.039 U	0.038 UJ	0.041 UJ	0.041 U	0.043 U
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM					3110	6520	1300	3210	4230	7420	11600	452	2640	908	2680	2580
ANTIMONY					1.38 J	5.97 UJ	1.12 U	1.19 U	1.19 UJ	3.05 J	4.03	1.14 U	1.13 U	1.22 U	1.17 U	1.25 U
ARSENIC					2.79	5.67 U	1.08	1.13 U	2.18 J	16	32.8	1.09 U	2	1.16 U	1.11 U	1.19 U
BARIUM					8.31 J	3.94 J	5.67	4.44	6.19 J	13.3 J	21	2.22	9.65	6.19	6.38	6.27
BERYLLIUM					0.222 J	3.27	0.0762 U	0.081 U	0.336 J	2.08	2.71	0.0778 U	0.0771 U	0.083 U	0.0796 U	0.0849 U
CADMIUM					0.329 J	3.18	0.157 U	0.206	0.167 U	2.38	0.874	0.16 U	0.159 U	0.171 U	0.164 U	0.175 U
CALCIUM					299 J	141 J	105	57.3	155 J	194 J	119	35.5	257	36.3	1160	88
CHROMIUM					13.7 J	78.7 J	5.16	12.6	10.2 J	74.1 J	144	2.27	8.02	5.35	3.95	4.65
COBALT					0.574	1.47 J	0.213 U	0.515	0.227 U	1.18	1.32	0.217 U	0.215 U	0.232 U	0.223 U	0.237 U
COPPER					85 J	1310 J	0.697	1.81	21.8 J	132 J	17	0.476	2.42	0.498	2.09	1.27
IRON					13100	142000	695	19600	1150	59500	94200	1170	5810	371	1070	584
LEAD					18.5	12	2.69	2.07	4.63	10.7	11.4	0.687 U	5.27	3.14	2.3	1.63
MAGNESIUM					360	187	75.1	94	105	177	450	8.62	131	25.1	106	47.2
MANGANESE					24.9 J	17.1 J	9.46 J	21.1	9.54 J	17.7 J	25.6	1.52	17.9	7.64	10.7	2.37
MERCURY					0.013 U	0.0135 U	0.0125 U	0.0235	0.0139 U	0.0124 U	0.0215	0.0129 U	0.0127 U	0.0178	0.0137 U	0.0144 U
NICKEL					2.53 J	11.5 J	0.565	1.73	1.97 J	8.49 J	12.9	0.234	1.1	0.386	1.61	0.801
POTASSIUM					310	391	217	246	216	482	1330	26.4	280	160	266	176
SELENIUM					1.11 U	5.85 U	1.1 U	1.17 U	2.46 U	2.21 U	3.93	1.12 U	1.11 U	1.2 U	1.15 U	1.22 U
SILVER					0.204 U	0.215 U	0.202 U	0.214 U	0.215 U	0.195 U	0.206 U	0.206 U	0.204 U	0.22 U	0.211 U	0.225 U
SODIUM					62.5 J	44.5 U	41.8 U	44.4 U	45.4 J	40.3 U	262	42.7 U	42.3 U	53.1	43.7 U	46.5 U
THALLIUM					1.64 U	8.66 U	1.63 U	1.73 U	1.73 U	1.57 U	1.66 U	1.66 U	1.64 U	1.77 U	1.7 U	1.81 U
VANADIUM					23.2 J	175 J	4.4	23.1	6.4 J	112 J	304	3.32	12.8	9.34	5.95	5.45
ZINC					44.1 J	281 J	2.1	11.4	321 J	640 J	56.6	1.94	22.8	2.5	3.7	2.01
% Solid **(%)**																
CYANIDE																
Moisture **(%)**	15.4	14.5	14.9	11.1	13.5	17.1	13.4	16.9	18.6	9.3	14.2	13.5	12.7	18.9	17.9	22.2
PH **(pH units)**																
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SM-20 SRI-20-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-20 SRI-20-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-3 SRI-3-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-3 SRI-3-8-8-5-09 8/5/2009 7-9 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft
Semivolatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,1,2,2-TETRACHLOROETHANE	40	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE						0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U
1,1,2-TRICHLOROETHANE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,1-DICHLOROETHANE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,1-DICHLOROETHYLENE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE						0.001 U		0.001 U		1.6		0.18		0.001 U		450
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE	170	17	0.001 U	0.001 U		0.001 U		0.001 U		3.5		4.2		0.001 U		300
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE	27	1.9	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,2-DIBROMO-3-CHLOROPROPANE	3.3 U	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U
1,2-DIBROMOETHANE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,2-DICHLOROBENZENE	8700	890	0.001 U	0.004		0.001 U		0.001 U		0.056 U		7.3		0.001 U		10
1,2-DICHLOROETHANE	20	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,2-TRANS-DICHLOROETHYLENE	2	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,3-DICHLOROBENZENE	7.9	1.2 U	0.001 U	0.004		0.001 U		0.001 U		0.056 U		0.004		0.001 U		6
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
1,4-DICHLOROBENZENE	180	16	0.001 U	0.014		0.001 U		0.003		0.11		0.044		0.001 U		54
1,4-DIOXANE						0.084 U		0.082 U		3.9 U		0.079 U		0.085 U		4.2 U
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE																
2-HEXANONE						0.004 U		0.003 U		0.17 U		0.003 U		0.004 U		0.18 U
3-CHLOROPROPENE																
ACETONE	12 U	8.7 U	0.011	0.02		0.021		0.018		0.39 U		0.054		0.008 U		0.42 U
ACROLEIN	33 U	25 U	0.021 U	0.022 U		0.024 U		0.023 U		1.1 U		0.023 U		0.024 U		1.2 U
ACRYLONITRILE	6.6 U	4.9 U	0.004 U	0.004 U		0.005 U		0.005 U		0.22 U		0.005 U		0.005 U		0.24 U
BENZENE	14	3.5	0.002	0.001		0.0006 U		0.019		0.62		0.006		0.0006 U		0.11
BROMOBENZENE																
BROMOCHLOROMETHANE						0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
BROMOFORM	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
CARBON DISULFIDE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.003		0.001 U		0.06 U
CARBON TETRACHLORIDE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
CHLOROBENZENE	1.7 U	1.2 U	0.001 U	0.01		0.001 U		0.049		0.056 U		0.015		0.001 U		42
CHLORODIBROMOMETHANE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
CHLOROETHANE	3.3 U	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U
CHLOROFORM	1.7 U	1.2 U	0.008	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
CYCLOHEXANE						0.001 U		0.008		0.099		0.021		0.001 U		0.5
CYCLOHEXANE, METHYL-						0.001 U		0.002		0.19		0.049		0.001 U		1.2
DICHLOROBROMOMETHANE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
DICHLORODIFLUOROMETHANE	3.3 U	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U
DIETHYL ETHER																
ETHYL METHACRYLATE																

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SM-20 SRI-20-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-20 SRI-20-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-3 SRI-3-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-3 SRI-3-8-8-5-09 8/5/2009 7-9 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft
ETHYLBENZENE	44	12	0.001 U	0.003		0.001 U		0.001 U		0.62		0.11		0.001 U		1.9
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE						0.001 U		0.001 U		0.77		0.037		0.001 U		0.12
M+P-XYLENE						0.001 U		0.018		3.1		0.56		0.001 U		9.7
METHACRYLONITRILE																
METHYL ACETATE	3.3 U	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.71
METHYL ACRYLATE																
METHYL BROMIDE	3.3 U	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U
METHYL CHLORIDE	3.3 U	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U
METHYL ETHYL KETONE	6.6 U	4.9 U	0.004 U	0.004 U		0.005 U		0.005 U		0.22 U		0.005 U		0.005 U		0.24 U
METHYL IODIDE																
METHYL ISOBUTYL KETONE	5 U	3.7 U	0.003 U	0.003 U		0.004 U		0.003 U		0.17 U		0.003 U		0.004 U		0.18 U
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	31	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.007		0.002 U		0.12 U
METHYL-T-BUTYL ETHER	0.83 U	0.62 U	0.0005 U	0.0005 U		0.0006 U		0.0006 U		0.028 U		0.0006 U		0.0006 U		0.03 U
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE						0.001 U		0.003		2		0.26		0.001 U		3.4
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
t-Butyl Alcohol	33 U	25 U	0.021 U	0.022 U		0.024 U		0.023 U		4.6		0.024		0.024 U		1.2 U
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	3.6	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.007		0.001 U		0.06 U
TETRAHYDROFURAN																
TOLUENE	810	110	0.001 U	0.002		0.001		0.001 U		0.57		0.16		0.001 U		0.96
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	670	4.5	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.02		0.001 U		0.06 U
TRICHLOROFLUOROMETHANE	3.3 U	2.5 U	0.002 U	0.002 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U
VINYL CHLORIDE	1.7 U	1.2 U	0.001 U	0.001 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U
XYLENES,TOTAL	190	53	0.001 U	0.014												
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE					0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.1	
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE	0.4 U	0.04 U	0.04 UJ	0.041 UJ												
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE					0.11 U		0.12 U		0.37 U		0.12 U		0.11 U		0.12 U	
2,3,4,6-Tetrachlorophenol					0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
2,4,5-TRICHLOROPHENOL	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
2,4,6-TRICHLOROPHENOL	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
2,4-DICHLOROPHENOL	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
2,4-DIMETHYLPHENOL	3	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
2,4-DINITROPHENOL	8 U	0.79 U	0.8 UJ	0.82 UJ	0.37 U		0.4 U		1.2 U		0.39 U		0.37 U		0.41 U	
2,4-DINITROTOLUENE	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
2,6-DINITROTOLUENE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	

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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SM-20 SRI-20-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-20 SRI-20-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-3 SRI-3-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-3 SRI-3-8-8-5-09 8/5/2009 7-9 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft
2-CHLORONAPHTHALENE					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
2-CHLOROPHENOL	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
2-METHYL-4,6-DINITROPHENOL	2 U	0.2 U	0.2 UJ	0.2 UJ	0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U	
2-METHYLNAPHTHALENE	13	2.2	0.04 U	0.041 U	0.037 U		0.04 U		2.1		0.072		0.037 U		0.067	
2-NITROANILINE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
2-NITROPHENOL					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
3,3-DICHLOROBENZIDINE	1.2 U	0.12 U	0.12 UJ	0.12 UJ	0.11 U		0.12 U		0.37 U		0.12 U		0.11 U		0.12 U	
3-NITROANILINE					0.074 U		0.26		0.25 U		0.078 U		0.074 U		0.083 U	
4-BROMOPHENYL PHENYL ETHER					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
4-CHLORO-3-METHYLPHENOL	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
4-CHLOROANILINE					0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
4-CHLOROPHENYL PHENYL ETHER					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
4-NITROANILINE					0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
4-NITROPHENOL					0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U	
ACENAPHTHENE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
ACENAPHTHYLENE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
ACETOPHENONE	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
ANTHRACENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
ATRAZINE					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
BENZALDEHYDE	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
BENZIDINE	14 U	1.4 U	1.4 UJ	1.4 UJ	1.3 U		1.4 U		4.3 U		1.4 U		1.3 U		1.5 U	
BENZO(A)ANTHRACENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
BENZO(A)PYRENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.08		0.037 U		0.11	
BENZO(B)FLUORANTHENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.044		0.04 U		0.12 U		0.08		0.037 U		0.09	
BENZO(GHI)PERYLENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
BENZO(K)FLUORANTHENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
BENZYL BUTYL PHTHALATE	0.8 U	1.2	0.08 UJ	0.082 UJ	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
Biphenyl	96	6	0.04 U	0.041 U	0.037 U		0.074		500		2.2		0.037 U		1.5	
BIS(2-CHLOROETHOXY) METHANE					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
BIS(2-CHLOROETHYL) ETHER	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
Bis(2-chloroisopropyl) ether	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
BIS(2-CHLOROISOPROPYL)ETHER					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
BIS(2-ETHYLHEXYL)PHTHALATE	30	1.2	0.098 J	0.082 UJ	0.074 U		3.4		5.8		2.1		0.074 U		2.3	
CAPROLACTAM	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
CARBAZOLE	0.69	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.044		0.037 U		0.041 U	
CHRYSENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.045		0.043		0.12 U		2.2		0.037 U		4.1	
CRESOL,O	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
CRESOL,P	0.8 U	0.19	0.08 U	0.082 U	0.074 U		0.081 U		0.54		0.078 U		0.074 U		0.083 U	
DIBENZO(A,H)ANTHRACENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
DIBENZOFURAN					0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
DIETHYL PHTHALATE	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
DIMETHYL PHTHALATE	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
DI-N-BUTYL PHTHALATE	24	1	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
DI-N-OCTYL PHTHALATE	0.8 U	0.079 U	0.08 UJ	0.082 UJ	0.074 U		0.16		0.25 U		0.078 U		0.074 U		0.083 U	
FLUORANTHENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.095		0.04 U		0.12 U		0.28		0.037 U		0.45	
FLUORENE	1	0.14	0.04 U	0.041 U	0.037 U		0.04 U		0.52		0.045		0.037 U		0.11	
HEXACHLOROBENZENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
HEXACHLOROBUTADIENE	0.8 U	0.079 U	0.08 U	0.082 U	0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U	
HEXACHLOROCYCLOPENTADIENE	2 U	0.2 U	0.2 UJ	0.2 UJ	0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U	
HEXACHLOROETHANE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
INDENO(1,2,3-CD)PYRENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
ISOPHORONE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
NAPHTHALENE	5.3	0.84	0.04 U	0.041 U	0.037 U		0.04 U		2.3		0.1		0.037 U		0.091	

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SM-20 SRI-20-4-7-28-09 7/28/2009 3-5 ft	SRI-SM-20 SRI-20-8-7-28-09 7/28/2009 7-9 ft	SRI-SM-3 SRI-3-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-3 SRI-3-8-8-5-09 8/5/2009 7-9 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft
NITROBENZENE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
N-NITROSODIMETHYLAMINE	0.8 U	0.079 U	0.08 UJ	0.082 UJ												
N-NITROSODI-N-PROPYLAMINE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
N-NITROSODIPHENYLAMINE	0.4 U	0.04 U	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
PENTACHLOROPHENOL	2 U	0.2 U	0.2 U	0.2 U	0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U	
PHENANTHRENE	0.85	0.16	0.04 UJ	0.041 UJ	0.056		0.04 U		0.37		0.31		0.037 U		0.28	
PHENOL	26	0.87	0.04 U	0.041 U	0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U	
PYRENE	0.4 U	0.04 U	0.04 UJ	0.041 UJ	0.078		0.04 U		0.12 U		0.12		0.037 U		0.11	
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM	2950	936	1310	504	5790		8580		7530		4410		1690		6550	
ANTIMONY	2.26	1.18 U	1.17 U	1.2 U	0.718 U		0.786 U		0.812 U		1.41		0.706 U		1.01	
ARSENIC	1.12 U	1.12 U		1.14 U	3.36		5.61		7.82		4.98		2.25		5.4	
BARIUM	10.4	4.97	8.02 J	3.05 J	15.6		23.3		25		24.1		6.89		25.5	
BERYLLIUM	0.0845	0.0801 U	0.0794 U	0.0816 U	0.21		0.494		0.556		0.183		0.0717		0.246	
CADMIUM	0.164 U	0.165 U	0.164 U	0.168 U	0.963		0.579		0.791		0.769		0.395		0.783	
CALCIUM	77.6	26.1	329 J	128	7450		7060		1490		22300		219		22700	
CHROMIUM	9.74	6.72			11.7		22		36.1		31.2		4.99		38	
COBALT	0.308	0.224 U	0.645	0.228 U	2.33		4.4		0.987		2.09		0.254		3	
COPPER	4.8	1.03	7.44	0.461 J	66.5		35.3		122		80.4		60.4		76.9	
IRON	1880	3000	3020	234	13100		15000		17300		10700		3160		15000	
LEAD	30.5	3.7	11	1.91	23.2		23.4		30.3		30.1		14.5		34.1	
MAGNESIUM	147	33.3			1500		2920		300		1530		133		1850	
MANGANESE	29.8	6.78	12.7 J	1.56 J	67.9		103		25.7		67.1		11.8		79.3	
MERCURY	0.0132 U	0.0129 U	0.0132 U	0.0134 U	0.0074 U		0.0733		0.0396		1.2		0.0072 U		0.902	
NICKEL	2.08	0.378	1.83	0.216 U	4.6		9.66		3.45		11.5		1.15		18.4	
POTASSIUM	381	130	170 J	73.4 J	384		560		775		467		205		605	
SELENIUM	1.15 U	1.15 U	1.14 U	1.18 U	0.74 U		0.81 U		0.836 U		0.781 U		0.728 U		0.832 U	
SILVER	0.211 U	0.212 U	0.21 U	0.216 U	0.0903 U		0.0989 U		0.102 U		0.135		0.0888 U		0.102 U	
SODIUM	317	43.9 U	43.6 U	44.8 U	103		408		3360		176		13.1		230	
THALLIUM	1.7 U	1.71 U	1.69 U	1.74 U	1.11		1.12		1.29		0.793		0.385 U		1.32	
VANADIUM	12.1	11.6			23.4		49		51.8		40.2		8.65		32.8	
ZINC	17.2	5.07			400		97.8		222		259		200		216	
% Solid **(%)**																
CYANIDE																
Moisture **(%)**	16.5	15.9	15.7	18	9.9		17.7		20.3		14.6		9.3		19.9	
PH **(pH units)**					8.88		7.11		9.16		9.91		7.14		10.4	
TOC/Solids/Sludges/Combustion											14800					
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-40 SRI-SS-40-H-092512 9/25/2012 3.5-4 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-H-092512 9/25/2012 3.5-4 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-H-092512 9/25/2012 3.5-4 ft
Semivolatile Organics (mg/Kg)										
1,1,1,2-TETRACHLOROETHANE										
1,1,1-TRICHLOROETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,1,2,2-TETRACHLOROETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
1,1,2-TRICHLOROETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,1-DICHLOROETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,1-DICHLOROETHYLENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,1-DICHLOROPROPYLENE										
1,2,3-TRICHLOROBENZENE		49		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,2,3-TRICHLOROPROPANE										
1,2,4-TRICHLOROBENZENE		410		0.003	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,2,4-TRIMETHYLBENZENE										
1,2-CIS-DICHLOROETHYLENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,2-DIBROMO-3-CHLOROPROPANE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
1,2-DIBROMOETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,2-DICHLOROBENZENE		73		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,2-DICHLOROETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,2-DICHLOROETHYLENE										
1,2-DICHLOROPROPANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,2-TRANS-DICHLOROETHYLENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,3,5-TRIMETHYLBENZENE										
1,3-CIS-DICHLOROPROPYLENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,3-DICHLOROBENZENE		0.68		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,3-DICHLOROPROPANE										
1,3-TRANS-DICHLOROPROPYLENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
1,4-DICHLOROBENZENE		2.8		0.001 U	0.001 U	0.001 U	0.001 U	0.004	0.001 U	0.073 U
1,4-DIOXANE		41 U		0.092 U	0.074 U	0.077 U	0.086 U	0.098 U	0.08 U	5.1 U
1-CHLOROBUTANE										
2,2-DICHLOROPROPANE										
2-CHLOROETHYL VINYL ETHER										
2-CHLOROTOLUENE										
2-HEXANONE		1.8 U		0.004 U	0.003 U	0.003 U	0.004 U	0.004 U	0.003 U	0.22 U
3-CHLOROPROPENE										
ACETONE		4.1 U		0.019	0.016	0.008 U	0.015	0.01 U	0.027	0.51 U
ACROLEIN		12 U		0.026 U	0.021 U	0.022 U	0.025 U	0.028 U	0.023 U	1.5 U
ACRYLONITRILE		2.3 U		0.005 U	0.004 U	0.004 U	0.005 U	0.006 U	0.005 U	0.29 U
BENZENE		0.29 U		0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0007 U	0.0006 U	0.037 U
BROMOBENZENE										
BROMOCHLOROMETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
BROMOFORM		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
CARBON DISULFIDE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
CARBON TETRACHLORIDE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
CHLOROBENZENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.002	0.001 U	0.073 U
CHLORODIBROMOMETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
CHLOROETHANE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
CHLOROFORM		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
CYCLOHEXANE		53		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
CYCLOHEXANE, METHYL-		210		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
DICHLOROBROMOMETHANE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
DICHLORODIFLUOROMETHANE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
DIETHYL ETHER										
ETHYL METHACRYLATE										

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-40 SRI-SS-40-H-092512 9/25/2012 3.5-4 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-H-092512 9/25/2012 3.5-4 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-H-092512 9/25/2012 3.5-4 ft
ETHYLBENZENE		1.7		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.009	4.6
HEXACHLOROBUTADIENE										
HEXACHLOROETHANE										
ISOPROPYLBENZENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
M+P-XYLENE		13		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.026	18
METHACRYLONITRILE										
METHYL ACETATE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
METHYL ACRYLATE										
METHYL BROMIDE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
METHYL CHLORIDE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
METHYL ETHYL KETONE		2.3 U		0.005 U	0.004 U	0.004 U	0.005 U	0.006 U	0.005 U	0.29 U
METHYL IODIDE										
METHYL ISOBUTYL KETONE		1.8 U		0.004 U	0.003 U	0.003 U	0.004 U	0.004 U	0.003 U	0.22 U
METHYL METHACRYLATE										
METHYLENE BROMIDE										
METHYLENE CHLORIDE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
METHYL-T-BUTYL ETHER		0.29 U		0.0007 U	0.0005 U	0.0005 U	0.0006 U	0.0007 U	0.0006 U	0.037 U
NAPHTHALENE										
N-BUTYLBENZENE										
N-PROPYLBENZENE										
O-XYLENE		2.3		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.003	1.8
P-CHLOROTOLUENE										
PENTACHLOROETHANE										
P-ISOPROPYLTOLUENE										
PROPANENITRILE										
SEC-BUTYLBENZENE										
STYRENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
t-Butyl Alcohol		12 U		0.026 U	0.021 U	0.022 U	0.025 U	0.028 U	0.023 U	1.5 U
TERT-BUTYLBENZENE										
TETRACHLOROETHYLENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
TETRAHYDROFURAN										
TOLUENE		130		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
TRANS-1,4-DICHLORO-2-BUTENE										
TRICHLOROETHYLENE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
TRICHLOROFLUOROMETHANE		1.2 U		0.003 U	0.002 U	0.002 U	0.002 U	0.003 U	0.002 U	0.15 U
VINYL CHLORIDE		0.58 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.073 U
XYLENES,TOTAL										
Semivolatile Organics (mg/Kg)										
1,2,4,5-TETRACHLOROBENZENE	2.1		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
1,2,4-TRICHLOROBENZENE										
1,2-DICHLOROBENZENE										
1,2-DIPHENYLHYDRAZINE										
1,3-DICHLOROBENZENE										
1,4-DICHLOROBENZENE										
1,4-DIOXANE	0.11 U		0.11 U		0.55 U	0.11 U	0.55 U	0.11 U	0.56 U	4.2 U
2,3,4,6-Tetrachlorophenol	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
2,4,5-TRICHLOROPHENOL	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
2,4,6-TRICHLOROPHENOL	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
2,4-DICHLOROPHENOL	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
2,4-DIMETHYLPHENOL	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
2,4-DINITROPHENOL	0.37 U		0.37 U		1.6 U	0.32 U	1.7 U	0.33 U	1.7 U	12 U
2,4-DINITROTOLUENE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
2,6-DINITROTOLUENE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-40 SRI-SS-40-H-092512 9/25/2012 3.5-4 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-H-092512 9/25/2012 3.5-4 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-H-092512 9/25/2012 3.5-4 ft
2-CHLORONAPHTHALENE	0.037 U		0.037 U		0.038 U	0.007 U	0.039 U	0.008 U	0.039 U	0.29 U
2-CHLOROPHENOL	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
2-METHYL-4,6-DINITROPHENOL	0.19 U		0.19 U		0.91 U	0.18 U	0.92 U	0.18 U	0.93 U	6.9 U
2-METHYLNAPHTHALENE	0.037 U		0.037 U		0.018 U	0.004 U	0.018 U	0.004 U	0.019 U	0.14 U
2-NITROANILINE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
2-NITROPHENOL	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
3,3-DICHLOROBENZIDINE	0.11 U		0.11 U		0.55 U	0.11 U	0.55 U	0.11 U	0.56 U	4.2 U
3-NITROANILINE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
4-BROMOPHENYL PHENYL ETHER	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
4-CHLORO-3-METHYLPHENOL	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
4-CHLOROANILINE	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
4-CHLOROPHENYL PHENYL ETHER	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
4-NITROANILINE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
4-NITROPHENOL	0.19 U		0.19 U		0.91 U	0.18 U	0.92 U	0.18 U	0.93 U	6.9 U
ACENAPHTHENE	0.12		0.037 U		0.018 U	0.004 U	0.018 U	0.004 U	0.019 U	0.14 U
ACENAPHTHYLENE	0.15		0.037 U		0.018 U	0.004 U	0.018 U	0.004 U	0.019 U	0.14 U
ACETOPHENONE	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
ANTHRACENE	0.037 U		0.037 U		0.018 U	0.004 U	0.043 J	0.004 U	0.019 U	0.14 U
ATRAZINE	0.037 U		0.037 U		0.18 U	0.035 U	0.18 U	0.037 U	0.19 U	1.4 U
BENZALDEHYDE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
BENZIDINE	1.3 U		1.3 U		3.8 U	0.74 U	3.9 U	0.77 U	3.9 U	29 U
BENZO(A)ANTHRACENE	0.037 U		0.037 U		0.043	0.004 U	0.29 J	0.004 U	0.019 U	0.14 U
BENZO(A)PYRENE	0.037 U		0.037 U		0.048	0.004 U	0.25 J	0.004 U	0.019 U	0.14 U
BENZO(B)FLUORANTHENE	0.037 U		0.037 U		0.12	0.004 U	0.34 J	0.004 U	0.019 U	0.14 U
BENZO(GHI)PERYLENE	0.037 U		0.037 U		0.047	0.004 U	0.17 J	0.004 U	0.019 U	0.14 U
BENZO(K)FLUORANTHENE	0.037 U		0.037 U		0.07	0.004 U	0.19 J	0.004 U	0.019 U	0.14 U
BENZYL BUTYL PHTHALATE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
Biphenyl	1.8		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
BIS(2-CHLOROETHOXY) METHANE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
BIS(2-CHLOROETHYL) ETHER	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
Bis(2-chloroisopropyl) ether	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
BIS(2-CHLOROISOPROPYL)ETHER	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
BIS(2-ETHYLHEXYL)PHTHALATE	4.4		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
CAPROLACTAM	0.037 U		0.037 U		0.18 U	0.035 U	0.18 U	0.037 U	0.19 U	1.4 U
CARBAZOLE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
CHRYSENE	0.047		0.037 U		0.1	0.004 U	0.33 J	0.004 U	0.047	0.14 U
CRESOL,O	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
CRESOL,P	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
DIBENZO(A,H)ANTHRACENE	0.037 U		0.037 U		0.018 U	0.004 U	0.044 J	0.004 U	0.019 U	0.14 U
DIBENZOFURAN	0.044		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
DIETHYL PHTHALATE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
DIMETHYL PHTHALATE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
DI-N-BUTYL PHTHALATE	0.41		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
DI-N-OCTYL PHTHALATE	0.074 U		0.075 U		0.37 U	0.07 U	0.37 U	0.073 U	0.37 U	2.8 U
FLUORANTHENE	0.037 U		0.037 U		0.13	0.004 U	0.58 J	0.004 U	0.019 U	0.14 U
FLUORENE	0.085		0.037 U		0.018 U	0.004 U	0.018 U	0.004 U	0.019 U	0.14 U
HEXACHLOROBENZENE	0.037 U		0.037 U		0.018 U	0.004 U	0.018 U	0.004 U	0.019 U	0.14 U
HEXACHLOROBUTADIENE	0.074 U		0.075 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
HEXACHLOROCYCLOPENTADIENE	0.19 U		0.19 U		0.91 U	0.18 U	0.92 U	0.18 U	0.93 U	6.9 U
HEXACHLOROETHANE	0.037 U		0.037 U		0.18 U	0.035 U	0.18 U	0.037 U	0.19 U	1.4 U
INDENO(1,2,3-CD)PYRENE	0.037 U		0.037 U		0.048	0.004 U	0.15 J	0.004 U	0.019 U	0.14 U
ISOPHORONE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
NAPHTHALENE	0.2		0.037 U		0.018 U	0.004 U	0.018 U	0.004 U	0.019 U	0.14 U

Attachment A
Table A-1
Summary of Analytical Results in Area 1 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-40 SRI-SS-40-H-092512 9/25/2012 3.5-4 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-H-092512 9/25/2012 3.5-4 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-H-092512 9/25/2012 3.5-4 ft
NITROBENZENE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
N-NITROSODIMETHYLAMINE										
N-NITROSODI-N-PROPYLAMINE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
N-NITROSODIPHENYLAMINE	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
PENTACHLOROPHENOL	0.19 U		0.19 U		0.18 U	0.035 U	0.18 U	0.037 U	0.19 U	1.4 U
PHENANTHRENE	0.097		0.037 U		0.03	0.004 U	0.28 J	0.004 U	0.019 U	0.14 U
PHENOL	0.037 U		0.037 U		0.091 U	0.018 U	0.092 U	0.018 U	0.093 U	0.69 U
PYRENE	0.037 U		0.037 U		0.11	0.004 U	0.52 J	0.004 U	0.021	0.14 U
PCBs (mg/Kg)										
PCB-1016 (AROCLOR 1016)					0.0039 U		0.004 U		0.004 U	
PCB-1221 (AROCLOR 1221)					0.005 U		0.0051 U		0.0052 U	
PCB-1232 (AROCLOR 1232)					0.0087 U		0.0089 U		0.009 U	
PCB-1242 (AROCLOR 1242)					0.0036 U		0.0037 U		0.0037 U	
PCB-1248 (AROCLOR 1248)					0.0036 U		0.0037 U		0.0037 U	
PCB-1254 (AROCLOR 1254)					0.0036 U		0.011		0.0037 U	
PCB-1260 (AROCLOR 1260)					0.016		0.0054 U		0.044 J	
Inorganics (mg/Kg)										
ALUMINUM	3600		2000							
ANTIMONY	0.713 U		0.726 U							
ARSENIC	1.59		1.88							
BARIUM	10.7		6.98							
BERYLLIUM	0.118		0.0869							
CADMIUM	0.502		0.177							
CALCIUM	11800		2550							
CHROMIUM	13.3		7.88							
COBALT	1.44		0.275							
COPPER	58		3.98							
IRON	6890		4700							
LEAD	31.5		7.19							
MAGNESIUM	1330		158							
MANGANESE	41.3		11.5							
MERCURY	0.327		0.0078 U							
NICKEL	10.1		1.05							
POTASSIUM	209		187							
SELENIUM	0.735 U		0.748 U							
SILVER	0.0897 U		0.0913 U							
SODIUM	149		16.7							
THALLIUM	0.461		0.396 U							
VANADIUM	11.6		11.2							
ZINC	150		28.7							
% Solid **(%)**										
CYANIDE										
Moisture **(%)**	11		10.9		8.8	6.6	9.7	10.4	10.7	39.9
PH **(pH units)**	10.4		9.26							
TOC/Solids/Sludges/Combustion			925							
TOTAL ORGANIC CARBON										

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Prepared by / D KJC 05/01/14
Checked by / Date: MJM 8/15/14

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft	RDSB13 RDSB13-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB14 RDSB14-100103-0.75 10/1/2003 0.25-1.25 ft	RDSB15 RDSB15-093003-1.0 9/30/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0 / 44	0.09222 : 11.08949		0.738643	0.738643	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,1,1-TRICHLOROETHANE	0 / 71	0 : 8.40655		0.381727	0.492775	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,1,2,2-TETRACHLOROETHANE	4 / 71	0 : 16.45537	0.39326 - 11	0.847415	1.093936	1.5 U	2.3	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0 / 11	0.002 : 1.2		0.065773	0.065773											
1,1,2-TRICHLOROETHANE	1 / 71	0 : 10.73176	0.24903 - 0.24903	0.454784	0.587084	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,1-DICHLOROETHANE	0 / 71	0 : 5.8		0.246758	0.318543	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,1-DICHLOROETHYLENE	0 / 71	0 : 15.38219		0.592278	0.764577	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,1-DICHLOROPROPYLENE	0 / 16	0.06693 : 8.04882		1.078063	1.078063											
1,2,3-TRICHLOROBENZENE	12 / 27	0.001 : 7.6911	0.08018 - 450	38.98039	38.98039											
1,2,3-TRICHLOROPROPANE	0 / 16	0.06098 : 7.33337		0.982235	0.982235											
1,2,4-TRICHLOROBENZENE	14 / 27	0.001 : 8.04882	0.003 - 1145.494	161.7269	161.7269											
1,2,4-TRIMETHYLBENZENE	3 / 16	0.0601 : 6.79678	0.05242 - 0.27854	0.93107	0.93107											
1,2-CIS-DICHLOROETHYLENE	11 / 55	0.001 : 5.36588	0.15 - 26	2.167223	2.167223	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	14	0.26	0.14 U
1,2-DIBROMO-3-CHLOROPROPANE	0 / 27	0.002 : 47.39862		3.788925	3.788925											
1,2-DIBROMOETHANE	0 / 27	0.001 : 7.6911		0.623496	0.623496											
1,2-DICHLOROBENZENE	36 / 71	0 : 0.79	0.0043 - 1000	79.94139	97.85929	120	74	200	0.15 U	0.79 U	0.15	0.14 U	0.14 U	540	11	21
1,2-DICHLOROETHANE	7 / 71	0 : 5.90247	0.07311 - 9.5	0.657794	0.849153	9.5	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	1.8
1,2-DICHLOROETHYLENE	0 / 11	0 : 0		0												
1,2-DICHLOROPROPANE	2 / 71	0 : 10.19517	0.6338 - 13	0.586292	0.75685	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,2-TRANS-DICHLOROETHYLENE	3 / 68	0 : 9.83745	0.09801 - 1	0.463542	0.573106	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,3,5-TRIMETHYLBENZENE	1 / 16	0.07357 : 8.76427	0.07271 - 0.07271	1.176157	1.176157											
1,3-CIS-DICHLOROPROPYLENE	0 / 71	0 : 7.51223		0.354733	0.457929	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,3-DICHLOROBENZENE	12 / 71	0 : 6.43906	0.004 - 6	0.467873	0.58279	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,3-DICHLOROPROPANE	0 / 16	0.08478 : 10.19517		1.365546	1.365546											
1,3-TRANS-DICHLOROPROPYLENE	0 / 71	0 : 5.8		0.289948	0.374297	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
1,4-DICHLOROBENZENE	29 / 71	0 : 6.79678	0.003 - 54	2.823259	3.516691	1.5 U	1.4 U	5.5	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	25	2.2	0.74
1,4-DIOXANE	0 / 11	0.074 : 41		2.261909	2.261909											
1-CHLOROBUTANE	7 / 16	0.07275 : 6.48545	0.49154 - 25.8269	2.931312	2.931312											
2,2-DICHLOROPROPANE	0 / 16	0.08329 : 10.01631		1.341589	1.341589											
2-CHLOROETHYL VINYL ETHER	0 / 8	0 : 0		0												
2-CHLOROTOLUENE	1 / 16	0.09073 : 10.91063	0.12127 - 0.12127	1.466092	1.466092											
2-HEXANONE	0 / 38	0 : 10.91063		0.643973	0.906333											
3-CHLOROPROPENE	0 / 16	0.07734 : 9.30086		1.245761	1.245761											
ACETONE	25 / 71	0 : 41	0.015 - 34	3.555558	3.76783	10 U	9.7 U	10 U	1 U	5.5 U	0.99 U	0.97 U	1 U	10 U	12	0.99 U
ACROLEIN	0 / 21	0 : 12		0.344976	0.658591											
ACRYLONITRILE	0 / 65	0 : 31.30098		1.588676	1.877527	5.9 U	5.6 U	5.7 U	0.58 U	3.2 U	0.57 U	0.55 U	0.57 U	5.9 U	0.59 U	0.57 U
BENZENE	19 / 71	0 : 4.11384	0.006 - 19	1.191645	1.538305	4.6	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	5.2	0.2	1.2
BROMOBENZENE	0 / 16	0.07734 : 9.30086		1.245761	1.245761											
BROMOCHLOROMETHANE	0 / 55	0.001 : 29.15462		1.301213	1.301213	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
BROMOFORM	0 / 71	0 : 8.40655		0.381727	0.492775	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
CARBON DISULFIDE	1 / 36	0 : 6.61792	0.003 - 0.003	0.403806	0.538408											
CARBON TETRACHLORIDE	0 / 71	0 : 8.58541		0.387126	0.499744	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
CHLOROBENZENE	27 / 71	0 : 8.76427	0.015 - 42	2.003028	2.451983	1.5 U	2.8	1.4 U	0.15 U	1.2	0.14 U	0.14 U	0.14 U	1.5 U	3.6	1.5
CHLORODIBROMOMETHANE	0 / 71	0 : 5.90247		0.306145	0.395205	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
CHLOROETHANE	0 / 71	0 : 18.06513		0.805252	1.039508	3 U	2.8 U	2.9 U	0.29 U	1.6 U	0.28 U	0.28 U	0.29 U	3 U	0.29 U	0.28 U
CHLOROFORM	0 / 71	0 : 5.90247		0.306145	0.395205	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
CYCLOHEXANE	5 / 11	0.001 : 0.001	0.008 - 53	4.875545	4.875545											
CYCLOHEXANE, METHYL-	5 / 11	0.001 : 0.001	0.002 - 210	19.22218	19.22218											
DICHLOROBROMOMETHANE	0 / 71	0 : 5.8		0.284549	0.367327	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
DICHLORODIFLUOROMETHANE	0 / 27	0.002 : 7.86996		0.651451	0.651451											
DIETHYL ETHER	0 / 16	0.0818 : 9.83745		1.317632	1.317632											
ETHYL METHACRYLATE	0 / 16	0.08627 : 10.37404		1.389503	1.389503											
ETHYLBENZENE	37 / 71	0 : 0.79	0.009 - 67	4.9031	6.10737	30	23	10	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	16	0.67	1.1

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft	RDSB13 RDSB13-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB14 RDSB14-100103-0.75 10/1/2003 0.25-1.25 ft	RDSB15 RDSB15-093003-1.0 9/30/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft
HEXACHLOROBUTADIENE	0 / 16	0.07883 : 9.47972		1.269719	1.269719											
HEXACHLOROETHANE	0 / 16	0.17253 : 20.74808		2.779007	2.779007											
ISOPROPYLBENZENE	3 / 27	0.001 : 5.54474	0.037 - 0.77	0.485302	0.485302											
M+P-XYLENE	6 / 11	0.001 : 0.001	0.018 - 13	2.400591	2.400591											
METHACRYLONITRILE	0 / 16	0.31681 : 38.09776		5.102831	5.102831											
METHYL ACETATE	1 / 11	0.002 : 1.2	0.71 - 0.71	0.124864	0.124864											
METHYL ACRYLATE	0 / 16	0.0818 : 9.83745		1.317632	1.317632											
METHYL BROMIDE	0 / 71	0 : 15.91878		0.740468	0.955876	3 U	2.8 U	2.9 U	0.29 U	1.6 U	0.28 U	0.28 U	0.29 U	3 U	0.29 U	0.28 U
METHYL CHLORIDE	0 / 71	0 : 12		0.578505	0.746797	3 U	2.8 U	2.9 U	0.29 U	1.6 U	0.28 U	0.28 U	0.29 U	3 U	0.29 U	0.28 U
METHYL ETHYL KETONE	1 / 36	0 : 10.37404	0.70637 - 0.70637	0.674844	0.899792											
METHYL IODIDE	0 / 16	0.36738 : 44.17909		5.917367	5.917367											
METHYL ISOBUTYL KETONE	0 / 38	0 : 12.52039		0.734757	1.034103											
METHYL METHACRYLATE	1 / 16	0.12012 : 14.30902	0.90694 - 0.90694	1.969522	1.969522											
METHYLENE BROMIDE	0 / 16	0.05503 : 6.61792		0.886407	0.886407											
METHYLENE CHLORIDE	13 / 71	0 : 12	0.007 - 51	2.155402	2.782428	51	5.1	2.9 U	0.29 U	1.6 U	0.28 U	0.28 U	0.29 U	3.1	0.29 U	4.7
METHYL-T-BUTYL ETHER	0 / 27	0.0005 : 8.40655		0.673779	0.673779											
NAPHTHALENE	0 / 16	0.04165 : 5.00816		0.670795	0.670795											
N-BUTYLBENZENE	0 / 16	0.05949 : 7.15451		0.958278	0.958278											
N-PROPYLBENZENE	0 / 16	0.05206 : 6.2602		0.838493	0.838493											
O-XYLENE	38 / 55	0.001 : 7.15451	0.003 - 110	9.035742	9.035742	41	43	19	0.15 U	1.8	0.18	0.14 U	0.14 U	29	2.1	1.7
P-CHLOROTOLUENE	3 / 16	0.08329 : 10.01631	0.96596 - 1.8128	1.547476	1.547476											
PENTACHLOROETHANE	0 / 16	0.1294 : 15.56106		2.084254	2.084254											
P-ISOPROPYLTOLUENE	1 / 16	0.0476 : 5.72361	0.30895 - 0.30895	0.784312	0.784312											
PROPANENITRILE	0 / 16	0.80466 : 96.76473		12.96071	12.96071											
SEC-BUTYLBENZENE	0 / 16	0.06396 : 7.6911		1.030149	1.030149											
STYRENE	0 / 36	0 : 9.83745		0.595392	0.793856											
t-Butyl Alcohol	2 / 11	0.021 : 12	0.024 - 4.6	1.027909	1.027909											
TERT-BUTYLBENZENE	0 / 16	0.06396 : 7.6911		1.030149	1.030149											
TETRACHLOROETHYLENE	8 / 71	0 : 5.8	0.0052 - 5.9	0.391063	0.487114	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	5.9	0.15 U	0.14 U
TETRAHYDROFURAN	0 / 16	0.87754 : 105.529		14.1346	14.1346											
TOLUENE	47 / 71	0 : 0.15	0.001 - 1300	99.85241	109.0696	1300	1200	690	0.15 U	18	0.25	0.14 U	0.14 U	67	1.1	16
TRANS-1,4-DICHLORO-2-BUTENE	0 / 16	0.16956 : 20.39035		2.731092	2.731092											
TRICHLOROETHYLENE	11 / 71	0 : 7.6911	0.02 - 15	1.042374	1.34561	1.5 U	4.1	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	7	0.15 U	0.18
TRICHLOROFLUOROMETHANE	0 / 38	0 : 6.43906		0.382176	0.537878											
VINYL CHLORIDE	3 / 71	0 : 25.57737	0.23798 - 1.9	0.936368	1.208766	1.5 U	1.4 U	1.4 U	0.15 U	0.79 U	0.14 U	0.14 U	0.14 U	1.5 U	0.15 U	0.14 U
XYLENES,TOTAL	40 / 60	0 : 0.16268	0.0062 - 320	27.3846	33.53216	150	120	76	0.15 U	1.8	0.58	0.33	0.14 U	82	4	5
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE	2 / 11	0.074 : 0.25	0.1 - 2.1	0.241273	0.241273											
1,2,4-TRICHLOROBENZENE	1 / 3	0 : 0	0.62 - 0.62	0.206667	0.62											
1,2-DICHLOROBENZENE	0 / 3	0 : 0		0												
1,2-DIPHENYLHYDRAZINE	0 / 3	0 : 0		0												
1,3-DICHLOROBENZENE	1 / 3	0 : 0	0.11 - 0.11	0.036667	0.11											
1,4-DICHLOROBENZENE	1 / 3	0 : 0	0.13 - 0.13	0.043333	0.13											
1,4-DIOXANE	0 / 11	0.11 : 0.56		0.128636	0.128636											
2,3,4,6-Tetrachlorophenol	0 / 11	0.074 : 0.37		0.086318	0.086318											
2,4,5-TRICHLOROPHENOL	0 / 11	0.074 : 0.25		0.048409	0.048409											
2,4,6-TRICHLOROPHENOL	0 / 11	0.037 : 0.12		0.030182	0.030182											
2,4-DICHLOROPHENOL	0 / 11	0.037 : 0.12		0.030182	0.030182											
2,4-DIMETHYLPHENOL	0 / 11	0.074 : 0.25		0.048409	0.048409											
2,4-DINITROPHENOL	0 / 11	0.37 : 1.7		0.403636	0.403636											
2,4-DINITROTOLUENE	0 / 14	0 : 0.37		0.067821	0.086318											
2,6-DINITROTOLUENE	0 / 14	0 : 0.12		0.023714	0.030182											
2-CHLORONAPHTHALENE	0 / 14	0 : 0.12		0.018	0.022909											
2-CHLOROPHENOL	0 / 11	0.037 : 0.12		0.030182	0.030182											

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Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft	RDSB13 RDSB13-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB14 RDSB14-100103-0.75 10/1/2003 0.25-1.25 ft	RDSB15 RDSB15-093003-1.0 9/30/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft
2-METHYL-4,6-DINITROPHENOL	0 / 11	0.18 : 0.93		0.215	0.215											
2-METHYLNAPHTHALENE	3 / 11	0.018 : 0.04	0.067 - 2.1	0.214591	0.214591											
2-NITROANILINE	0 / 14	0 : 0.12		0.023714	0.030182											
2-NITROPHENOL	0 / 11	0.037 : 0.12		0.030182	0.030182											
3,3-DICHLOROBENZIDINE	0 / 14	0 : 0.56		0.101071	0.128636											
3-NITROANILINE	1 / 14	0 : 0.37	0.26 - 0.26	0.0835	0.106273											
4-BROMOPHENYL PHENYL ETHER	0 / 14	0 : 0.12		0.023714	0.030182											
4-CHLORO-3-METHYLPHENOL	0 / 11	0.074 : 0.25		0.048409	0.048409											
4-CHLOROANILINE	0 / 11	0.074 : 0.25		0.048409	0.048409											
4-CHLOROPHENYL PHENYL ETHER	0 / 14	0 : 0.12		0.023714	0.030182											
4-NITROANILINE	0 / 14	0 : 0.37		0.067821	0.086318											
4-NITROPHENOL	0 / 11	0.18 : 0.93		0.215	0.215											
ACENAPHTHENE	1 / 14	0 : 0.12	0.12 - 0.12	0.023071	0.029364											
ACENAPHTHYLENE	1 / 14	0 : 0.12	0.15 - 0.15	0.025214	0.032091											
ACETOPHENONE	0 / 11	0.074 : 0.25		0.048409	0.048409											
ANTHRACENE	1 / 14	0 : 0.12	0.043 - 0.043	0.01825	0.023227											
ATRAZINE	0 / 11	0.037 : 0.19		0.042636	0.042636											
BENZALDEHYDE	0 / 11	0.074 : 0.37		0.086318	0.086318											
BENZIDINE	0 / 14	0 : 4.3		0.907143	1.154545											
BENZO(A)ANTHRACENE	3 / 14	0 : 0.12	0.043 - 0.29	0.04225	0.049292											
BENZO(A)PYRENE	4 / 14	0 : 0.12	0.048 - 0.25	0.046536	0.059227											
BENZO(B)FLUORANTHENE	5 / 14	0 : 0.12	0.044 - 0.34	0.0585	0.074455											
BENZO(GHI)PERYLENE	2 / 14	0 : 0.12	0.047 - 0.17	0.030036	0.038227											
BENZO(K)FLUORANTHENE	2 / 14	0 : 0.12	0.07 - 0.19	0.033107	0.042136											
BENZYL BUTYL PHTHALATE	0 / 14	0 : 0.37		0.067821	0.086318											
Biphenyl	5 / 11	0.037 : 0.093	0.074 - 500	45.97886	45.97886											
BIS(2-CHLOROETHOXY) METHANE	0 / 14	0 : 0.12		0.023714	0.030182											
BIS(2-CHLOROETHYL) ETHER	0 / 14	0 : 0.12		0.023714	0.030182											
Bis(2-chloroisopropyl) ether	0 / 11	0.037 : 0.12		0.030182	0.030182											
BIS(2-CHLOROISOPROPYL)ETHER	0 / 14	0 : 0.12		0.023714	0.030182											
BIS(2-ETHYLHEXYL)PHTHALATE	6 / 14	0 : 0.37	0.099 - 5.8	1.340393	1.563792											
CAPROLACTAM	0 / 11	0.037 : 0.19		0.042636	0.042636											
CARBAZOLE	1 / 14	0 : 0.12	0.044 - 0.044	0.025464	0.032409											
CHRYSENE	9 / 14	0 : 0.12	0.043 - 4.1	0.505929	0.59025											
CRESOL,O	0 / 11	0.074 : 0.25		0.048409	0.048409											
CRESOL,P	1 / 11	0.074 : 0.093	0.54 - 0.54	0.086136	0.086136											
DIBENZO(A,H)ANTHRACENE	1 / 14	0 : 0.12	0.044 - 0.044	0.018321	0.023318											
DIBENZOFURAN	1 / 11	0.037 : 0.12	0.044 - 0.044	0.0325	0.0325											
DIETHYL PHTHALATE	0 / 14	0 : 0.37		0.067821	0.086318											
DIMETHYL PHTHALATE	0 / 14	0 : 0.37		0.067821	0.086318											
DI-N-BUTYL PHTHALATE	1 / 14	0 : 0.37	0.41 - 0.41	0.094464	0.120227											
DI-N-OCTYL PHTHALATE	1 / 14	0 : 0.37	0.16 - 0.16	0.076357	0.097182											
FLUORANTHENE	6 / 14	0 : 0.12	0.095 - 0.58	0.130714	0.1525											
FLUORENE	4 / 14	0 : 0.04	0.045 - 0.52	0.061643	0.078455											
HEXACHLOROBENZENE	0 / 14	0 : 0.12		0.015821	0.020136											
HEXACHLOROBUTADIENE	0 / 14	0 : 0.25		0.038036	0.048409											
HEXACHLOROCYCLOPENTADIENE	0 / 14	0 : 0.93		0.168929	0.215											
HEXACHLOROETHANE	0 / 14	0 : 0.19		0.0335	0.042636											
INDENO(1,2,3-CD)PYRENE	2 / 14	0 : 0.12	0.048 - 0.15	0.028679	0.0365											
ISOPHORONE	0 / 14	0 : 0.12		0.023714	0.030182											
NAPHTHALENE	4 / 14	0 : 0.04	0.091 - 2.3	0.199571	0.254											
NITROBENZENE	0 / 14	0 : 0.12		0.023714	0.030182											
N-NITROSODIMETHYLAMINE	0 / 3	0 : 0		0												
N-NITROSODI-N-PROPYLAMINE	0 / 14	0 : 0.12		0.023714	0.030182											

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chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB10 RDSB10-092903-0.25 9/29/2003 0-0.5 ft	RDSB11 RDSB11-093003-1.5 9/30/2003 1-2 ft	RDSB12 RDSB12-092903-0.5 9/29/2003 0.25-0.75 ft	RDSB13 RDSB13-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB14 RDSB14-100103-0.75 10/1/2003 0.25-1.25 ft	RDSB15 RDSB15-093003-1.0 9/30/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-1.0 9/25/2003 0.5-1.5 ft	RDSB16 RDSB16-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB17 RDSB17-100203-0.75 10/2/2003 0.25-0.75 ft	RDSB17 RDSB17-100203-2.5 10/2/2003 1.5-3.5 ft	RDSB18 RDSB18-092603-0.5 9/26/2003 0.25-0.75 ft
N-NITROSODIPHENYLAMINE	0 / 14	0 : 0.12		0.023714	0.030182											
PENTACHLOROPHENOL	0 / 11	0.18 : 0.62		0.114545	0.114545											
PHENANTHRENE	9 / 14	0 : 0.04	0.03 - 0.37	0.115607	0.1245											
PHENOL	0 / 11	0.037 : 0.12		0.030182	0.030182											
PYRENE	7 / 14	0 : 0.12	0.021 - 0.52	0.086036	0.100375											
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)	0 / 3	0.0039 : 0.004		0.001983	0.001983											
PCB-1221 (AROCLOR 1221)	0 / 3	0.005 : 0.0052		0.00255	0.00255											
PCB-1232 (AROCLOR 1232)	0 / 3	0.0087 : 0.009		0.004433	0.004433											
PCB-1242 (AROCLOR 1242)	0 / 3	0.0036 : 0.0037		0.001833	0.001833											
PCB-1248 (AROCLOR 1248)	0 / 3	0.0036 : 0.0037		0.001833	0.001833											
PCB-1254 (AROCLOR 1254)	1 / 3	0.0036 : 0.0037	0.011 - 0.011	0.004883	0.004883											
PCB-1260 (AROCLOR 1260)	2 / 3	0.0054 : 0.0054	0.016 - 0.044	0.0209	0.0209											
Inorganics (mg/Kg)																
ALUMINUM	8 / 8		1690 - 8580	5018.75	5018.75											
ANTIMONY	3 / 11	0 : 0.812	1.01 - 1.41	0.550045	0.672278											
ARSENIC	11 / 11		0.68 - 7.82	3.297273	3.297273											
BARIUM	8 / 8		6.89 - 25.5	17.25875	17.25875											
BERYLLIUM	8 / 11	0 : 0	0.0717 - 0.556	0.178691	0.2457											
CADMIUM	9 / 11	0 : 0	0.177 - 2.3	0.659909	0.806556											
CALCIUM	8 / 8		219 - 22700	9446.125	9446.125											
CHROMIUM	11 / 11		4.99 - 38	19.52455	19.52455											
COBALT	8 / 8		0.254 - 4.4	1.847	1.847											
COPPER	11 / 11		3.98 - 122	57.77091	57.77091											
IRON	8 / 8		3160 - 17300	10731.25	10731.25											
LEAD	11 / 11		6.5 - 130	32.07182	32.07182											
MAGNESIUM	8 / 8		133 - 2920	1215.125	1215.125											
MANGANESE	8 / 8		11.5 - 103	50.95	50.95											
MERCURY	6 / 11	0 : 0.0078	0.0396 - 1.2	0.244827	0.299233											
NICKEL	10 / 11	0 : 0	1.05 - 27	8.282727	9.111											
POTASSIUM	8 / 8		187 - 775	424	424											
SELENIUM	0 / 11	0 : 0.836		0.282273	0.388125											
SILVER	3 / 11	0 : 0.102	0.135 - 1.5	0.287864	0.31665											
SODIUM	8 / 8		13.1 - 3360	556.975	556.975											
THALLIUM	6 / 11	0 : 0.396	0.461 - 1.32	0.5895	0.810563											
VANADIUM	8 / 8		8.65 - 51.8	28.58125	28.58125											
ZINC	11 / 11		8 - 1000	250.1364	250.1364											
% Solid **(%)**	16 / 16		75.3 - 92.4	81.4625	81.4625											
Moisture **(%)**	39 / 39		8.6 - 47.8	15.1359	15.1359	17.5	12.6	12.8	16.9	21.3	12.3	11.6	13.2	14.3	18.6	13.4
PH **(pH units)**	19 / 19		5.6 - 11	8.403158	8.403158											
TOC/Solids/Sludges/Combustion	3 / 3		925 - 14800	8808.333	8808.333										10700	

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB23 TS-RDSB-23-2-1M-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-1S-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-7-1M-051904 5/19/2004 1-7 ft	RDSB23 TS-RDSB-23-7-1S-051904 5/19/2004 1-7 ft	RDSB24 RDSB24-120203-1.5 12/2/2003 1-2 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB30 RDSB30*042604-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*042604-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*042604-1.5-042604 4/26/2004 1-2 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.14 U	0.14 U	0.98852 U	1.06084 U	0.38447 U	1.04707 U	0.13 U	0.13 U	0.14 U	0.14 U	0.10225 U	0.12 U	0.13 U	0.10039 U	0.09309 U	0.09222 U
1,1,1-TRICHLOROETHANE	0.14 U	0.14 U	0.74936 U	0.80419 U	0.29145 U	0.79375 U	0.13 U	0.13 U	0.14 U	0.14 U	0.07751 U	0.12 U	0.13 U	0.0761 U	0.07057 U	0.06991 U
1,1,2,2-TETRACHLOROETHANE	0.14 U	0.14 U	1.46684 U	1.57416 U	0.5705 U	1.55372 U	0.13 U	0.13 U	0.14 U	0.14 U	0.15173 U	0.12 U	0.13 U	0.14896 U	0.13814 U	0.39326
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.14 U	0.14 U	0.95663 U	1.02662 U	0.37207 U	1.01329 U	0.13 U	0.13 U	0.14 U	0.14 U	0.09895 U	0.12 U	0.13 U	0.09715 U	0.24903	0.08924 U
1,1-DICHLOROETHANE	0.14 U	0.14 U	0.35077 U	0.37643 U	0.13642 U	0.37154 U	0.13 U	0.13 U	0.14 U	0.14 U	0.03628 U	0.12 U	0.13 U	0.03562 U	0.03303 U	0.03272 U
1,1-DICHLOROETHYLENE	0.14 U	0.14 U	1.37117 U	1.47149 U	0.53329 U	1.45239 U	0.13 U	0.13 U	0.14 U	0.14 U	0.14183 U	0.12 U	0.13 U	0.13925 U	0.12913 U	0.12791 U
1,1-DICHLOROPROPYLENE			0.71747 U	0.76997 U	0.27905 U	0.75997 U					0.07421 U			0.07286 U	0.06757 U	0.06693 U
1,2,3-TRICHLOROBENZENE			55.32922	53.96185	174.3996	121.92846					0.07092 U			0.06962 U	1.18865	0.08018
1,2,3-TRICHLOROPROPANE			0.6537 U	0.70153 U	0.25424 U	0.69242 U					0.06762 U			0.06638 U	0.06156 U	0.06098 U
1,2,4-TRICHLOROBENZENE			372.1994	391.1454	1145.4937	802.8599					0.07421 U			0.07286 U	11.57389	0.33833
1,2,4-TRIMETHYLBENZENE			0.60587 U	0.6502 U	0.23564 U	0.64175 U					0.06267 U			0.08788	0.05242 J	0.27854
1,2-CIS-DICHLOROETHYLENE	0.14 U	0.14 U	0.47832 U	0.51331 U	0.18603 U	0.50665 U	0.13 U	0.13 U	0.14 U	0.14 U	0.04948 U	0.12 U	0.13 U	0.04857 U	12.0759	0.22486
1,2-DIBROMO-3-CHLOROPROPANE			4.22513 U	4.53426 U	1.64329 U	4.47538 U					0.43704 U			0.42907 U	0.3979 U	0.39415 U
1,2-DIBROMOETHANE			0.68559 U	0.73575 U	0.26665 U	0.72619 U					0.07092 U			0.06962 U	0.06457 U	0.06396 U
1,2-DICHLOROBENZENE	12	0.54	413.0524	459.0225	272.0749	149.53676	6	0.13 U	0.87	0.14 U	0.04948 U	0.12 U	0.13 U	0.04857 U	3.96741	0.09594
1,2-DICHLOROETHANE	0.39	0.14 U	0.52615 U	0.56464 U	0.20464 U	0.55731 U	0.13 U	0.13 U	0.14 U	0.14 U	0.05442 U	0.12 U	0.13 U	0.05343 U	7.35333	0.07311
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.14 U	0.14 U	0.9088 U	0.97529 U	0.35346 U	0.96263 U	0.13 U	0.13 U	0.14 U	0.14 U	0.094 U	0.12 U	0.13 U	0.09229 U	0.6338	0.08478 U
1,2-TRANS-DICHLOROETHYLENE	0.14 U	0.14 U	0.87691 U	0.94107 U	0.34106 U	0.92885 U	0.13 U	0.13 U	0.14 U	0.14 U	0.09071 U	0.12 U	0.13 U	0.08905 U	0.09801	0.0818 U
1,3,5-TRIMETHYLBENZENE			0.78125 U	0.83841 U	0.30385 U	0.82752 U					0.08081 U			0.07934 U	0.07357 U	0.07271 J
1,3-CIS-DICHLOROPROPYLENE	0.14 U	0.14 U	0.66964 U	0.71864 U	0.26045 U	0.70931 U	0.13 U	0.13 U	0.14 U	0.14 U	0.06927 U	0.12 U	0.13 U	0.068 U	0.06306 U	0.06247 U
1,3-DICHLOROBENZENE	0.14 U	0.14 U	0.49196 J	0.45412 J	2.32574	1.03808	0.13 U	0.13 U	0.14 U	0.14 U	0.05937 U	0.12 U	0.13 U	0.05829 U	0.05405 U	0.05354 U
1,3-DICHLOROPROPANE			0.9088 U	0.97529 U	0.35346 U	0.96263 U					0.094 U			0.09229 U	0.08559 U	0.08478 U
1,3-TRANS-DICHLOROPROPYLENE	0.14 U	0.14 U	0.47832 U	0.51331 U	0.18603 U	0.50665 U	0.13 U	0.13 U	0.14 U	0.14 U	0.04948 U	0.12 U	0.13 U	0.04857 U	0.04505 U	0.04462 U
1,4-DICHLOROBENZENE	0.81	0.22	5.35466	6.02808	11.13501	5.32173	0.59	0.13 U	0.14 U	0.21	0.06267 U	0.12 U	0.13 U	0.06153 U	0.09008	0.05652 U
1,4-DIOXANE																
1-CHLOROBUTANE			2.00656	0.78708 U	0.28525 U	0.77686 U					0.07586 U			0.49154	1.5559	2.07498
2,2-DICHLOROPROPANE			0.89286 U	0.95818 U	0.34726 U	0.94574 U					0.09236 U			0.09067 U	0.08409 U	0.08329 U
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE			0.97258 U	1.04373 U	0.37827 U	1.03018 U					0.1006 U			0.09877 U	0.12127	0.09073 U
2-HEXANONE			0.97258 U	1.04373 U	0.37827 U	1.03018 U					0.1006 U			0.09877 U	0.09159 U	0.09073 U
3-CHLOROPROPENE			0.82908 U	0.88974 U	0.32246 U	0.87819 U					0.08576 U			0.0842 U	0.07808 U	0.07734 U
ACETONE	0.97 U	1 U	3.30038 U	3.54185 U	1.28363 U	3.49587 U	0.89 U	0.9 U	0.96 U	0.96 U	0.34138 U	0.86 U	0.92 U	0.33516 U	1.94247	0.77608
ACROLEIN																
ACRYLONITRILE	0.55 U	0.58 U	2.79018 U	2.99432 U	1.08519 U	2.95544 U	0.51 U	0.52 U	0.55 U	0.55 U	0.28861 U	0.49 U	0.53 U	0.28335 U	0.26277 U	0.26029 U
BENZENE	1.2	0.4	0.36671 U	0.39354 U	0.14263 U	0.38843 U	0.13 U	0.13 U	0.14 U	0.14 U	0.03793 U	0.12 U	0.13 U	0.03724 U	4.37191	0.76629
BROMOBENZENE			0.82908 U	0.88974 U	0.32246 U	0.87819 U					0.08576 U			0.0842 U	0.07808 U	0.07734 U
BROMOCHLOROMETHANE	0.14 U	0.14 U	2.59885 U	2.78899 U	1.01078 U	2.75278 U	0.13 U	0.13 U	0.14 U	0.14 U	0.26882 U	0.12 U	0.13 U	0.26392 U	0.24475 U	0.24244 U
BROMOFORM	0.14 U	0.14 U	0.74936 U	0.80419 U	0.29145 U	0.79375 U	0.13 U	0.13 U	0.14 U	0.14 U	0.07751 U	0.12 U	0.13 U	0.0761 U	0.07057 U	0.06991 U
CARBON DISULFIDE			0.58992 U	0.63308 U	0.22944 U	0.62486 U					0.06102 U			0.05991 U	0.05556 U	0.05503 U
CARBON TETRACHLORIDE	0.14 U	0.14 U	0.76531 U	0.8213 U	0.29765 U	0.81064 U	0.13 U	0.13 U	0.14 U	0.14 U	0.07916 U	0.12 U	0.13 U	0.07772 U	0.07207 U	0.07139 U
CHLOROBENZENE	3.3	0.51	1.41028	3.14505	2.34492	0.96003	4.8	0.13 U	0.15	1.7	0.08081 U	0.12 U	0.13 U	0.07934 U	0.07357 U	0.07288 U
CHLORODIBROMOMETHANE	0.14 U	0.14 U	0.52615 U	0.56464 U	0.20464 U	0.55731 U	0.13 U	0.13 U	0.14 U	0.14 U	0.05442 U	0.12 U	0.13 U	0.05343 U	0.04955 U	0.04908 U
CHLOROETHANE	0.28 U	0.29 U	1.61033 U	1.72815 U	0.62631 U	1.70571 U	0.26 U	0.26 U	0.28 U	0.28 U	0.16657 U	0.25 U	0.26 U	0.16353 U	0.15165 U	0.15022 U
CHLOROFORM	0.14 U	0.14 U	0.52615 U	0.56464 U	0.20464 U	0.55731 U	0.13 U	0.13 U	0.14 U	0.14 U	0.05442 U	0.12 U	0.13 U	0.05343 U	0.04955 U	0.04908 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.14 U	0.14 U	0.46237 U	0.4962 U	0.17983 U	0.48976 U	0.13 U	0.13 U	0.14 U	0.14 U	0.04783 U	0.12 U	0.13 U	0.04695 U	0.04354 U	0.04313 U
DICHLORODIFLUOROMETHANE			0.70153 U	0.75286 U	0.27285 U	0.74308 U					0.07256 U			0.07124 U	0.06607 U	0.06544 U
DIETHYL ETHER			0.87691 U	0.94107 U	0.34106 U	0.92885 U					0.09071 U			0.08905 U	0.08258 U	0.0818 U
ETHYL METHACRYLATE			0.92474 U	0.9924 U	0.35966 U	0.97952 U					0.09565 U			0.09391 U	0.08709 U	0.08627 U
ETHYLBENZENE	1.5	3.2	0.96995	1.25691	2.84072	1.59559	2.4	0.13 U	0.21	0.14 U	0.06432 U	0.12 U	0.13 U	0.06315 U	1.15582	1.38482

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB23 TS-RDSB-23-2-1M-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-1S-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-7-1M-051904 5/19/2004 1-7 ft	RDSB23 TS-RDSB-23-7-1S-051904 5/19/2004 1-7 ft	RDSB24 RDSB24-120203-1.5 12/2/2003 1-2 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB30 RDSB30*042604-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*042604-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*042604-1.5-042604 4/26/2004 1-2 ft
HEXACHLOROBUTADIENE			0.84503 U	0.90685 U	0.32866 U	0.89508 U					0.08741 U			0.08581 U	0.07958 U	0.07883 U
HEXACHLOROETHANE			1.84949 U	1.98481 U	0.71933 U	1.95904 U					0.19131 U			0.18782 U	0.17418 U	0.17253 U
ISOPROPYLBENZENE			0.49426 U	0.53042 U	0.19223 U	0.52354 U					0.05113 U			0.05019 U	0.04655 U	0.04611 U
M+P-XYLENE																
METHACRYLONITRILE			3.39605 U	3.64451 U	1.32083 U	3.5972 U					0.35128 U			0.34488 U	0.31982 U	0.31681 U
METHYL ACETATE																
METHYL ACRYLATE			0.87691 U	0.94107 U	0.34106 U	0.92885 U					0.09071 U			0.08905 U	0.08258 U	0.0818 U
METHYL BROMIDE	0.28 U	0.29 U	1.41901 U	1.52283 U	0.5519 U	1.50305 U	0.26 U	0.26 U	0.28 U	0.28 U	0.14678 U	0.25 U	0.26 U	0.1441 U	0.13364 U	0.13237 U
METHYL CHLORIDE	0.28 U	0.29 U	0.94069 U	1.00951 U	0.36586 U	0.99641 U	0.26 U	0.26 U	0.28 U	0.28 U	0.0973 U	0.25 U	0.26 U	0.09553 U	0.08859 U	0.08775 U
METHYL ETHYL KETONE			0.92474 U	0.9924 U	0.35966 U	0.97952 U					0.09565 U			0.09391 U	0.70637	0.08627 U
METHYL IODIDE			3.93814 U	4.22627 U	1.53167 U	4.1714 U					0.40735 U			0.39993 U	0.37088 U	0.36738 U
METHYL ISOBUTYL KETONE			1.11607 U	1.19773 U	0.43408 U	1.18218 U					0.11544 U			0.11334 U	0.10511 U	0.10411 U
METHYL METHACRYLATE			1.27551 U	1.36883 U	0.49609 U	1.35106 U					0.13194 U			0.12953 U	0.12012 U	0.90694
METHYLENE BROMIDE			0.58992 U	0.63308 U	0.22944 U	0.62486 U					0.06102 U			0.05991 U	0.05556 U	0.05503 U
METHYLENE CHLORIDE	0.88	0.29 U	0.92474 U	33.62514	0.35966 U	0.97952 U	0.26 U	0.26 U	0.28 U	0.28 U	0.09565 U	0.25 U	0.26 U	0.09391 U	5.26218	1.34334
METHYL-T-BUTYL ETHER			0.74936 U	0.80419 U	0.29145 U	0.79375 U					0.07751 U			0.0761 U	0.07057 U	0.06991 U
NAPHTHALENE			0.44643 U	0.47909 U	0.17363 U	0.47287 U					0.04618 U			0.04534 U	0.04204 U	0.04165 U
N-BUTYLBENZENE			0.63776 U	0.68442 U	0.24804 U	0.67553 U					0.06597 U			0.06477 U	0.06006 U	0.05949 U
N-PROPYLBENZENE			0.55804 U	0.59886 U	0.21704 U	0.59109 U					0.05772 U			0.05667 U	0.05255 U	0.05206 U
O-XYLENE	2.4	3.5	0.68863	1.88038	4.55318	2.15466	4.8	0.13 U	0.81	0.14 U	0.06597 U	0.12 U	0.13 U	0.06477 U	3.15929	2.5095
P-CHLOROTOLUENE			0.89286 U	0.95818 U	1.8128	0.96596					0.09236 U			0.09067 U	1.20398	0.08329 U
PENTACHLOROETHANE			1.38712 U	1.4886 U	0.53949 U	1.46928 U					0.14348 U			0.14086 U	0.13063 U	0.1294 U
P-ISOPROPYLTOLUENE			0.5102 U	0.54753 U	0.19843 U	0.54042 U					0.05277 U			0.30895	0.04805 U	0.0476 U
PROPANENITRILE			8.62564 U	9.25672 U	3.35479 U	9.13654 U					0.89222 U			0.87595 U	0.81232 U	0.80466 U
SEC-BUTYLBENZENE			0.68559 U	0.73575 U	0.26665 U	0.72619 U					0.07092 U			0.06962 U	0.06457 U	0.06396 U
STYRENE			0.87691 U	0.94107 U	0.34106 U	0.92885 U					0.09071 U			0.08905 U	0.08258 U	0.0818 U
t-Butyl Alcohol																
TERT-BUTYLBENZENE			0.68559 U	0.73575 U	0.26665 U	0.72619 U					0.07092 U			0.06962 U	0.06457 U	0.06396 U
TETRACHLOROETHYLENE	0.14 U	0.14 U	0.47832 U	0.51331 U	0.18603 U	0.50665 U	0.13 U	0.13 U	0.14 U	0.14 U	0.04948 U	0.12 U	0.13 U	0.04857 U	0.30907	0.04462 U
TETRAHYDROFURAN			9.40689 U	10.09513 U	3.65864 U	9.96406 U					0.97303 U			0.95529 U	0.8859 U	0.87754 U
TOLUENE	18	20	15.7961	50.16218	4.20864	3.25577	10	0.13 U	1.6	0.14 U	0.07092 U	0.12 U	0.13 U	0.21083	6.57202	26.999
TRANS-1,4-DICHLORO-2-BUTENE			1.8176 U	1.95059 U	0.70692 U	1.92526 U					0.18801 U			0.18458 U	0.17117 U	0.16956 U
TRICHLOROETHYLENE	0.2	0.14 U	0.68559 U	0.73575 U	0.26665 U	0.72619 U	0.13 U	0.13 U	0.14 U	0.14 U	0.07092 U	0.12 U	0.13 U	0.06962 U	0.2219	0.627
TRICHLOROFLUOROMETHANE			0.57398 U	0.61597 U	0.22324 U	0.60798 U					0.05937 U			0.05829 U	0.05405 U	0.05354 U
VINYL CHLORIDE	0.14 U	0.14 U	2.27997 U	2.44679 U	0.88676 U	2.41502 U	0.13 U	0.13 U	0.14 U	0.14 U	0.23584 U	0.12 U	0.13 U	0.23154 U	0.21472 U	0.23798
XYLENES,TOTAL	7	14	5.58357	8.43189	17.4927	9.85098	14	0.13 U	2.2	0.14 U	0.16162 U	0.12 U	0.66	0.15868 U	7.20712	7.27406
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																

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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB23 TS-RDSB-23-2-1M-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-1S-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-7-1M-051904 5/19/2004 1-7 ft	RDSB23 TS-RDSB-23-7-1S-051904 5/19/2004 1-7 ft	RDSB24 RDSB24-120203-1.5 12/2/2003 1-2 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB30 RDSB30*042604-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*042604-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*042604-1.5-042604 4/26/2004 1-2 ft
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																
NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB18 RDSB18-092603-2.0 9/26/2003 1-3 ft	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB23 TS-RDSB-23-2-1M-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-2-1S-051904 5/19/2004 1-2 ft	RDSB23 TS-RDSB-23-7-1M-051904 5/19/2004 1-7 ft	RDSB23 TS-RDSB-23-7-1S-051904 5/19/2004 1-7 ft	RDSB24 RDSB24-120203-1.5 12/2/2003 1-2 ft	RDSB25 RDSB25-120303-1.0 12/3/2003 0.5-1.5 ft	RDSB26 RDSB26-120203-1.3 12/2/2003 0.5-1.5 ft	RDSB27 RDSB27-120803-1.8 12/8/2003 1-3 ft	RDSB29 RDSB29*042604-1.5-042604 4/26/2004 1-2 ft	RDSB3 RDSB3-092303-1.5 9/23/2003 1-2 ft	RDSB3 RDSB3-092303-2.5 9/23/2003 1.5-3.5 ft	RDSB30 RDSB30*042604-1.5-042604 4/26/2004 1-2 ft	RDSB31 RDSB31*042604-1.5-042604 4/26/2004 1-2 ft	RDSB32 RDSB32*042604-1.5-042604 4/26/2004 1-2 ft
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																
ARSENIC																
BARIUM																
BERYLLIUM																
CADMIUM																
CALCIUM																
CHROMIUM																
COBALT																
COPPER																
IRON																
LEAD																
MAGNESIUM																
MANGANESE																
MERCURY																
NICKEL																
POTASSIUM																
SELENIUM																
SILVER																
SODIUM																
THALLIUM																
VANADIUM																
ZINC																
% Solid **(%)**			78.4	76.9	86.7	77.1					78.3			85.4	83	87
Moisture **(%)**	13.2	15.3					13.1	8.6	16.8	11.1		12.1	16.3			
PH **(pH units)**																
TOC/Solids/Sludges/Combustion																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft	RDSB6 RDSB6- 092203-2.5 9/22/2003 1.5-3.5 ft	RDSB7 RDSB7- 100203-0.75 10/2/2003 0.25-0.75 ft	RDSB8 RDSB8- 091803-2.0 9/18/2003 1-3 ft	RDSB9 RDSB9- 093003-1.25 9/30/2003 0.5-1.5 ft	SB1-1 SB1-1-110692- 0.5-1 11/6/1992 0.5-1 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	9.21522 U	11.08949 U	8.14572 U	8.74126 U	0.14 U	0.15 U	4.73138 U	1.5377 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	
1,1,1-TRICHLOROETHANE	6.98573 U	8.40655 U	6.17498 U	6.62644 U	0.14 U	0.15 U	3.58669 U	1.16567 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
1,1,2,2-TETRACHLOROETHANE	13.6742 U	16.45537 U	12.0872 U	12.9709 U	0.14 U	0.15 U	7.02076 U	2.28175 U	0.15 U	0.74 U	11	3.1	5.8 U	1.4 U	0.15 U	
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	8.91795 U	10.73176 U	7.88295 U	8.45928 U	0.14 U	0.15 U	4.57875 U	1.4881 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
1,1-DICHLOROETHANE	3.26992 U	3.93498 U	2.89042 U	3.10174 U	0.14 U	0.15 U	1.67888 U	0.54563 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
1,1-DICHLOROETHYLENE	12.7824 U	15.38219 U	11.2989 U	12.12497 U	0.14 U	0.15 U	6.56288 U	2.13294 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
1,1-DICHLOROPROPYLENE	6.68847 U	8.04882 U	5.91222 U	6.34446 U			3.43407 U	1.11607 U								
1,2,3-TRICHLOROBENZENE	6.3912 U	7.6911 U	5.64945 U	6.06249 U			89.89409	41.86787								
1,2,3-TRICHLOROPROPANE	6.09394 U	7.33337 U	5.38669 U	5.78051 U			3.12882 U	1.01687 U								
1,2,4-TRICHLOROBENZENE	24.20213	8.04882 U	5.91222 U	6.34446 U			625.8031	265.004								
1,2,4-TRIMETHYLBENZENE	5.64804 U	6.79678 U	4.99254 U	5.35755 U			2.89988 U	0.94246 U								
1,2-CIS-DICHLOROETHYLENE	4.45898 U	5.36588 U	3.94148 U	4.22964 U	0.14 U	0.15 U	2.28938 U	0.74405 U	6.9	5.8	26	11	24	3.4	0.15	
1,2-DIBROMO-3-CHLOROPROPANE	39.38763 U	47.39862 U	34.81638 U	37.36183 U			20.22283 U	6.57242 U								
1,2-DIBROMOETHANE	6.3912 U	7.6911 U	5.64945 U	6.06249 U			3.28144 U	1.06647 U								
1,2-DICHLOROBENZENE	121.82296	8.1374	30.67174	38.37978	0.14 U	0.15 U	338.78543	141.45316	180	280	430	220	1000	490	1.8	0 U
1,2-DICHLOROETHANE	4.90488 U	5.90247 U	4.33562 U	4.65261 U	0.14 U	0.15 U	2.51832 U	0.81845 U	0.15 U	0.74 U	5.2	1.8	5.8 U	1.4 U	0.15 U	0 U
1,2-DICHLOROETHYLENE																0 U
1,2-DICHLOROPROPANE	8.47206 U	10.19517 U	7.48881 U	8.03632 U	0.14 U	0.15 U	4.34982 U	1.41369 U	0.15 U	0.74 U	0.26 U	0.16 U	13	1.4 U	0.15 U	0 U
1,2-TRANS-DICHLOROETHYLENE	8.17479 U	9.83745 U	7.22604 U	7.75434 U	0.14 U	0.15 U	4.19719 U	1.36409 U	0.45	0.74 U	0.26 U	1	5.8 U	1.4 U	0.15 U	0 U
1,3,5-TRIMETHYLBENZENE	7.283 U	8.76427 U	6.43775 U	6.90841 U			3.73932 U	1.21528 U								
1,3-CIS-DICHLOROPROPYLENE	6.24257 U	7.51223 U	5.51807 U	5.9215 U	0.14 U	0.15 U	3.20513 U	1.04167 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
1,3-DICHLOROBENZENE	5.35077 U	6.43906 U	4.72977 U	5.07557 U	0.14 U	0.15 U	2.74725 U	0.89286 U	0.19	0.74 U	0.41	0.23	5.8 U	1.4 U	0.15 U	0 U
1,3-DICHLOROPROPANE	8.47206 U	10.19517 U	7.48881 U	8.03632 U			4.34982 U	1.41369 U								
1,3-TRANS-DICHLOROPROPYLENE	4.45898 U	5.36588 U	3.94148 U	4.22964 U	0.14 U	0.15 U	2.28938 U	0.74405 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
1,4-DICHLOROBENZENE	5.64804 U	6.79678 U	4.99254 U	5.35755 U	0.25	0.15 U	6.56397	2.74976	3.9	6.3	9	4.6	23	9.7	0.15 U	0 U
1,4-DIOXANE																
1-CHLOROBUTANE	25.8269	6.4808 J	1.85888 J	6.48545 U			3.51038 U	1.14087 U								
2,2-DICHLOROPROPANE	8.32342 U	10.01631 U	7.35742 U	7.89533 U			4.2735 U	1.38889 U								
2-CHLOROETHYL VINYL ETHER																0 U
2-CHLOROTOLUENE	9.06659 U	10.91063 U	8.01434 U	8.60027 U			4.65507 U	1.5129 U								
2-HEXANONE	9.06659 U	10.91063 U	8.01434 U	8.60027 U			4.65507 U	1.5129 U								
3-CHLOROPROPENE	7.72889 U	9.30086 U	6.83189 U	7.33138 U			3.96825 U	1.28968 U								
ACETONE	30.76694 U	37.02458 U	27.19619 U	29.18453 U	7.9	1 U	15.7967 U	5.13393 U	1 U	5.2 U	19	11	41 U	9.8 U	1 U	0 U
ACROLEIN																0 U
ACRYLONITRILE	26.0107 U	31.30098 U	22.99195 U	24.67291 U	0.55 U	0.58 U	13.3547 U	4.34028 U	0.6 U	3 U	1 U	0.63 U	23 U	5.6 U	0.6 U	0 U
BENZENE	3.41855 U	4.11384 U	3.0218 U	3.24273 U	0.66	0.15 U	1.75519 U	0.57044 U	1.2	1.4	19	8.1	11	13	0.15 U	0 U
BROMOBENZENE	7.72889 U	9.30086 U	6.83189 U	7.33138 U			3.96825 U	1.28968 U								
BROMOCHLOROMETHANE	24.22711 U	29.15462 U	21.41536 U	22.98105 U	0.14 U	0.15 U	12.43895 U	4.04266 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	
BROMOFORM	6.98573 U	8.40655 U	6.17498 U	6.62644 U	0.14 U	0.15 U	3.58669 U	1.16567 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
CARBON DISULFIDE	5.49941 U	6.61792 U	4.86115 U	5.21656 U			2.82357 U	0.91766 U								
CARBON TETRACHLORIDE	7.13436 U	8.58541 U	6.30636 U	6.76743 U	0.14 U	0.15 U	3.663 U	1.19048 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
CHLOROBENZENE	7.283 U	8.76427 U	6.43775 U	6.90841 U	1.2	0.56	3.73932 U	1.21528 U	0.18	6.4	1.5	4.8	36	1.4 U	0.41	0 U
CHLORODIBROMOMETHANE	4.90488 U	5.90247 U	4.33562 U	4.65261 U	0.14 U	0.15 U	2.51832 U	0.81845 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
CHLOROETHANE	15.01189 U	18.06513 U	13.26964 U	14.23979 U	0.27 U	0.29 U	7.70757 U	2.50496 U	0.3 U	1.5 U	0.52 U	0.32 U	12 U	2.8 U	0.3 U	0 U
CHLOROFORM	4.90488 U	5.90247 U	4.33562 U	4.65261 U	0.14 U	0.15 U	2.51832 U	0.81845 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	4.31034 U	5.18702 U	3.81009 U	4.08865 U	0.14 U	0.15 U	2.21306 U	0.71925 U	0.15 U	0.74 U	0.26 U	0.16 U	5.8 U	1.4 U	0.15 U	0 U
DICHLORODIFLUOROMETHANE	6.53983 U	7.86996 U	5.78083 U	6.20347 U			3.35775 U	1.09127 U								
DIETHYL ETHER	8.17479 U	9.83745 U	7.22604 U	7.75434 U			4.19719 U	1.36409 U								
ETHYL METHACRYLATE	8.62069 U	10.37404 U	7.62019 U	8.17731 U			4.42613 U	1.43849 U								
ETHYLBENZENE	11.53173	1.32256 J	6.96138	7.26411	3.5	0.15 U	6.05543	2.71215	6.3	8.3	67	36	63	24	0.88	0 U

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft	RDSB6 RDSB6- 092203-2.5 9/22/2003 1.5-3.5 ft	RDSB7 RDSB7- 100203-0.75 10/2/2003 0.25-0.75 ft	RDSB8 RDSB8- 091803-2.0 9/18/2003 1-3 ft	RDSB9 RDSB9- 093003-1.25 9/30/2003 0.5-1.5 ft	SB1-1 SB1-1-110692- 0.5-1 11/6/1992 0.5-1 ft
HEXACHLOROBUTADIENE	7.87753 U	9.47972 U	6.96328 U	7.47237 U			4.04457 U	1.31448 U								
HEXACHLOROETHANE	17.24138 U	20.74808 U	15.24038 U	16.35461 U			8.85226 U	2.87698 U								
ISOPROPYLBENZENE	4.60761 U	5.54474 U	4.07286 U	4.37063 U			2.36569 U	0.76885 U								
M+P-XYLENE																
METHACRYLONITRILE	31.65874 U	38.09776 U	27.98449 U	30.03045 U			16.25458 U	5.28274 U								
METHYL ACETATE																
METHYL ACRYLATE	8.17479 U	9.83745 U	7.22604 U	7.75434 U			4.19719 U	1.36409 U								
METHYL BROMIDE	13.2283 U	15.91878 U	11.69305 U	12.54794 U	0.27 U	0.29 U	6.79182 U	2.20734 U	0.3 U	1.5 U	0.52 U	0.32 U	12 U	2.8 U	0.3 U	0 U
METHYL CHLORIDE	8.76932 U	10.5529 U	7.75157 U	8.31829 U	0.27 U	0.29 U	4.50244 U	1.46329 U	0.3 U	1.5 U	0.52 U	0.32 U	12 U	2.8 U	0.3 U	0 U
METHYL ETHYL KETONE	8.62069 U	10.37404 U	7.62019 U	8.17731 U			4.42613 U	1.43849 U								
METHYL IODIDE	36.71225 U	44.17909 U	32.45149 U	34.82405 U			18.84921 U	6.12599 U								
METHYL ISOBUTYL KETONE	10.40428 U	12.52039 U	9.19678 U	9.86916 U			5.34188 U	1.73611 U								
METHYL METHACRYLATE	11.89061 U	14.30902 U	10.51061 U	11.27904 U			6.10501 U	1.98413 U								
METHYLENE BROMIDE	5.49941 U	6.61792 U	4.86115 U	5.21656 U			2.82357 U	0.91766 U								
METHYLENE CHLORIDE	8.62069 U	10.37404 U	7.62019 U	8.17731 U	0.27 U	0.29 U	4.42613 U	1.43849 U	1.3	1.5 U	8.7	3.1	12 U	2.8 U	0.3 U	0 U
METHYL-T-BUTYL ETHER	6.98573 U	8.40655 U	6.17498 U	6.62644 U			3.58669 U	1.16567 U								
NAPHTHALENE	4.16171 U	5.00816 U	3.67871 U	3.94767 U			2.13675 U	0.69444 U								
N-BUTYLBENZENE	5.9453 U	7.15451 U	5.2553 U	5.63952 U			3.0525 U	0.99206 U								
N-PROPYLBENZENE	5.20214 U	6.2602 U	4.59839 U	4.93458 U			2.67094 U	0.86806 U								
O-XYLENE	23.02152	7.15451 U	11.76381	12.48499	1	0.18	12.46591	5.66297	14	23	55	31	110	20	1	
P-CHLOROTOLUENE	8.32342 U	10.01631 U	7.35742 U	7.89533 U			4.2735 U	1.38889 U								
PENTACHLOROETHANE	12.93103 U	15.56106 U	11.43028 U	12.26596 U			6.63919 U	2.15774 U								
P-ISOPROPYLTOLUENE	4.75624 U	5.72361 U	4.20424 U	4.51162 U			2.442 U	0.79365 U								
PROPANENITRILE	80.41023 U	96.76473 U	71.07797 U	76.27453 U			41.2851 U	13.41766 U								
SEC-BUTYLBENZENE	6.3912 U	7.6911 U	5.64945 U	6.06249 U			3.28144 U	1.06647 U								
STYRENE	8.17479 U	9.83745 U	7.22604 U	7.75434 U			4.19719 U	1.36409 U								
t-Butyl Alcohol																
TERT-BUTYLBENZENE	6.3912 U	7.6911 U	5.64945 U	6.06249 U			3.28144 U	1.06647 U								
TETRACHLOROETHYLENE	4.45898 U	5.36588 U	3.94148 U	4.22964 U	0.14 U	0.15 U	2.28938 U	0.74405 U	0.89	0.74 U	0.72	0.4	5.8 U	1.4 U	0.15 U	0 U
TETRAHYDROFURAN	87.69322 U	105.529 U	77.51571 U	83.18295 U			45.02442 U	14.63294 U								
TOLUENE	382.93469	122.62084	96.95367	99.30575	0.14 U	0.15 U	376.50113	178.96203	32	65	740	310	500	600	2.9	0 U
TRANS-1,4-DICHLORO-2-BUTENE	16.94411 U	20.39035 U	14.97761 U	16.07264 U			8.69963 U	2.82738 U								
TRICHLOROETHYLENE	6.3912 U	7.6911 U	5.64945 U	6.06249 U	0.14 U	0.15 U	3.28144 U	1.06647 U	10	15	10	3.4	5.8 U	1.4 U	0.15 U	0 U
TRICHLOROFLUOROMETHANE	5.35077 U	6.43906 U	4.72977 U	5.07557 U			2.74725 U	0.89286 U								0 U
VINYL CHLORIDE	21.25446 U	25.57737 U	18.78771 U	20.16129 U	0.14 U	0.15 U	10.9127 U	3.54663 U	0.15 U	0.74 U	1.9	0.76	5.8 U	1.4 U	0.15 U	0 U
XYLENES,TOTAL	75.92284	9.35399 J	43.18411	47.2841	4.4	0.15	53.56618	23.03605	32	46	230	130	320	85	3.4	0 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE																
2,6-DINITROTOLUENE																
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft	RDSB6 RDSB6- 092203-2.5 9/22/2003 1.5-3.5 ft	RDSB7 RDSB7- 100203-0.75 10/2/2003 0.25-0.75 ft	RDSB8 RDSB8- 091803-2.0 9/18/2003 1-3 ft	RDSB9 RDSB9- 093003-1.25 9/30/2003 0.5-1.5 ft	SB1-1 SB1-1-110692- 0.5-1 11/6/1992 0.5-1 ft
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE																
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																
ACENAPHTHYLENE																
ACETOPHENONE																
ANTHRACENE																
ATRAZINE																
BENZALDEHYDE																
BENZIDINE																
BENZO(A)ANTHRACENE																
BENZO(A)PYRENE																
BENZO(B)FLUORANTHENE																
BENZO(GHI)PERYLENE																
BENZO(K)FLUORANTHENE																
BENZYL BUTYL PHTHALATE																
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																
CAPROLACTAM																
CARBAZOLE																
CHRYSENE																
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE																
DIBENZOFURAN																
DIETHYL PHTHALATE																
DIMETHYL PHTHALATE																
DI-N-BUTYL PHTHALATE																
DI-N-OCTYL PHTHALATE																
FLUORANTHENE																
FLUORENE																
HEXACHLOROBENZENE																
HEXACHLOROBUTADIENE																
HEXACHLOROCYCLOPENTADIENE																
HEXACHLOROETHANE																
INDENO(1,2,3-CD)PYRENE																
ISOPHORONE																
NAPHTHALENE																
NITROBENZENE																
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB38 RDSB38*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB38 RDSB38*0518 04-2-052804 5/28/2004 1-3 ft	RDSB39 RDSB39*0518 04-1-052804 5/28/2004 0.5-1.5 ft	RDSB39 RDSB39*0518 04-2-052804 5/28/2004 1-3 ft	RDSB4 RDSB4- 092403-0.5 9/24/2003 0.25-0.75 ft	RDSB4 RDSB4- 092403-2.25 9/24/2003 1-3 ft	RDSB40 RDSB40*0518 04-1-060204 6/2/2004 0.5-1.5 ft	RDSB40 RDSB40*0518 04-2-060204 6/2/2004 1-3 ft	RDSB5 RDSB5- 100103-1.0 10/1/2003 0.5-1.5 ft	RDSB5 RDSB5- 100103-2.5 10/1/2003 1.5-3.5 ft	RDSB6 RDSB6- 092203-1.0 9/22/2003 0.5-1.5 ft	RDSB6 RDSB6- 092203-2.5 9/22/2003 1.5-3.5 ft	RDSB7 RDSB7- 100203-0.75 10/2/2003 0.25-0.75 ft	RDSB8 RDSB8- 091803-2.0 9/18/2003 1-3 ft	RDSB9 RDSB9- 093003-1.25 9/30/2003 0.5-1.5 ft	SB1-1 SB1-1-110692- 0.5-1 11/6/1992 0.5-1 ft
N-NITROSODIPHENYLAMINE																
PENTACHLOROPHENOL																
PHENANTHRENE																
PHENOL																
PYRENE																
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY																1.4
ARSENIC																1.7
BARIUM																
BERYLLIUM																0 U
CADMIUM																2.3
CALCIUM																
CHROMIUM																36
COBALT																
COPPER																92
IRON																
LEAD																130
MAGNESIUM																
MANGANESE																
MERCURY																0.14
NICKEL																27
POTASSIUM																
SELENIUM																0 U
SILVER																1.5
SODIUM																
THALLIUM																0 U
VANADIUM																
ZINC																1000
% Solid **(%)**	84.1	84.2	92.4	80.6			78	80								
Moisture **(%)**					10.5	17.6			20.3	15.9	47.8	24.4	14.8	12.2	13	
PH **(pH units)**																
TOC/Solids/Sludges/Combustion																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE														0.09805 U	0.10292 U	
1,1,1-TRICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.07433 U	0.07802 U	0 U
1,1,2,2-TETRACHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.1455 U	0.15272 U	0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.09489 U	0.0996 U	0 U
1,1-DICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.03479 U	0.03652 U	0 U
1,1-DICHLOROETHYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.13601 U	0.14276 U	0 U
1,1-DICHLOROPROPYLENE														0.07117 U	0.0747 U	
1,2,3-TRICHLOROBENZENE														0.068 U	0.07138 U	
1,2,3-TRICHLOROPROPANE														0.06484 U	0.06806 U	
1,2,4-TRICHLOROBENZENE														0.07117 U	0.0747 U	
1,2,4-TRIMETHYLBENZENE														0.0601 U	0.06308 U	
1,2-CIS-DICHLOROETHYLENE														0.04744 U	0.0498 U	
1,2-DIBROMO-3-CHLOROPROPANE														0.41909 U	0.43991 U	
1,2-DIBROMOETHANE														0.068 U	0.07138 U	
1,2-DICHLOROBENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0.03	20	0 U	0.0043	0 U	0 U	0.04744 U	0.0498 U	0 U
1,2-DICHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.05219 U	0.05478 U	0 U
1,2-DICHLOROETHYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U		0 U						0 U
1,2-DICHLOROPROPANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.09014 U	0.09462 U	0 U
1,2-TRANS-DICHLOROETHYLENE	0 U		0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U			0.08698 U	0.0913 U	0 U
1,3,5-TRIMETHYLBENZENE														0.07749 U	0.08134 U	
1,3-CIS-DICHLOROPROPYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.06642 U	0.06972 U	0 U
1,3-DICHLOROBENZENE	0.11		0 U	0 U	0 U	0 U	0 U	0.015	0 U	0 U	0 U	0 U	0 U	0.05693 U	0.05976 U	0 U
1,3-DICHLOROPROPANE														0.09014 U	0.09462 U	
1,3-TRANS-DICHLOROPROPYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.04744 U	0.0498 U	0 U
1,4-DICHLOROBENZENE	0.13		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.0087	0 U	0 U	0.0601 U	0.06308 U	0 U
1,4-DIOXANE																
1-CHLOROBUTANE														0.07275 U	0.07636 U	
2,2-DICHLOROPROPANE														0.08856 U	0.09296 U	
2-CHLOROETHYL VINYL ETHER	0 U		0 U			0 U	0 U	0 U	0 U	0 U						
2-CHLOROTOLUENE														0.09647 U	0.10126 U	
2-HEXANONE	0 U			0 U	0 U		0 U	0 U		0 U	0 U	0 U	0 U	0.09647 U	0.10126 U	0 U
3-CHLOROPROPENE														0.08224 U	0.08632 U	
ACETONE	0.21		0.66 E	1.3	16	34 E	1.7 E	0.57 E	0 U	0.34 E	0.056	0.22	0 U	0.32737 U	0.34363 U	0.2
ACROLEIN			0 U			0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U			
ACRYLONITRILE			0 U			0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.27676 U	0.2905 U	
BENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.03637 U	0.03818 U	0 U
BROMOBENZENE														0.08224 U	0.08632 U	
BROMOCHLOROMETHANE														0.25778 U	0.27058 U	
BROMOFORM	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.07433 U	0.07802 U	0 U
CARBON DISULFIDE	0 U			0 U	0 U						0 U	0 U	0 U	0.05851 U	0.06142 U	0 U
CARBON TETRACHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.07591 U	0.07968 U	0 U
CHLOROBENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0.091	0.39	0 U	0 U	0 U	0.097	0.07749 U	0.08134 U	0 U
CHLORODIBROMOMETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.05219 U	0.05478 U	0 U
CHLOROETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.15973 U	0.16766 U	0 U
CHLOROFORM	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.05219 U	0.05478 U	0 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.04586 U	0.04814 U	0 U
DICHLORODIFLUOROMETHANE														0.06959 U	0.07304 U	
DIETHYL ETHER														0.08698 U	0.0913 U	
ETHYL METHACRYLATE														0.09173 U	0.09628 U	
ETHYLBENZENE	0 U		0 U	0 U	0 U	0 U	0 U	0.015	0.51	0 U	0 U	0 U	0 U	0.06168 U	0.06474 U	0 U

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft
HEXACHLOROBUTADIENE														0.08382 U	0.08798 U	
HEXACHLOROETHANE														0.18345 U	0.19256 U	
ISOPROPYLBENZENE														0.04903 U	0.05146 U	
M+P-XYLENE																
METHACRYLONITRILE														0.33685 U	0.35359 U	
METHYL ACETATE																
METHYL ACRYLATE														0.08698 U	0.0913 U	
METHYL BROMIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.14075 U	0.14774 U	0 U
METHYL CHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.09331 U	0.09794 U	0 U
METHYL ETHYL KETONE	0 U			0 U	0 U						0 U	0 U	0 U	0.09173 U	0.09628 U	0 U
METHYL IODIDE														0.39062 U	0.41003 U	
METHYL ISOBUTYL KETONE	0 U			0 U	0 U		0 U	0 U		0 U	0 U	0 U	0 U	0.1107 U	0.1162 U	0 U
METHYL METHACRYLATE														0.12652 U	0.1328 U	
METHYLENE BROMIDE														0.05851 U	0.06142 U	
METHYLENE CHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.10505	0.09628 U	0 U
METHYL-T-BUTYL ETHER														0.07433 U	0.07802 U	
NAPHTHALENE														0.04428 U	0.04648 U	
N-BUTYLBENZENE														0.06326 U	0.0664 U	
N-PROPYLBENZENE														0.05535 U	0.0581 U	
O-XYLENE														0.06326 U	0.0664 U	
P-CHLOROTOLUENE														0.08856 U	0.09296 U	
PENTACHLOROETHANE														0.13759 U	0.14442 U	
P-ISOPROPYLTOLUENE														0.05061 U	0.05312 U	
PROPANENITRILE														0.85558 U	0.89807 U	
SEC-BUTYLBENZENE														0.068 U	0.07138 U	
STYRENE	0 U			0 U	0 U					0 U	0 U	0 U	0 U	0.08698 U	0.0913 U	0 U
t-Butyl Alcohol																
TERT-BUTYLBENZENE														0.068 U	0.07138 U	
TETRACHLOROETHYLENE	0.0059		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.04744 U	0.0498 U	0 U
TETRAHYDROFURAN														0.93307 U	0.97942 U	
TOLUENE	0.048		0 U	0.004 J	0.021 J	0.0077	0.0048 J	0.0074 J	0.64	0 U	0 U	0 U	0.0043 J	0.068 U	0.07138 U	0.018
TRANS-1,4-DICHLORO-2-BUTENE														0.18029 U	0.18924 U	
TRICHLOROETHYLENE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.068 U	0.07138 U	0 U
TRICHLOROFLUOROMETHANE			0 U		0 U	0 U	0 U	0 U	0 U	0 U				0.05693 U	0.05976 U	0 U
VINYL CHLORIDE	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.22615 U	0.23738 U	0 U
XYLENES,TOTAL	0.033		0 U	0 U	0.01	0 U	0 U	0.06	5.6	0 U	0 U	0 U	0.0062	0.15498 U	0.16268 U	0 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE	0 U			0.62	0 U											
1,2-DICHLOROBENZENE	0 U			0 U	0 U											
1,2-DIPHENYLHYDRAZINE	0 U			0 U	0 U											
1,3-DICHLOROBENZENE	0.11 J			0 U	0 U											
1,4-DICHLOROBENZENE	0.13 J			0 U	0 U											
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL																
2,4-DICHLOROPHENOL																
2,4-DIMETHYLPHENOL																
2,4-DINITROPHENOL																
2,4-DINITROTOLUENE	0 U			0 U	0 U											
2,6-DINITROTOLUENE	0 U			0 U	0 U											
2-CHLORONAPHTHALENE	0 U			0 U	0 U											
2-CHLOROPHENOL																

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE	0 U			0 U	0 U											
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE	0 U			0 U	0 U											
3-NITROANILINE	0 U			0 U	0 U											
4-BROMOPHENYL PHENYL ETHER	0 U			0 U	0 U											
4-CHLORO-3-METHYLPHENOL																
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER	0 U			0 U	0 U											
4-NITROANILINE	0 U			0 U	0 U											
4-NITROPHENOL																
ACENAPHTHENE	0 U			0 U	0 U											
ACENAPHTHYLENE	0 U			0 U	0 U											
ACETOPHENONE																
ANTHRACENE	0 U			0 U	0 U											
ATRAZINE																
BENZALDEHYDE																
BENZIDINE	0 U			0 U	0 U											
BENZO(A)ANTHRACENE	0 U			0 U	0.055											
BENZO(A)PYRENE	0 U			0 U	0 U											
BENZO(B)FLUORANTHENE	0 U			0 U	0 U											
BENZO(GHI)PERYLENE	0 U			0 U	0 U											
BENZO(K)FLUORANTHENE	0 U			0 U	0 U											
BENZYL BUTYL PHTHALATE	0 U			0 U	0 U											
Biphenyl																
BIS(2-CHLOROETHOXY) METHANE	0 U			0 U	0 U											
BIS(2-CHLOROETHYL) ETHER	0 U			0 U	0 U											
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER	0 U			0 U	0 U											
BIS(2-ETHYLHEXYL)PHTHALATE	0 U			0.099 J	0 U											
CAPROLACTAM																
CARBAZOLE	0 U			0 U	0 U											
CHRYSENE	0 U			0 U	0.074 J											
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE	0 U			0 U	0 U											
DIBENZOFURAN																
DIETHYL PHTHALATE	0 U			0 U	0 U											
DIMETHYL PHTHALATE	0 U			0 U	0 U											
DI-N-BUTYL PHTHALATE	0 U			0 U	0 U											
DI-N-OCTYL PHTHALATE	0 U			0 U	0 U											
FLUORANTHENE	0 U			0 U	0.15 J											
FLUORENE	0 U			0 U	0 U											
HEXACHLOROBENZENE	0 U			0 U	0 U											
HEXACHLOROBUTADIENE	0 U			0 U	0 U											
HEXACHLOROCYCLOPENTADIENE	0 U			0 U	0 U											
HEXACHLOROETHANE	0 U			0 U	0 U											
INDENO(1,2,3-CD)PYRENE	0 U			0 U	0 U											
ISOPHORONE	0 U			0 U	0 U											
NAPHTHALENE	0 U			0 U	0 U											
NITROBENZENE	0 U			0 U	0 U											
N-NITROSODIMETHYLAMINE	0 U			0 U	0 U											
N-NITROSODI-N-PROPYLAMINE	0 U			0 U	0 U											

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SB1-1 SB1-1-110692-1-1.5 11/6/1992 1-1.5 ft	SB1-1 SB1-1-33914-0.5-1 11/6/1992 0.5-1 ft	SB1-2 SB1-2-110692-1-2 11/6/1992 1-2 ft	SB2-3 SB2-3-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-4 SB2-4-110592-0.5-2 11/5/1992 0.5-2 ft	SB2-5 SB2-5-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SB3-5 SB3-5-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-6 SB3-6-110492-1.5-2 11/4/1992 1.5-2 ft	SB3-7 SB3-7-110592-0.5-1 11/5/1992 0.5-1 ft	SB4-12 SB4-12-110592-0.5-2 11/5/1992 0.5-2 ft	SB5-1 SB5-1-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-0.5-1 11/9/1992 0.5-1 ft	SB5-2 SB5-2-110992-1.5-2 11/9/1992 1.5-2 ft	SB5-6 TS-SB5-6-5-1M-051904 5/19/2004 1-5 ft	SB5-6 TS-SB5-6-5-1S-051904 5/19/2004 1-5 ft	SBR13 SBR13-110692-0.5-1 11/6/1992 0.5-1 ft
N-NITROSODIPHENYLAMINE	0 U			0 U	0 U											
PENTACHLOROPHENOL																
PHENANTHRENE	0 U			0.051 J	0.078 J											
PHENOL																
PYRENE	0 U			0 U	0.11 J											
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																
ANTIMONY			0 U							0 U						
ARSENIC			1							0.68						
BARIUM																
BERYLLIUM			0 U							0 U						
CADMIUM			0 U							0 U						
CALCIUM																
CHROMIUM			8							5.6						
COBALT																
COPPER			36							4						
IRON																
LEAD			22							6.5						
MAGNESIUM																
MANGANESE																
MERCURY			0 U							0 U						
NICKEL			4.2							0 U						
POTASSIUM																
SELENIUM			0 U							0 U						
SILVER			1.2							0 U						
SODIUM																
THALLIUM			0 U							0 U						
VANADIUM																
ZINC			170							8						
% Solid **(%)**														76	75.3	
Moisture **(%)**																
PH **(pH units)**				11		6.8	8.6		9.3	6.4	8.8	9.3	7.7			7
TOC/Solids/Sludges/Combustion																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,1,2,2-TETRACHLOROETHANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE				0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U		1.2 U
1,1,2-TRICHLOROETHANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,1-DICHLOROETHANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,1-DICHLOROETHYLENE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,1-DICHLOROPROPYLENE																
1,2,3-TRICHLOROBENZENE				0.001 U		0.001 U		1.6		0.18		0.001 U		450		49
1,2,3-TRICHLOROPROPANE																
1,2,4-TRICHLOROBENZENE				0.001 U		0.001 U		3.5		4.2		0.001 U		300		410
1,2,4-TRIMETHYLBENZENE																
1,2-CIS-DICHLOROETHYLENE				0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,2-DIBROMO-3-CHLOROPROPANE				0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U		1.2 U
1,2-DIBROMOETHANE				0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,2-DICHLOROBENZENE	0 U	0 U		0.001 U		0.001 U		0.056 U		7.3		0.001 U		10		73
1,2-DICHLOROETHANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,2-DICHLOROETHYLENE	0 U															
1,2-DICHLOROPROPANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,2-TRANS-DICHLOROETHYLENE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,3,5-TRIMETHYLBENZENE																
1,3-CIS-DICHLOROPROPYLENE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,3-DICHLOROBENZENE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.004		0.001 U		6		0.68
1,3-DICHLOROPROPANE																
1,3-TRANS-DICHLOROPROPYLENE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
1,4-DICHLOROBENZENE	0 U	0 U		0.001 U		0.003		0.11		0.044		0.001 U		54		2.8
1,4-DIOXANE				0.084 U		0.082 U		3.9 U		0.079 U		0.085 U		4.2 U		41 U
1-CHLOROBUTANE																
2,2-DICHLOROPROPANE																
2-CHLOROETHYL VINYL ETHER																
2-CHLOROTOLUENE																
2-HEXANONE	0 U			0.004 U		0.003 U		0.17 U		0.003 U		0.004 U		0.18 U		1.8 U
3-CHLOROPROPENE																
ACETONE	0 U	4.6		0.021		0.018		0.39 U		0.054		0.008 U		0.42 U		4.1 U
ACROLEIN				0.024 U		0.023 U		1.1 U		0.023 U		0.024 U		1.2 U		12 U
ACRYLONITRILE				0.005 U		0.005 U		0.22 U		0.005 U		0.005 U		0.24 U		2.3 U
BENZENE	0 U	0 U		0.0006 U		0.019		0.62		0.006		0.0006 U		0.11		0.29 U
BROMOBENZENE																
BROMOCHLOROMETHANE				0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
BROMOFORM	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
CARBON DISULFIDE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.003		0.001 U		0.06 U		0.58 U
CARBON TETRACHLORIDE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
CHLOROBENZENE	0 U	0 U		0.001 U		0.049		0.056 U		0.015		0.001 U		42		0.58 U
CHLORODIBROMOMETHANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
CHLOROETHANE	0 U	0 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U		1.2 U
CHLOROFORM	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
CYCLOHEXANE				0.001 U		0.008		0.099		0.021		0.001 U		0.5		53
CYCLOHEXANE, METHYL-				0.001 U		0.002		0.19		0.049		0.001 U		1.2		210
DICHLOROBROMOMETHANE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
DICHLORODIFLUOROMETHANE				0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U		1.2 U
DIETHYL ETHER																
ETHYL METHACRYLATE																
ETHYLBENZENE	0 U	0 U		0.001 U		0.001 U		0.62		0.11		0.001 U		1.9		1.7

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft
HEXACHLOROBUTADIENE																
HEXACHLOROETHANE																
ISOPROPYLBENZENE				0.001 U		0.001 U		0.77		0.037		0.001 U		0.12		0.58 U
M+P-XYLENE				0.001 U		0.018		3.1		0.56		0.001 U		9.7		13
METHACRYLONITRILE																
METHYL ACETATE				0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.71		1.2 U
METHYL ACRYLATE																
METHYL BROMIDE	0 U	0 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U		1.2 U
METHYL CHLORIDE	0 U	0 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U		1.2 U
METHYL ETHYL KETONE	0 U	0 U		0.005 U		0.005 U		0.22 U		0.005 U		0.005 U		0.24 U		2.3 U
METHYL IODIDE																
METHYL ISOBUTYL KETONE	0 U			0.004 U		0.003 U		0.17 U		0.003 U		0.004 U		0.18 U		1.8 U
METHYL METHACRYLATE																
METHYLENE BROMIDE																
METHYLENE CHLORIDE	0 U	0 U		0.002 U		0.002 U		0.11 U		0.007		0.002 U		0.12 U		1.2 U
METHYL-T-BUTYL ETHER				0.0006 U		0.0006 U		0.028 U		0.0006 U		0.0006 U		0.03 U		0.29 U
NAPHTHALENE																
N-BUTYLBENZENE																
N-PROPYLBENZENE																
O-XYLENE				0.001 U		0.003		2		0.26		0.001 U		3.4		2.3
P-CHLOROTOLUENE																
PENTACHLOROETHANE																
P-ISOPROPYLTOLUENE																
PROPANENITRILE																
SEC-BUTYLBENZENE																
STYRENE	0 U			0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
t-Butyl Alcohol				0.024 U		0.023 U		4.6		0.024		0.024 U		1.2 U		12 U
TERT-BUTYLBENZENE																
TETRACHLOROETHYLENE	0 U	0.0052 J		0.001 U		0.001 U		0.056 U		0.007		0.001 U		0.06 U		0.58 U
TETRAHYDROFURAN																
TOLUENE	0 U	0.014		0.001		0.001 U		0.57		0.16		0.001 U		0.96		130
TRANS-1,4-DICHLORO-2-BUTENE																
TRICHLOROETHYLENE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.02		0.001 U		0.06 U		0.58 U
TRICHLOROFLUOROMETHANE	0 U	0 U		0.002 U		0.002 U		0.11 U		0.002 U		0.002 U		0.12 U		1.2 U
VINYL CHLORIDE	0 U	0 U		0.001 U		0.001 U		0.056 U		0.001 U		0.001 U		0.06 U		0.58 U
XYLENES,TOTAL	0 U	0 U														
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.1		2.1	
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE			0.11 U		0.12 U		0.37 U		0.12 U		0.11 U		0.12 U		0.11 U	
2,3,4,6-Tetrachlorophenol			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
2,4,5-TRICHLOROPHENOL			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
2,4,6-TRICHLOROPHENOL			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
2,4-DICHLOROPHENOL			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
2,4-DIMETHYLPHENOL			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
2,4-DINITROPHENOL			0.37 U		0.4 U		1.2 U		0.39 U		0.37 U		0.41 U		0.37 U	
2,4-DINITROTOLUENE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
2,6-DINITROTOLUENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
2-CHLORONAPHTHALENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
2-CHLOROPHENOL			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft
2-METHYL-4,6-DINITROPHENOL			0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U		0.19 U	
2-METHYLNAPHTHALENE			0.037 U		0.04 U		2.1		0.072		0.037 U		0.067		0.037 U	
2-NITROANILINE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
2-NITROPHENOL			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
3,3-DICHLOROBENZIDINE			0.11 U		0.12 U		0.37 U		0.12 U		0.11 U		0.12 U		0.11 U	
3-NITROANILINE			0.074 U		0.26		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
4-BROMOPHENYL PHENYL ETHER			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
4-CHLORO-3-METHYLPHENOL			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
4-CHLOROANILINE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
4-CHLOROPHENYL PHENYL ETHER			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
4-NITROANILINE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
4-NITROPHENOL			0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U		0.19 U	
ACENAPHTHENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.12	
ACENAPHTHYLENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.15	
ACETOPHENONE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
ANTHRACENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
ATRAZINE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
BENZALDEHYDE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
BENZIDINE			1.3 U		1.4 U		4.3 U		1.4 U		1.3 U		1.5 U		1.3 U	
BENZO(A)ANTHRACENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
BENZO(A)PYRENE			0.037 U		0.04 U		0.12 U		0.08		0.037 U		0.11		0.037 U	
BENZO(B)FLUORANTHENE			0.044		0.04 U		0.12 U		0.08		0.037 U		0.09		0.037 U	
BENZO(GHI)PERYLENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
BENZO(K)FLUORANTHENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
BENZYL BUTYL PHTHALATE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
Biphenyl			0.037 U		0.074		500		2.2		0.037 U		1.5		1.8	
BIS(2-CHLOROETHOXY) METHANE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
BIS(2-CHLOROETHYL) ETHER			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
Bis(2-chloroisopropyl) ether			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
BIS(2-CHLOROISOPROPYL)ETHER			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
BIS(2-ETHYLHEXYL)PHTHALATE			0.074 U		3.4		5.8		2.1		0.074 U		2.3		4.4	
CAPROLACTAM			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
CARBAZOLE			0.037 U		0.04 U		0.12 U		0.044		0.037 U		0.041 U		0.037 U	
CHRYSENE			0.045		0.043		0.12 U		2.2		0.037 U		4.1		0.047	
CRESOL,O			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
CRESOL,P			0.074 U		0.081 U		0.54		0.078 U		0.074 U		0.083 U		0.074 U	
DIBENZO(A,H)ANTHRACENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
DIBENZOFURAN			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.044	
DIETHYL PHTHALATE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
DIMETHYL PHTHALATE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
DI-N-BUTYL PHTHALATE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.41	
DI-N-OCTYL PHTHALATE			0.074 U		0.16		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
FLUORANTHENE			0.095		0.04 U		0.12 U		0.28		0.037 U		0.45		0.037 U	
FLUORENE			0.037 U		0.04 U		0.52		0.045		0.037 U		0.11		0.085	
HEXACHLOROBENZENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
HEXACHLOROBUTADIENE			0.074 U		0.081 U		0.25 U		0.078 U		0.074 U		0.083 U		0.074 U	
HEXACHLOROCYCLOPENTADIENE			0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U		0.19 U	
HEXACHLOROETHANE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
INDENO(1,2,3-CD)PYRENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
ISOPHORONE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
NAPHTHALENE			0.037 U		0.04 U		2.3		0.1		0.037 U		0.091		0.2	
NITROBENZENE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR14 SBR14-110692-0.5-1 11/6/1992 0.5-1 ft	SBR15 SBR15-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SRI-SS-27 SRI-SS-27-0-24-071111 7/11/2011 0-2 ft	SRI-SS-27 SRI-SS-27-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-28 SRI-SS-28-0-24-071111 7/11/2011 0-2 ft	SRI-SS-28 SRI-SS-28-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-30 SRI-SS-30-0-24-071211 7/12/2011 0-2 ft	SRI-SS-30 SRI-SS-30-6-12-071211 7/12/2011 0.5-1 ft	SRI-SS-31 SRI-SS-31-0-24-071111 7/11/2011 0-2 ft	SRI-SS-31 SRI-SS-31-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-32 SRI-SS-32-0-24-071211 7/12/2011 0-2 ft	SRI-SS-32 SRI-SS-32-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-33 SRI-SS-33-0-24-071211 7/12/2011 0-2 ft	SRI-SS-33 SRI-SS-33-18-24-071211 7/12/2011 1.5-2 ft	SRI-SS-35 SRI-SS-35-0-24-071211 7/12/2011 0-2 ft	SRI-SS-35 SRI-SS-35-18-24-071211 7/12/2011 1.5-2 ft
N-NITROSODIPHENYLAMINE			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
PENTACHLOROPHENOL			0.18 U		0.2 U		0.62 U		0.2 U		0.18 U		0.21 U		0.19 U	
PHENANTHRENE			0.056		0.04 U		0.37		0.31		0.037 U		0.28		0.097	
PHENOL			0.037 U		0.04 U		0.12 U		0.039 U		0.037 U		0.041 U		0.037 U	
PYRENE			0.078		0.04 U		0.12 U		0.12		0.037 U		0.11		0.037 U	
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM			5790		8580		7530		4410		1690		6550		3600	
ANTIMONY			0.718 U		0.786 U		0.812 U		1.41		0.706 U		1.01		0.713 U	
ARSENIC			3.36		5.61		7.82		4.98		2.25		5.4		1.59	
BARIUM			15.6		23.3		25		24.1		6.89		25.5		10.7	
BERYLLIUM			0.21		0.494		0.556		0.183		0.0717		0.246		0.118	
CADMIUM			0.963		0.579		0.791		0.769		0.395		0.783		0.502	
CALCIUM			7450		7060		1490		22300		219		22700		11800	
CHROMIUM			11.7		22		36.1		31.2		4.99		38		13.3	
COBALT			2.33		4.4		0.987		2.09		0.254		3		1.44	
COPPER			66.5		35.3		122		80.4		60.4		76.9		58	
IRON			13100		15000		17300		10700		3160		15000		6890	
LEAD			23.2		23.4		30.3		30.1		14.5		34.1		31.5	
MAGNESIUM			1500		2920		300		1530		133		1850		1330	
MANGANESE			67.9		103		25.7		67.1		11.8		79.3		41.3	
MERCURY			0.0074 U		0.0733		0.0396		1.2		0.0072 U		0.902		0.327	
NICKEL			4.6		9.66		3.45		11.5		1.15		18.4		10.1	
POTASSIUM			384		560		775		467		205		605		209	
SELENIUM			0.74 U		0.81 U		0.836 U		0.781 U		0.728 U		0.832 U		0.735 U	
SILVER			0.0903 U		0.0989 U		0.102 U		0.135		0.0888 U		0.102 U		0.0897 U	
SODIUM			103		408		3360		176		13.1		230		149	
THALLIUM			1.11		1.12		1.29		0.793		0.385 U		1.32		0.461	
VANADIUM			23.4		49		51.8		40.2		8.65		32.8		11.6	
ZINC			400		97.8		222		259		200		216		150	
% Solid **(%)**																
Moisture **(%)**			9.9		17.7		20.3		14.6		9.3		19.9		11	
PH **(pH units)**	5.6	6.9	8.88		7.11		9.16		9.91		7.14		10.4		10.4	
TOC/Solids/Sludges/Combustion									14800							

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft
Volatile Organics (mg/Kg)					
1,1,1,2-TETRACHLOROETHANE					
1,1,1-TRICHLOROETHANE		0.001 U	0.001 U	0.001 U	0.001 U
1,1,2,2-TETRACHLOROETHANE		0.001 U	0.001 U	0.001 U	0.001 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.003 U	0.002 U	0.002 U	0.002 U
1,1,2-TRICHLOROETHANE		0.001 U	0.001 U	0.001 U	0.001 U
1,1-DICHLOROETHANE		0.001 U	0.001 U	0.001 U	0.001 U
1,1-DICHLOROETHYLENE		0.001 U	0.001 U	0.001 U	0.001 U
1,1-DICHLOROPROPYLENE					
1,2,3-TRICHLOROBENZENE		0.001 U	0.001 U	0.001 U	0.001 U
1,2,3-TRICHLOROPROPANE					
1,2,4-TRICHLOROBENZENE		0.003	0.001 U	0.001 U	0.001 U
1,2,4-TRIMETHYLBENZENE					
1,2-CIS-DICHLOROETHYLENE		0.001 U	0.001 U	0.001 U	0.001 U
1,2-DIBROMO-3-CHLOROPROPANE		0.003 U	0.002 U	0.002 U	0.002 U
1,2-DIBROMOETHANE		0.001 U	0.001 U	0.001 U	0.001 U
1,2-DICHLOROBENZENE		0.001 U	0.001 U	0.001 U	0.001 U
1,2-DICHLOROETHANE		0.001 U	0.001 U	0.001 U	0.001 U
1,2-DICHLOROETHYLENE					
1,2-DICHLOROPROPANE		0.001 U	0.001 U	0.001 U	0.001 U
1,2-TRANS-DICHLOROETHYLENE		0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-TRIMETHYLBENZENE					
1,3-CIS-DICHLOROPROPYLENE		0.001 U	0.001 U	0.001 U	0.001 U
1,3-DICHLOROBENZENE		0.001 U	0.001 U	0.001 U	0.001 U
1,3-DICHLOROPROPANE					
1,3-TRANS-DICHLOROPROPYLENE		0.001 U	0.001 U	0.001 U	0.001 U
1,4-DICHLOROBENZENE		0.001 U	0.001 U	0.001 U	0.001 U
1,4-DIOXANE		0.092 U	0.074 U	0.086 U	0.08 U
1-CHLOROBUTANE					
2,2-DICHLOROPROPANE					
2-CHLOROETHYL VINYL ETHER					
2-CHLOROTOLUENE					
2-HEXANONE		0.004 U	0.003 U	0.004 U	0.003 U
3-CHLOROPROPENE					
ACETONE		0.019	0.016	0.015	0.027
ACROLEIN		0.026 U	0.021 U	0.025 U	0.023 U
ACRYLONITRILE		0.005 U	0.004 U	0.005 U	0.005 U
BENZENE		0.0007 U	0.0005 U	0.0006 U	0.0006 U
BROMOBENZENE					
BROMOCHLOROMETHANE		0.001 U	0.001 U	0.001 U	0.001 U
BROMOFORM		0.001 U	0.001 U	0.001 U	0.001 U
CARBON DISULFIDE		0.001 U	0.001 U	0.001 U	0.001 U
CARBON TETRACHLORIDE		0.001 U	0.001 U	0.001 U	0.001 U
CHLOROBENZENE		0.001 U	0.001 U	0.001 U	0.001 U
CHLORODIBROMOMETHANE		0.001 U	0.001 U	0.001 U	0.001 U
CHLOROETHANE		0.003 U	0.002 U	0.002 U	0.002 U
CHLOROFORM		0.001 U	0.001 U	0.001 U	0.001 U
CYCLOHEXANE		0.001 U	0.001 U	0.001 U	0.001 U
CYCLOHEXANE, METHYL-		0.001 U	0.001 U	0.001 U	0.001 U
DICHLOROBROMOMETHANE		0.001 U	0.001 U	0.001 U	0.001 U
DICHLORODIFLUOROMETHANE		0.003 U	0.002 U	0.002 U	0.002 U
DIETHYL ETHER					
ETHYL METHACRYLATE					
ETHYLBENZENE		0.001 U	0.001 U	0.001 U	0.009

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft
HEXACHLOROBUTADIENE					
HEXACHLOROETHANE					
ISOPROPYLBENZENE		0.001 U	0.001 U	0.001 U	0.001 U
M+P-XYLENE		0.001 U	0.001 U	0.001 U	0.026
METHACRYLONITRILE					
METHYL ACETATE		0.003 U	0.002 U	0.002 U	0.002 U
METHYL ACRYLATE					
METHYL BROMIDE		0.003 U	0.002 U	0.002 U	0.002 U
METHYL CHLORIDE		0.003 U	0.002 U	0.002 U	0.002 U
METHYL ETHYL KETONE		0.005 U	0.004 U	0.005 U	0.005 U
METHYL IODIDE					
METHYL ISOBUTYL KETONE		0.004 U	0.003 U	0.004 U	0.003 U
METHYL METHACRYLATE					
METHYLENE BROMIDE					
METHYLENE CHLORIDE		0.003 U	0.002 U	0.002 U	0.002 U
METHYL-T-BUTYL ETHER		0.0007 U	0.0005 U	0.0006 U	0.0006 U
NAPHTHALENE					
N-BUTYLBENZENE					
N-PROPYLBENZENE					
O-XYLENE		0.001 U	0.001 U	0.001 U	0.003
P-CHLOROTOLUENE					
PENTACHLOROETHANE					
P-ISOPROPYLTOLUENE					
PROPANENITRILE					
SEC-BUTYLBENZENE					
STYRENE		0.001 U	0.001 U	0.001 U	0.001 U
t-Butyl Alcohol		0.026 U	0.021 U	0.025 U	0.023 U
TERT-BUTYLBENZENE					
TETRACHLOROETHYLENE		0.001 U	0.001 U	0.001 U	0.001 U
TETRAHYDROFURAN					
TOLUENE		0.001 U	0.001 U	0.001 U	0.001 U
TRANS-1,4-DICHLORO-2-BUTENE					
TRICHLOROETHYLENE		0.001 U	0.001 U	0.001 U	0.001 U
TRICHLOROFLUOROMETHANE		0.003 U	0.002 U	0.002 U	0.002 U
VINYL CHLORIDE		0.001 U	0.001 U	0.001 U	0.001 U
XYLENES,TOTAL					
Semivolatile Organics (mg/Kg)					
1,2,4,5-TETRACHLOROBENZENE	0.075 U		0.091 U	0.092 U	0.093 U
1,2,4-TRICHLOROBENZENE					
1,2-DICHLOROBENZENE					
1,2-DIPHENYLHYDRAZINE					
1,3-DICHLOROBENZENE					
1,4-DICHLOROBENZENE					
1,4-DIOXANE	0.11 U		0.55 U	0.55 U	0.56 U
2,3,4,6-Tetrachlorophenol	0.075 U		0.37 U	0.37 U	0.37 U
2,4,5-TRICHLOROPHENOL	0.075 U		0.091 U	0.092 U	0.093 U
2,4,6-TRICHLOROPHENOL	0.037 U		0.091 U	0.092 U	0.093 U
2,4-DICHLOROPHENOL	0.037 U		0.091 U	0.092 U	0.093 U
2,4-DIMETHYLPHENOL	0.075 U		0.091 U	0.092 U	0.093 U
2,4-DINITROPHENOL	0.37 U		1.6 U	1.7 U	1.7 U
2,4-DINITROTOLUENE	0.075 U		0.37 U	0.37 U	0.37 U
2,6-DINITROTOLUENE	0.037 U		0.091 U	0.092 U	0.093 U
2-CHLORONAPHTHALENE	0.037 U		0.038 U	0.039 U	0.039 U
2-CHLOROPHENOL	0.037 U		0.091 U	0.092 U	0.093 U

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft
2-METHYL-4,6-DINITROPHENOL	0.19 U		0.91 U	0.92 U	0.93 U
2-METHYLNAPHTHALENE	0.037 U		0.018 U	0.018 U	0.019 U
2-NITROANILINE	0.037 U		0.091 U	0.092 U	0.093 U
2-NITROPHENOL	0.037 U		0.091 U	0.092 U	0.093 U
3,3-DICHLOROBENZIDINE	0.11 U		0.55 U	0.55 U	0.56 U
3-NITROANILINE	0.075 U		0.37 U	0.37 U	0.37 U
4-BROMOPHENYL PHENYL ETHER	0.037 U		0.091 U	0.092 U	0.093 U
4-CHLORO-3-METHYLPHENOL	0.075 U		0.091 U	0.092 U	0.093 U
4-CHLOROANILINE	0.075 U		0.091 U	0.092 U	0.093 U
4-CHLOROPHENYL PHENYL ETHER	0.037 U		0.091 U	0.092 U	0.093 U
4-NITROANILINE	0.075 U		0.37 U	0.37 U	0.37 U
4-NITROPHENOL	0.19 U		0.91 U	0.92 U	0.93 U
ACENAPHTHENE	0.037 U		0.018 U	0.018 U	0.019 U
ACENAPHTHYLENE	0.037 U		0.018 U	0.018 U	0.019 U
ACETOPHENONE	0.075 U		0.091 U	0.092 U	0.093 U
ANTHRACENE	0.037 U		0.018 U	0.043 J	0.019 U
ATRAZINE	0.037 U		0.18 U	0.18 U	0.19 U
BENZALDEHYDE	0.075 U		0.37 U	0.37 U	0.37 U
BENZIDINE	1.3 U		3.8 U	3.9 U	3.9 U
BENZO(A)ANTHRACENE	0.037 U		0.043	0.29 J	0.019 U
BENZO(A)PYRENE	0.037 U		0.048	0.25 J	0.019 U
BENZO(B)FLUORANTHENE	0.037 U		0.12	0.34 J	0.019 U
BENZO(GHI)PERYLENE	0.037 U		0.047	0.17 J	0.019 U
BENZO(K)FLUORANTHENE	0.037 U		0.07	0.19 J	0.019 U
BENZYL BUTYL PHTHALATE	0.075 U		0.37 U	0.37 U	0.37 U
Biphenyl	0.037 U		0.091 U	0.092 U	0.093 U
BIS(2-CHLOROETHOXY) METHANE	0.037 U		0.091 U	0.092 U	0.093 U
BIS(2-CHLOROETHYL) ETHER	0.037 U		0.091 U	0.092 U	0.093 U
Bis(2-chloroisopropyl) ether	0.037 U		0.091 U	0.092 U	0.093 U
BIS(2-CHLOROISOPROPYL)ETHER	0.037 U		0.091 U	0.092 U	0.093 U
BIS(2-ETHYLHEXYL)PHTHALATE	0.075 U		0.37 U	0.37 U	0.37 U
CAPROLACTAM	0.037 U		0.18 U	0.18 U	0.19 U
CARBAZOLE	0.037 U		0.091 U	0.092 U	0.093 U
CHRYSENE	0.037 U		0.1	0.33 J	0.047
CRESOL,O	0.075 U		0.091 U	0.092 U	0.093 U
CRESOL,P	0.075 U		0.091 U	0.092 U	0.093 U
DIBENZO(A,H)ANTHRACENE	0.037 U		0.018 U	0.044 J	0.019 U
DIBENZOFURAN	0.037 U		0.091 U	0.092 U	0.093 U
DIETHYL PHTHALATE	0.075 U		0.37 U	0.37 U	0.37 U
DIMETHYL PHTHALATE	0.075 U		0.37 U	0.37 U	0.37 U
DI-N-BUTYL PHTHALATE	0.075 U		0.37 U	0.37 U	0.37 U
DI-N-OCTYL PHTHALATE	0.075 U		0.37 U	0.37 U	0.37 U
FLUORANTHENE	0.037 U		0.13	0.58 J	0.019 U
FLUORENE	0.037 U		0.018 U	0.018 U	0.019 U
HEXACHLOROBENZENE	0.037 U		0.018 U	0.018 U	0.019 U
HEXACHLOROBUTADIENE	0.075 U		0.091 U	0.092 U	0.093 U
HEXACHLOROCYCLOPENTADIENE	0.19 U		0.91 U	0.92 U	0.93 U
HEXACHLOROETHANE	0.037 U		0.18 U	0.18 U	0.19 U
INDENO(1,2,3-CD)PYRENE	0.037 U		0.048	0.15 J	0.019 U
ISOPHORONE	0.037 U		0.091 U	0.092 U	0.093 U
NAPHTHALENE	0.037 U		0.018 U	0.018 U	0.019 U
NITROBENZENE	0.037 U		0.091 U	0.092 U	0.093 U
N-NITROSODIMETHYLAMINE					
N-NITROSODI-N-PROPYLAMINE	0.037 U		0.091 U	0.092 U	0.093 U

Table A-2
Summary of Analytical Results in Area 1 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-36 SRI-SS-36-0-24-071211 7/12/2011 0-2 ft	SRI-SS-36 SRI-SS-36-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-40 SRI-SS-40-A-092512 9/25/2012 0-0.5 ft	SRI-SS-41 SRI-SS-41-A-092512 9/25/2012 0-0.5 ft	SRI-SS-44 SRI-SS-44-A-092512 9/25/2012 0-0.5 ft
N-NITROSODIPHENYLAMINE	0.037 U		0.091 U	0.092 U	0.093 U
PENTACHLOROPHENOL	0.19 U		0.18 U	0.18 U	0.19 U
PHENANTHRENE	0.037 U		0.03	0.28 J	0.019 U
PHENOL	0.037 U		0.091 U	0.092 U	0.093 U
PYRENE	0.037 U		0.11	0.52 J	0.021
PCBs (mg/Kg)					
PCB-1016 (AROCLOR 1016)			0.0039 U	0.004 U	0.004 U
PCB-1221 (AROCLOR 1221)			0.005 U	0.0051 U	0.0052 U
PCB-1232 (AROCLOR 1232)			0.0087 U	0.0089 U	0.009 U
PCB-1242 (AROCLOR 1242)			0.0036 U	0.0037 U	0.0037 U
PCB-1248 (AROCLOR 1248)			0.0036 U	0.0037 U	0.0037 U
PCB-1254 (AROCLOR 1254)			0.0036 U	0.011	0.0037 U
PCB-1260 (AROCLOR 1260)			0.016	0.0054 U	0.044 J
Inorganics (mg/Kg)					
ALUMINUM	2000				
ANTIMONY	0.726 U				
ARSENIC	1.88				
BARIUM	6.98				
BERYLLIUM	0.0869				
CADMIUM	0.177				
CALCIUM	2550				
CHROMIUM	7.88				
COBALT	0.275				
COPPER	3.98				
IRON	4700				
LEAD	7.19				
MAGNESIUM	158				
MANGANESE	11.5				
MERCURY	0.0078 U				
NICKEL	1.05				
POTASSIUM	187				
SELENIUM	0.748 U				
SILVER	0.0913 U				
SODIUM	16.7				
THALLIUM	0.396 U				
VANADIUM	11.2				
ZINC	28.7				
% Solid **(%)**					
Moisture **(%)**	10.9		8.8	9.7	10.7
PH **(pH units)**	9.26				
TOC/Solids/Sludges/Combustion	925				

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Prepared by / Date: KJC 05/01/14
Checked by / Date: MJM 8/15/14

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-10.5 9/25/2003 9.5-11.5 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB1 RDSB1-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB1 RDSB1-092503-6.75 9/25/2003 6-8 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	RDSB2 RDSB2-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB2 RDSB2-092403-3.0 9/24/2003 2-4 ft	RDSB2 RDSB2-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB2 RDSB2-092403-6.5 9/24/2003 5.5-7.5 ft
Volatile Organics (mg/Kg)															
1,1,1,2-TETRACHLOROETHANE	0 / 12	0.12 : 0.16		0.07		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,1,1-TRICHLOROETHANE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,1,2,2-TETRACHLOROETHANE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0 / 19	0.002 : 0.003		0.00											
1,1,2-TRICHLOROETHANE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,1-DICHLOROETHANE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,1-DICHLOROETHYLENE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,2,3-TRICHLOROBENZENE	1 / 19	0.001 : 0.002	0.001 - 0.001	0.00											
1,2,4-TRICHLOROBENZENE	2 / 34	0.001 : 0.06	0.002 - 0.002	0.00											
1,2-CIS-DICHLOROETHYLENE	0 / 46	0.001 : 0.16		0.02		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,2-DIBROMO-3-CHLOROPROPANE	0 / 34	0.002 : 0.12		0.01											
1,2-DIBROMOETHANE	0 / 34	0.001 : 0.06		0.00											
1,2-DICHLOROBENZENE	1 / 70	0 : 0.16	0.005 - 0.005	0.02		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,2-DICHLOROETHANE	0 / 69	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,2-DICHLOROETHYLENE	0 / 14	0 : 0			0 U										
1,2-DICHLOROPROPANE	0 / 69	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,2-TRANS-DICHLOROETHYLENE	0 / 67	0 : 0.16		0.02		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,3-CIS-DICHLOROPROPYLENE	0 / 69	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,3-DICHLOROBENZENE	1 / 70	0 : 0.16	0.002 - 0.002	0.02		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,3-TRANS-DICHLOROPROPYLENE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,4-DICHLOROBENZENE	1 / 70	0 : 0.16	0.005 - 0.005	0.02		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
1,4-DIOXANE	0 / 19	0.067 : 0.11		0.04											
2-CHLOROETHYL VINYL ETHER	0 / 15	0 : 0													
2-HEXANONE	0 / 32	0 : 0.005		0.002	0 U										
ACETONE	44 / 69	0 : 1.1	0.008 - 45	1.65	0 U	0.93 U	1.1 U	12	1.3	0.99 U	0.86 U	1 U	0.89 U	1.1	0.94 U
ACROLEIN	0 / 48	0 : 1.2		0.06											
ACRYLONITRILE	0 / 60	0 : 0.66		0.08		0.53 U	0.6 U	0.66 U	0.61 U	0.57 U	0.49 U	0.57 U	0.51 U	0.53 U	0.54 U
BENZENE	5 / 67	0 : 0.16	0.001 - 0.03	0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
BROMOCHLOROMETHANE	0 / 31	0.001 : 0.16		0.03		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
BROMOFORM	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
CARBON DISULFIDE	3 / 48	0 : 0.06	0.001 - 0.004	0.00	0 U										
CARBON TETRACHLORIDE	1 / 72	0 : 0.16	0.001 - 0.001	0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
CHLOROBENZENE	1 / 72	0 : 0.16	0.037 - 0.037	0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
CHLORODIBROMOMETHANE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
CHLOROETHANE	0 / 72	0 : 0.33		0.04	0 U	0.27 U	0.3 U	0.33 U	0.31 U	0.28 U	0.25 U	0.29 U	0.25 U	0.26 U	0.27 U
CHLOROFORM	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
CYCLOHEXANE	0 / 19	0.001 : 0.002		0.00											
CYCLOHEXANE, METHYL-	0 / 19	0.001 : 0.002		0.00											
DICHLOROBROMOMETHANE	0 / 69	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
DICHLORODIFLUOROMETHANE	0 / 34	0.002 : 0.12		0.01											
ETHYLBENZENE	5 / 72	0 : 0.16	0.012 - 28	1.27	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	3.2	18	28	0.13 U
ISOPROPYLBENZENE	0 / 19	0.001 : 0.002		0.00											
M+P-XYLENE	2 / 19	0.001 : 0.002	0.002 - 0.008	0.00											
METHYL ACETATE	3 / 34	0.002 : 0.003	0.19 - 0.32	0.02											
METHYL BROMIDE	0 / 72	0 : 0.33		0.04	0 U	0.27 U	0.3 U	0.33 U	0.31 U	0.28 U	0.25 U	0.29 U	0.25 U	0.26 U	0.27 U
METHYL CHLORIDE	0 / 72	0 : 0.33		0.04	0 U	0.27 U	0.3 U	0.33 U	0.31 U	0.28 U	0.25 U	0.29 U	0.25 U	0.26 U	0.27 U
METHYL ETHYL KETONE	1 / 48	0 : 0.24	0.035 - 0.035	0.01	0 U										
METHYL ISOBUTYL KETONE	0 / 44	0 : 0.18		0.01	0 U										
METHYLENE CHLORIDE	3 / 72	0 : 0.33	0.004 - 0.009	0.04	0 U	0.27 U	0.3 U	0.33 U	0.31 U	0.28 U	0.25 U	0.29 U	0.25 U	0.26 U	0.27 U
METHYL-T-BUTYL ETHER	0 / 34	0.0005 : 0.03		0.00											
O-XYLENE	4 / 31	0.001 : 0.16	0.004 - 16	0.90		0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	1.7	9.6	16	0.13 U

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-10.5 9/25/2003 9.5-11.5 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB1 RDSB1-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB1 RDSB1-092503-6.75 9/25/2003 6-8 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	RDSB2 RDSB2-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB2 RDSB2-092403-3.0 9/24/2003 2-4 ft	RDSB2 RDSB2-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB2 RDSB2-092403-6.5 9/24/2003 5.5-7.5 ft
STYRENE	0 / 45	0 : 0.06		0.00	0 U										
t-Butyl Alcohol	1 / 34	0.019 : 1.2	0.031 - 0.031	0.06											
TETRACHLOROETHYLENE	5 / 72	0 : 0.16	0.004 - 0.019	0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
TOLUENE	21 / 72	0 : 0.16	0.002 - 0.3	0.03	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13	0.18	0.13 U
TRICHLOROETHYLENE	0 / 69	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
TRICHLOROFLUOROMETHANE	0 / 50	0 : 0.12		0.01											
VINYL CHLORIDE	0 / 72	0 : 0.16		0.02	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	0.14 U	0.13 U	0.13 U	0.13 U
XYLENES,TOTAL	10 / 53	0 : 0.16	0.001 - 94	6.76	0 U	0.13 U	0.15 U	0.16 U	0.15 U	0.14 U	0.12 U	12	58	94	0.13 U
Semivolatile Organics (mg/Kg)															
1,2,4,5-TETRACHLOROBENZENE	0 / 19	0.019 : 0.094		0.03											
1,2,4-TRICHLOROBENZENE	0 / 5	0 : 0			0 U										
1,2-DICHLOROBENZENE	1 / 5	0 : 0	0.08 - 0.08	0.08	0 U										
1,2-DIPHENYLHYDRAZINE	0 / 16	0 : 0.35		0.03	0 U										
1,3-DICHLOROBENZENE	0 / 5	0 : 0			0 U										
1,4-DICHLOROBENZENE	0 / 5	0 : 0			0 U										
1,4-DIOXANE	0 / 19	0.11 : 0.56		0.09											
2,3,4,6-Tetrachlorophenol	0 / 19	0.073 : 0.38		0.06											
2,4,5-TRICHLOROPHENOL	0 / 32	0.019 : 0.71		0.04											
2,4,6-TRICHLOROPHENOL	0 / 34	0 : 0.35		0.02	0 U										
2,4-DICHLOROPHENOL	0 / 34	0 : 0.35		0.02	0 U										
2,4-DIMETHYLPHENOL	0 / 34	0 : 0.71		0.04	0 U										
2,4-DINITROPHENOL	1 / 34	0 : 7.1	0.42 - 0.42	0.44	0 U										
2,4-DINITROTOLUENE	0 / 37	0 : 0.71		0.06	0 U										
2,6-DINITROTOLUENE	0 / 37	0 : 0.35		0.02	0 U										
2-CHLORONAPHTHALENE	0 / 24	0 : 0.04		0.01	0 U										
2-CHLOROPHENOL	0 / 34	0 : 0.35		0.02	0 U										
2-METHYL-4,6-DINITROPHENOL	0 / 32	0.17 : 1.8		0.16											
2-METHYLNAPHTHALENE	4 / 32	0.004 : 0.35	0.07 - 0.37	0.04											
2-NITROANILINE	0 / 35	0 : 0.35		0.02											
2-NITROPHENOL	0 / 21	0 : 0.094		0.02	0 U										
3,3-DICHLOROBENZIDINE	0 / 37	0 : 1.1		0.09	0 U										
3-NITROANILINE	0 / 22	0 : 0.38		0.06											
4-BROMOPHENYL PHENYL ETHER	0 / 24	0 : 0.094		0.02	0 U										
4-CHLORO-3-METHYLPHENOL	0 / 34	0 : 0.71		0.04	0 U										
4-CHLOROANILINE	0 / 19	0.019 : 0.094		0.03											
4-CHLOROPHENYL PHENYL ETHER	0 / 24	0 : 0.094		0.02	0 U										
4-NITROANILINE	0 / 22	0 : 0.38		0.06											
4-NITROPHENOL	0 / 21	0 : 0.94		0.15	0 U										
ACENAPHTHENE	3 / 37	0 : 0.35	0.041 - 0.089	0.02	0 U										
ACENAPHTHYLENE	1 / 37	0 : 0.35	0.045 - 0.045	0.02	0 U										
ACETOPHENONE	0 / 32	0.019 : 0.71		0.04											
ANTHRACENE	4 / 37	0 : 0.35	0.045 - 0.19	0.03	0 U										
ATRAZINE	0 / 19	0.037 : 0.19		0.03											
BENZALDEHYDE	0 / 32	0.07 : 0.71		0.06											
BENZIDINE	0 / 37	0 : 12		0.91	0 U										
BENZO(A)ANTHRACENE	7 / 37	0 : 0.35	0.009 - 1	0.09	0 U										
BENZO(A)PYRENE	7 / 37	0 : 0.35	0.011 - 1.4	0.12	0 U										
BENZO(B)FLUORANTHENE	8 / 37	0 : 0.35	0.018 - 2.4	0.18	0 U										
BENZO(GHI)PERYLENE	7 / 37	0 : 0.35	0.007 - 1.3	0.10	0 U										
BENZO(K)FLUORANTHENE	6 / 37	0 : 0.35	0.004 - 1.1	0.09	0 U										
BENZYL BUTYL PHTHALATE	0 / 37	0 : 0.71		0.06	0 U										
Biphenyl	4 / 32	0.019 : 0.35	0.057 - 8	0.36											

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-10.5 9/25/2003 9.5-11.5 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB1 RDSB1-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB1 RDSB1-092503-6.75 9/25/2003 6-8 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	RDSB2 RDSB2-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB2 RDSB2-092403-3.0 9/24/2003 2-4 ft	RDSB2 RDSB2-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB2 RDSB2-092403-6.5 9/24/2003 5.5-7.5 ft
BIS(2-CHLOROETHOXY) METHANE	0 / 24	0 : 0.094		0.02	0 U										
BIS(2-CHLOROETHYL) ETHER	0 / 37	0 : 0.35		0.02	0 U										
Bis(2-chloroisopropyl) ether	0 / 32	0.019 : 0.35		0.02											
BIS(2-CHLOROISOPROPYL)ETHER	0 / 24	0 : 0.094		0.02	0 U										
BIS(2-ETHYLHEXYL)PHTHALATE	10 / 37	0 : 0.71	0.094 - 14	0.65	0.41										
CAPROLACTAM	0 / 32	0.035 : 0.35		0.03											
CARBAZOLE	3 / 35	0 : 0.35	0.13 - 0.18	0.04											
CHRYSENE	11 / 37	0 : 0.35	0.005 - 1.9	0.20	0 U										
CRESOL,O	0 / 32	0.019 : 0.71		0.04											
CRESOL,P	0 / 32	0.019 : 0.71		0.04											
DIBENZO(A,H)ANTHRACENE	5 / 37	0 : 0.35	0.004 - 0.34	0.04	0 U										
DIBENZOFURAN	1 / 19	0.019 : 0.094	0.12 - 0.12	0.03											
DIETHYL PHTHALATE	0 / 37	0 : 0.71		0.06	0 U										
DIMETHYL PHTHALATE	0 / 36	0 : 0.71		0.06											
DI-N-BUTYL PHTHALATE	0 / 37	0 : 0.71		0.06	0 U										
DI-N-OCTYL PHTHALATE	1 / 37	0 : 0.71	0.056 - 0.056	0.06	0.056										
FLUORANTHENE	11 / 37	0 : 0.35	0.005 - 2.1	0.19	0 U										
FLUORENE	5 / 37	0 : 0.35	0.039 - 0.11	0.03	0 U										
HEXACHLOROBENZENE	0 / 37	0 : 0.35		0.02	0 U										
HEXACHLOROBUTADIENE	0 / 37	0 : 0.71		0.04	0 U										
HEXACHLOROCYCLOPENTADIENE	0 / 37	0 : 1.8		0.16	0 U										
HEXACHLOROETHANE	0 / 37	0 : 0.35		0.03	0 U										
INDENO(1,2,3-CD)PYRENE	6 / 37	0 : 0.35	0.007 - 1.2	0.09	0 U										
ISOPHORONE	1 / 37	0 : 0.35	0.091 - 0.091	0.03	0 U										
NAPHTHALENE	5 / 37	0 : 0.35	0.048 - 0.22	0.04	0 U										
NITROBENZENE	0 / 37	0 : 0.35		0.02	0 U										
N-NITROSODIMETHYLAMINE	0 / 16	0 : 0.71		0.07	0 U										
N-NITROSODI-N-PROPYLAMINE	0 / 37	0 : 0.35		0.02	0 U										
N-NITROSODIPHENYLAMINE	0 / 37	0 : 0.35		0.02	0 U										
PENTACHLOROPHENOL	0 / 34	0 : 1.8		0.11	0 U										
PHENANTHRENE	8 / 37	0 : 0.35	0.004 - 1.3	0.13	0 U										
PHENOL	0 / 34	0 : 0.35		0.02	0 U										
PYRENE	11 / 37	0 : 0.35	0.005 - 2.1	0.19	0 U										
PCBs (mg/Kg)															
PCB-1016 (AROCLOR 1016)	0 / 5	0.004 : 0.0045		0.00											
PCB-1221 (AROCLOR 1221)	0 / 5	0.0052 : 0.0057		0.00											
PCB-1232 (AROCLOR 1232)	0 / 5	0.009 : 0.01		0.00											
PCB-1242 (AROCLOR 1242)	0 / 5	0.0037 : 0.0041		0.00											
PCB-1248 (AROCLOR 1248)	2 / 5	0.0037 : 0.0041	0.0085 - 0.016	0.01											
PCB-1254 (AROCLOR 1254)	1 / 5	0.0037 : 0.0041	0.011 - 0.011	0.00											
PCB-1260 (AROCLOR 1260)	3 / 5	0.0055 : 0.0061	0.0094 - 0.025	0.01											
Inorganics (mg/Kg)															
ALUMINUM	23 / 23		1.8 - 20600	6708.05	1.8										
ANTIMONY	2 / 25	0 : 5.7	1.3 - 2	0.69	0.0066 U										
ARSENIC	20 / 24	0.0012 : 5.42	0.0072 - 13.5	3.32	0.0072										
BARIUM	22 / 24	0.022 : 0.024	4.4 - 50.9	19.55	0.022 U										
BERYLLIUM	19 / 25	0 : 0.0762	0.0989 - 0.734	0.30	0.00055 U										
CADMIUM	16 / 25	0 : 0.798	0.178 - 0.988	0.36	0.00055 U										
CALCIUM	19 / 23	0.55 : 132	1.8 - 73500	8528.28	0.55 U										
CHROMIUM	23 / 23		0.0081 - 59.2	18.00	0.038										
COBALT	22 / 24	0.0055 : 0.0061	0.402 - 6.63	2.02	0.0055 U										
COPPER	23 / 25	8.7 : 12.9	0.0058 - 540	68.64	0.023										

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-10.5 9/25/2003 9.5-11.5 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB1 RDSB1-092503-4.5 9/25/2003 3.5-5.5 ft	RDSB1 RDSB1-092503-6.75 9/25/2003 6-8 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	RDSB2 RDSB2-092403-10.5 9/24/2003 9.5-11.5 ft	RDSB2 RDSB2-092403-3.0 9/24/2003 2-4 ft	RDSB2 RDSB2-092403-4.5 9/24/2003 3.5-5.5 ft	RDSB2 RDSB2-092403-6.5 9/24/2003 5.5-7.5 ft
IRON	23 / 23		2.6 - 35900	12576.37	3.9										
LEAD	23 / 25	0.011 : 0.012	2.61 - 140	23.38	0.011 U										
MAGNESIUM	13 / 15	0.55 : 0.61	95.9 - 2030	526.30	0.55 U										
MANGANESE	24 / 24		0.019 - 275	52.85	0.019										
MERCURY	9 / 25	0 : 0.13	0.0001 - 1	0.12	0.0001 U										
NICKEL	22 / 25	0.0044 : 1.03	1.06 - 23.8	6.41	0.0044 U										
POTASSIUM	22 / 24	0.55 : 0.61	198 - 1080	442.98	0.55 U										
SELENIUM	0 / 25	0 : 5.59		0.55	0.011 U										
SILVER	4 / 25	0 : 0.258	0.139 - 0.285	0.10	0.0011 U										
SODIUM	17 / 24	0.55 : 44	10.1 - 683	123.38	0.55 U										
THALLIUM	7 / 25	0 : 8.27	0.555 - 2.39	0.94	0.0011 U										
VANADIUM	22 / 22		0.0079 - 73	26.68	0.033										
ZINC	23 / 23		0.017 - 711	156.81	0.044										
% Solid **(%)**	2 / 2		82 - 91	86.50	91										
CYANIDE	0 / 2	0.001 : 0.001		0.00	0.001 U										
Moisture **(%)**	56 / 56		4.6 - 31.6	14.75		11.7	16.8	21.3	18.7	13.3	6.6	15	16.7	15.8	20
PH **(pH units)**	31 / 31		4.63 - 12	6.70											
TOC/Solids/Sludges/Combustion	4 / 4		196 - 13500	4186.50								1750			
TOTAL ORGANIC CARBON	1 / 1		9800 - 9800	9800.00											

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB20 RDSB20-120103-5.0 12/1/2003 4-6 ft	RDSB20 RDSB20-120103-6.0 12/1/2003 5-7 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB3-8 SB3-8-110592-4.5-5 11/5/1992 4.5-5 ft	SB3-8 SB3-8-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-10 SB4-10-110592-3-4 11/5/1992 3-4 ft	SB4-10 SB4-10-110592-5-6 11/5/1992 5-6 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SB4-11 SB4-11-110592-3-4 11/5/1992 3-4 ft	SB4-11 SB4-11-110592-5-6 11/5/1992 5-6 ft	SB5-4 SB5-4-082494-4-5 8/24/1994 4-5 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBBG SBBG-110492-3-4 11/4/1992 3-4 ft	SBBG SBBG-110492-5-6 11/4/1992 5-6 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0.14 U	0.15 U														
1,1,1-TRICHLOROETHANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1,2,2-TETRACHLOROETHANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHYLENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2,3-TRICHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-CIS-DICHLOROETHYLENE	0.14 U	0.15 U														
1,2-DIBROMO-3-CHLOROPROPANE																
1,2-DIBROMOETHANE																
1,2-DICHLOROBENZENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	0 U
1,2-DICHLOROETHANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2-DICHLOROETHYLENE												0 U	0 U	0 U	0 U	0 U
1,2-DICHLOROPROPANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2-TRANS-DICHLOROETHYLENE	0.14 U	0.15 U	0 U	0 U	0 U		0 U	0 U		0 U	0 U		0 U		0 U	0 U
1,3-CIS-DICHLOROPROPYLENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,3-DICHLOROBENZENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	0 U
1,3-TRANS-DICHLOROPROPYLENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,4-DICHLOROBENZENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U		0 U	0 U	0 U	0 U
1,4-DIOXANE																
2-CHLOROETHYL VINYL ETHER			0 U	0 U	0 U		0 U	0 U		0 U	0 U		0 U		0 U	
2-HEXANONE						0 U			0 U			0 U	0 U	0 U	0 U	0 U
ACETONE	0.96 U	1.1 U	0 U	0 U	0.11	11	2.9 E	1 E	0.063	0.5 E	0.34 E	0 U	1.8 E	2.9	2.2 E	3.1
ACROLEIN			0 U	0 U	0 U		0 U			0 U	0 U		0 U		0 U	
ACRYLONITRILE	0.55 U	0.61 U	0 U	0 U	0 U		0 U			0 U	0 U		0 U		0 U	
BENZENE	0.14 U	0.15 U	0 U	0 U	0 U		0 U	0 U		0 U	0 U	0 U	0 U	0 U	0 U	0 U
BROMOCHLOROMETHANE	0.14 U	0.15 U														
BROMOFORM	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CARBON DISULFIDE						0 U			0 U			0 U		0 U		0 U
CARBON TETRACHLORIDE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROBENZENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0.037	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLORODIBROMOMETHANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROETHANE	0.27 U	0.31 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROFORM	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
DICHLORODIFLUOROMETHANE																
ETHYLBENZENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
ISOPROPYLBENZENE																
M+P-XYLENE																
METHYL ACETATE																
METHYL BROMIDE	0.27 U	0.31 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL CHLORIDE	0.27 U	0.31 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL ETHYL KETONE						0 U			0 U			0 U		0 U		0 U
METHYL ISOBUTYL KETONE						0 U			0 U			0 U	0 U	0 U	0 U	0 U
METHYLENE CHLORIDE	0.27 U	0.31 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL-T-BUTYL ETHER																
O-XYLENE	0.14 U	0.15 U														

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB20 RDSB20-120103-5.0 12/1/2003 4-6 ft	RDSB20 RDSB20-120103-6.0 12/1/2003 5-7 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB3-8 SB3-8-110592-4.5-5 11/5/1992 4.5-5 ft	SB3-8 SB3-8-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-10 SB4-10-110592-3-4 11/5/1992 3-4 ft	SB4-10 SB4-10-110592-5-6 11/5/1992 5-6 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SB4-11 SB4-11-110592-3-4 11/5/1992 3-4 ft	SB4-11 SB4-11-110592-5-6 11/5/1992 5-6 ft	SB5-4 SB5-4-082494-4-5 8/24/1994 4-5 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBBG SBBG-110492-3-4 11/4/1992 3-4 ft	SBBG SBBG-110492-5-6 11/4/1992 5-6 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
STYRENE						0 U			0 U			0 U		0 U		0 U
t-Butyl Alcohol																
TETRACHLOROETHYLENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0.004 J	0.014	0 U	0 U	0.019	0 U	0 U	0 U
TOLUENE	0.14 U	0.15 U	0.023	0.019	0.033	0.0061 J	0.025	0 U	0.013	0.072	0.01	0 U	0.059	0 U	0.002 J	0.074 J
TRICHLOROETHYLENE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
TRICHLOROFLUOROMETHANE			0 U	0 U	0 U		0 U	0 U		0 U	0 U		0 U		0 U	
VINYL CHLORIDE	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
XYLENES,TOTAL	0.14 U	0.15 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.0082	0 U	0 U	0.0064	0.27
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE						0 U			0 U			0 U			0 U	
1,2-DICHLOROBENZENE						0 U			0 U			0 U			0.08	
1,2-DIPHENYLHYDRAZINE						0 U			0 U			0 U			0 U	
1,3-DICHLOROBENZENE						0 U			0 U			0 U			0 U	
1,4-DICHLOROBENZENE						0 U			0 U			0 U			0 U	
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																
2,4,6-TRICHLOROPHENOL												0 U				
2,4-DICHLOROPHENOL												0 U				
2,4-DIMETHYLPHENOL												0 U				
2,4-DINITROPHENOL												0 U				
2,4-DINITROTOLUENE						0 U			0 U			0 U			0 U	
2,6-DINITROTOLUENE						0 U			0 U			0 U			0 U	
2-CHLORONAPHTHALENE						0 U			0 U			0 U			0 U	
2-CHLOROPHENOL												0 U				
2-METHYL-4,6-DINITROPHENOL																
2-METHYLNAPHTHALENE																
2-NITROANILINE						0 U			0 U						0 U	
2-NITROPHENOL												0 U				
3,3-DICHLOROBENZIDINE						0 U			0 U			0 U			0 U	
3-NITROANILINE						0 U			0 U						0 U	
4-BROMOPHENYL PHENYL ETHER						0 U			0 U			0 U			0 U	
4-CHLORO-3-METHYLPHENOL												0 U				
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER						0 U			0 U			0 U			0 U	
4-NITROANILINE						0 U			0 U						0 U	
4-NITROPHENOL												0 U				
ACENAPHTHENE						0 U			0 U			0 U			0.089 J	
ACENAPHTHYLENE						0 U			0 U			0 U			0 U	
ACETOPHENONE																
ANTHRACENE						0 U			0 U			0 U			0.045 J	
ATRAZINE																
BENZALDEHYDE																
BENZIDINE						0 U			0 U			0 U			0 U	
BENZO(A)ANTHRACENE						0 U			0 U			0 U			0.07 J	
BENZO(A)PYRENE						0 U			0 U			0 U			0 U	
BENZO(B)FLUORANTHENE						0 U			0 U			0 U			0 U	
BENZO(GHI)PERYLENE						0 U			0 U			0 U			0 U	
BENZO(K)FLUORANTHENE						0 U			0 U			0 U			0 U	
BENZYL BUTYL PHTHALATE						0 U			0 U			0 U			0 U	
Biphenyl																

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB20 RDSB20-120103-5.0 12/1/2003 4-6 ft	RDSB20 RDSB20-120103-6.0 12/1/2003 5-7 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB3-8 SB3-8-110592-4.5-5 11/5/1992 4.5-5 ft	SB3-8 SB3-8-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-10 SB4-10-110592-3-4 11/5/1992 3-4 ft	SB4-10 SB4-10-110592-5-6 11/5/1992 5-6 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SB4-11 SB4-11-110592-3-4 11/5/1992 3-4 ft	SB4-11 SB4-11-110592-5-6 11/5/1992 5-6 ft	SB5-4 SB5-4-082494-4-5 8/24/1994 4-5 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBBG SBBG-110492-3-4 11/4/1992 3-4 ft	SBBG SBBG-110492-5-6 11/4/1992 5-6 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
BIS(2-CHLOROETHOXY) METHANE						0 U			0 U			0 U			0 U	
BIS(2-CHLOROETHYL) ETHER						0 U			0 U			0 U			0 U	
Bis(2-chloroisopropyl) ether																
BIS(2-CHLOROISOPROPYL)ETHER						0 U			0 U			0 U			0 U	
BIS(2-ETHYLHEXYL)PHTHALATE						0 U			0 U			0.1			0 U	
CAPROLACTAM																
CARBAZOLE						0 U			0 U						0 U	
CHRYSENE						0 U			0 U			0 U			0.09 J	
CRESOL,O																
CRESOL,P																
DIBENZO(A,H)ANTHRACENE						0 U			0 U			0 U			0 U	
DIBENZOFURAN																
DIETHYL PHTHALATE						0 U			0 U			0 U			0 U	
DIMETHYL PHTHALATE						0 U			0 U			0 U			0 U	
DI-N-BUTYL PHTHALATE						0 U			0 U			0 U			0 U	
DI-N-OCTYL PHTHALATE						0 U			0 U			0 U			0 U	
FLUORANTHENE						0 U			0 U			0 U			0.25 J	
FLUORENE						0 U			0 U			0 U			0 U	
HEXACHLOROBENZENE						0 U			0 U			0 U			0 U	
HEXACHLOROBUTADIENE						0 U			0 U			0 U			0 U	
HEXACHLOROCYCLOPENTADIENE						0 U			0 U			0 U			0 U	
HEXACHLOROETHANE						0 U			0 U			0 U			0 U	
INDENO(1,2,3-CD)PYRENE						0 U			0 U			0 U			0 U	
ISOPHORONE						0 U			0 U			0 U			0.091 J	
NAPHTHALENE						0 U			0 U			0 U			0.22 J	
NITROBENZENE						0 U			0 U			0 U			0 U	
N-NITROSODIMETHYLAMINE						0 U			0 U			0 U			0 U	
N-NITROSODI-N-PROPYLAMINE						0 U			0 U			0 U			0 U	
N-NITROSODIPHENYLAMINE						0 U			0 U			0 U			0 U	
PENTACHLOROPHENOL												0 U				
PHENANTHRENE						0 U			0 U			0 U			0.38	
PHENOL												0 U				
PYRENE						0 U			0 U			0 U			0.21 J	
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM												3.4				
ANTIMONY												0.0073 U	0 U			
ARSENIC												0.0012 U	3.1			
BARIUM												0.024 U				
BERYLLIUM												0.00061 U	0 U			
CADMIUM												0.00061 U	0 U			
CALCIUM												1.8				
CHROMIUM												0.0081	9.3			
COBALT												0.0061 U				
COPPER												0.0058	16			

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	RDSB20 RDSB20-120103-5.0 12/1/2003 4-6 ft	RDSB20 RDSB20-120103-6.0 12/1/2003 5-7 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB3-8 SB3-8-110592-4.5-5 11/5/1992 4.5-5 ft	SB3-8 SB3-8-110592-7.5-8 11/5/1992 7.5-8 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-10 SB4-10-110592-3-4 11/5/1992 3-4 ft	SB4-10 SB4-10-110592-5-6 11/5/1992 5-6 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SB4-11 SB4-11-110592-3-4 11/5/1992 3-4 ft	SB4-11 SB4-11-110592-5-6 11/5/1992 5-6 ft	SB5-4 SB5-4-082494-4-5 8/24/1994 4-5 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBBG SBBG-110492-3-4 11/4/1992 3-4 ft	SBBG SBBG-110492-5-6 11/4/1992 5-6 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
IRON												2.6				
LEAD												0.012 U	20			
MAGNESIUM												0.61 U				
MANGANESE												0.03				
MERCURY												0.0001	0 U			
NICKEL												0.0049 U	6.5			
POTASSIUM												0.61 U				
SELENIUM												0.012 U	0 U			
SILVER												0.0012 U	0 U			
SODIUM												0.61 U				
THALLIUM												0.0012 U	0 U			
VANADIUM												0.0079				
ZINC												0.017	74			
% Solid **(%)**												82				
CYANIDE												0.001 U				
Moisture **(%)**	12.6	14.6														
PH **(pH units)**			12	5.1	5.4		6.4	7.3		6	6		5.4	4.9	4.7	10
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON												9800				

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR16 SBR16-110692-4-5 11/6/1992 4-5 ft	SBR16 SBR16-110692-7-8 11/6/1992 7-8 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR17 SBR17-110692-4-5 11/6/1992 4-5 ft	SBR17 SBR17-110692-7-8 11/6/1992 7-8 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR18 SBR18-110492-4.5-5 11/4/1992 4.5-5 ft	SBR18 SBR18-110492-7.5-8 11/4/1992 7.5-8 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR19 SBR19-110692-2-3 11/6/1992 2-3 ft	SBR19 SBR19-110692-5-6 11/6/1992 5-6 ft	SRI-10 SRI-10-4-7-7-09 7/7/2009 3-5 ft	SRI-10 SRI-10-8-7-7-09 7/7/2009 7-9 ft	SRI-6 SRI-6-4-8-5-09 8/5/2009 3-5 ft	SRI-6 SRI-6-8-8-5-09 8/5/2009 7-9 ft	SRI-7 SRI-7-4-7-6-09 7/6/2009 3-5 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,1,2,2-TETRACHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 UJ
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																
1,1,2-TRICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,1-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,1-DICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,2,3-TRICHLOROBENZENE																
1,2,4-TRICHLOROBENZENE												0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 UJ
1,2-CIS-DICHLOROETHYLENE												0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,2-DIBROMO-3-CHLOROPROPANE												0.002 U	0.002 UJ	0.002 U	0.002 U	0.11 UJ
1,2-DIBROMOETHANE												0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,2-DICHLOROBENZENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 UJ
1,2-DICHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 U	0.001 U	0.001 U	0.057 U
1,2-DICHLOROETHYLENE	0 U	0 U				0 U	0 U	0 U	0 U	0 U	0 U					
1,2-DICHLOROPROPANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 U	0.001 U	0.001 U	0.057 U
1,2-TRANS-DICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,3-CIS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 U	0.001 U	0.001 U	0.057 U
1,3-DICHLOROBENZENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 UJ
1,3-TRANS-DICHLOROPROPYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
1,4-DICHLOROBENZENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 UJ
1,4-DIOXANE																
2-CHLOROETHYL VINYL ETHER						0 U	0 U	0 U	0 U	0 U	0 U					
2-HEXANONE	0 U	0 U				0 U	0 U	0 U								
ACETONE	0.23	0.21	45	8.2	1.5	0.58 E	0 U	0.37 E	0.27 E	0 U	0 U	0.016	0.009 J	0.033	0.018	0.4 U
ACROLEIN						0 U	0 U	0 U	0 U	0 U	0 U	0.021 U	0.02 UJ	0.022 U	0.02 U	1.1 U
ACRYLONITRILE						0 U	0 U	0 U	0 U	0 U	0 U	0.004 U	0.004 UJ	0.004 U	0.004 U	0.23 U
BENZENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.0005 U	0.0005 U	0.0005 U	0.0005 U	0.03
BROMOCHLOROMETHANE																
BROMOFORM	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
CARBON DISULFIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U				0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
CARBON TETRACHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
CHLOROBENZENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
CHLORODIBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
CHLOROETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.002 U	0.002 UJ	0.002 U	0.002 U	0.23 U
CHLOROFORM	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
CYCLOHEXANE																
CYCLOHEXANE, METHYL-																
DICHLOROBROMOMETHANE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 U	0.001 U	0.001 U	0.057 U
DICHLORODIFLUOROMETHANE												0.002 U	0.002 UJ	0.002 U	0.002 U	0.11 U
ETHYLBENZENE	0 U	0 U	0 U	0.012	0 U	0 U	11	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
ISOPROPYLBENZENE																
M+P-XYLENE																
METHYL ACETATE												0.002 U	0.002 UJ	0.002 U	0.002 U	0.19
METHYL BROMIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.002 U	0.002 UJ	0.002 U	0.002 U	0.11 U
METHYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.002 U	0.002 UJ	0.002 U	0.002 U	0.11 U
METHYL ETHYL KETONE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U				0.004 U	0.004 UJ	0.004 U	0.004 U	0.23 U
METHYL ISOBUTYL KETONE	0 U	0 U				0 U	0 U	0 U				0.003 U	0.003 U	0.003 U	0.003 U	0.17 U
METHYLENE CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.002 U	0.002 UJ	0.002 U	0.002 U	0.11 U
METHYL-T-BUTYL ETHER												0.0005 U	0.0005 UJ	0.0005 U	0.0005 U	0.028 U
O-XYLENE																

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR16 SBR16-110692-4-5 11/6/1992 4-5 ft	SBR16 SBR16-110692-7-8 11/6/1992 7-8 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR17 SBR17-110692-4-5 11/6/1992 4-5 ft	SBR17 SBR17-110692-7-8 11/6/1992 7-8 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR18 SBR18-110492-4.5-5 11/4/1992 4.5-5 ft	SBR18 SBR18-110492-7.5-8 11/4/1992 7.5-8 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR19 SBR19-110692-2-3 11/6/1992 2-3 ft	SBR19 SBR19-110692-5-6 11/6/1992 5-6 ft	SRI-10 SRI-10-4-7-7-09 7/7/2009 3-5 ft	SRI-10 SRI-10-8-7-7-09 7/7/2009 7-9 ft	SRI-6 SRI-6-4-8-5-09 8/5/2009 3-5 ft	SRI-6 SRI-6-8-8-5-09 8/5/2009 7-9 ft	SRI-7 SRI-7-4-7-6-09 7/6/2009 3-5 ft
STYRENE	0 U	0 U				0 U	0 U	0 U				0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
t-Butyl Alcohol												0.021 U	0.02 UJ	0.022 U	0.02 U	1.1 U
TETRACHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0.012	0 U	0 U	0.0063	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
TOLUENE	0.0084	0 U	0.014	0.03	0 U	0.033	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
TRICHLOROETHYLENE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 U	0.001 U	0.001 U	0.057 U
TRICHLOROFLUOROMETHANE			0 U	0 U	0 U	0 U	0 U	0 U	0 U			0.002 U	0.002 UJ	0.002 UJ	0.002 U	0.11 U
VINYL CHLORIDE	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
XYLENES,TOTAL	0 U	0 U	0 U	0.093	0 U	0.023	58	0 U	0 U	0 U	0 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.057 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE																
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE																
2,3,4,6-Tetrachlorophenol																
2,4,5-TRICHLOROPHENOL																0.084 U
2,4,6-TRICHLOROPHENOL																0.042 U
2,4-DICHLOROPHENOL																0.042 U
2,4-DIMETHYLPHENOL																0.084 U
2,4-DINITROPHENOL																0.84 UJ
2,4-DINITROTOLUENE																0.084 U
2,6-DINITROTOLUENE																0.042 U
2-CHLORONAPHTHALENE																
2-CHLOROPHENOL																0.042 U
2-METHYL-4,6-DINITROPHENOL																0.21 UJ
2-METHYLNAPHTHALENE																0.16
2-NITROANILINE																0.042 U
2-NITROPHENOL																
3,3-DICHLOROBENZIDINE																0.13 U
3-NITROANILINE																
4-BROMOPHENYL PHENYL ETHER																
4-CHLORO-3-METHYLPHENOL																0.084 U
4-CHLOROANILINE																
4-CHLOROPHENYL PHENYL ETHER																
4-NITROANILINE																
4-NITROPHENOL																
ACENAPHTHENE																0.042 U
ACENAPHTHYLENE																0.042 U
ACETOPHENONE																0.084 U
ANTHRACENE																0.042 U
ATRAZINE																
BENZALDEHYDE																0.084 U
BENZIDINE																1.5 UJ
BENZO(A)ANTHRACENE																0.042 U
BENZO(A)PYRENE																0.042 U
BENZO(B)FLUORANTHENE																0.042 U
BENZO(GHI)PERYLENE																0.042 U
BENZO(K)FLUORANTHENE																0.042 U
BENZYL BUTYL PHTHALATE																0.084 U
Biphenyl																0.042 U

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SBR16 SBR16-110692-4-5 11/6/1992 4-5 ft	SBR16 SBR16-110692-7-8 11/6/1992 7-8 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR17 SBR17-110692-4-5 11/6/1992 4-5 ft	SBR17 SBR17-110692-7-8 11/6/1992 7-8 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR18 SBR18-110492-4.5-5 11/4/1992 4.5-5 ft	SBR18 SBR18-110492-7.5-8 11/4/1992 7.5-8 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR19 SBR19-110692-2-3 11/6/1992 2-3 ft	SBR19 SBR19-110692-5-6 11/6/1992 5-6 ft	SRI-10 SRI-10-4-7-7-09 7/7/2009 3-5 ft	SRI-10 SRI-10-8-7-7-09 7/7/2009 7-9 ft	SRI-6 SRI-6-4-8-5-09 8/5/2009 3-5 ft	SRI-6 SRI-6-8-8-5-09 8/5/2009 7-9 ft	SRI-7 SRI-7-4-7-6-09 7/6/2009 3-5 ft
BIS(2-CHLOROETHOXY) METHANE																
BIS(2-CHLOROETHYL) ETHER																0.042 U
Bis(2-chloroisopropyl) ether																0.042 UJ
BIS(2-CHLOROISOPROPYL)ETHER																
BIS(2-ETHYLHEXYL)PHTHALATE																0.084 U
CAPROLACTAM																0.042 U
CARBAZOLE																0.042 U
CHRYSENE																0.042 U
CRESOL,O																0.084 U
CRESOL,P																0.084 U
DIBENZO(A,H)ANTHRACENE																0.042 U
DIBENZOFURAN																
DIETHYL PHTHALATE																0.084 U
DIMETHYL PHTHALATE																0.084 U
DI-N-BUTYL PHTHALATE																0.084 U
DI-N-OCTYL PHTHALATE																0.084 U
FLUORANTHENE																0.042 U
FLUORENE																0.042 U
HEXACHLOROBENZENE																0.042 U
HEXACHLOROBUTADIENE																0.084 U
HEXACHLOROCYCLOPENTADIENE																0.21 U
HEXACHLOROETHANE																0.042 U
INDENO(1,2,3-CD)PYRENE																0.042 U
ISOPHORONE																0.042 U
NAPHTHALENE																0.19
NITROBENZENE																0.042 U
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE																0.042 U
N-NITROSODIPHENYLAMINE																0.042 U
PENTACHLOROPHENOL																0.21 U
PHENANTHRENE																0.042 U
PHENOL																0.042 U
PYRENE																0.042 U
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM																6690
ANTIMONY																1.23 U
ARSENIC																6.93
BARIUM																23.1
BERYLLIUM																0.707
CADMIUM																0.178 J
CALCIUM																110 U
CHROMIUM																49.2
COBALT																1.24
COPPER																8.7 U

Attachment A
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CPS Madison
Old Bridge, New Jersey

chemical_name	SBR16 SBR16-110692-4-5 11/6/1992 4-5 ft	SBR16 SBR16-110692-7-8 11/6/1992 7-8 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR17 SBR17-110692-4-5 11/6/1992 4-5 ft	SBR17 SBR17-110692-7-8 11/6/1992 7-8 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR18 SBR18-110492-4.5-5 11/4/1992 4.5-5 ft	SBR18 SBR18-110492-7.5-8 11/4/1992 7.5-8 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR19 SBR19-110692-2-3 11/6/1992 2-3 ft	SBR19 SBR19-110692-5-6 11/6/1992 5-6 ft	SRI-10 SRI-10-4-7-7-09 7/7/2009 3-5 ft	SRI-10 SRI-10-8-7-7-09 7/7/2009 7-9 ft	SRI-6 SRI-6-4-8-5-09 8/5/2009 3-5 ft	SRI-6 SRI-6-8-8-5-09 8/5/2009 7-9 ft	SRI-7 SRI-7-4-7-6-09 7/6/2009 3-5 ft
IRON																23900
LEAD																8.84
MAGNESIUM																217 J
MANGANESE																34.5
MERCURY																0.13 U
NICKEL																5.13
POTASSIUM																569
SELENIUM																1.2 U
SILVER																0.221 U
SODIUM																93.9 J
THALLIUM																1.78 U
VANADIUM																73 J
ZINC																31
% Solid **(%)**																
CYANIDE																
Moisture **(%)**												11	8.4	13.5	17.1	21
PH **(pH units)**	5.7	5	10	6.3	5.4	5.6	5	5.8	11	7.2	6					
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-7 SRI-7-8-7-6-09 7/6/2009 7-9 ft	SRI-8 SRI-8-4-8-5-09 8/5/2009 3-5 ft	SRI-8 SRI-8-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-5 SRI-5-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-5 SRI-5-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-9 SRI-9-4-7-7-09 7/7/2009 3-5 ft	SRI-SM-9 SRI-9-8-7-7-09 7/7/2009 7-9 ft	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Base-7-8-09 7/8/2009 2-2.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,1,2,2-TETRACHLOROETHANE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																0.002 U
1,1,2-TRICHLOROETHANE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,1-DICHLOROETHANE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,1-DICHLOROETHYLENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,2,3-TRICHLOROBENZENE																0.001 U
1,2,4-TRICHLOROBENZENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,2-CIS-DICHLOROETHYLENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,2-DIBROMO-3-CHLOROPROPANE	0.12 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U					0.002 UJ	0.1 U	0.002 UJ		0.002 U
1,2-DIBROMOETHANE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,2-DICHLOROBENZENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,2-DICHLOROETHANE	0.06 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U									0.001 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE	0.06 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U									0.001 U
1,2-TRANS-DICHLOROETHYLENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,3-CIS-DICHLOROPROPYLENE	0.06 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U									0.001 U
1,3-DICHLOROBENZENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,3-TRANS-DICHLOROPROPYLENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,4-DICHLOROBENZENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
1,4-DIOXANE																0.073 U
2-CHLOROETHYL VINYL ETHER																
2-HEXANONE																0.003 U
ACETONE	0.42 UJ	0.033	0.008	0.014	0.023	0.032	0.03									0.007 U
ACROLEIN	1.2 UJ	0.023 U	0.021 U	0.02 U	0.023 U	0.021 U	0.023 U					0.023 U	1 U	0.022 U		0.021 U
ACRYLONITRILE	0.24 UJ	0.005 U	0.004 U	0.004 U	0.005 U	0.004 U	0.005 U					0.005 U	0.2 U	0.004 U		0.004 U
BENZENE	0.03 U	0.0006 U	0.0005 U	0.0005 U	0.0006 U	0.001	0.0006 U									0.0005 U
BROMOCHLOROMETHANE																0.001 U
BROMOFORM	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
CARBON DISULFIDE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
CARBON TETRACHLORIDE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
CHLOROBENZENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
CHLORODIBROMOMETHANE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
CHLOROETHANE	0.24 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U					0.002 U	0.2 U	0.002 U		0.002 U
CHLOROFORM	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
CYCLOHEXANE																0.001 U
CYCLOHEXANE, METHYL-																0.001 U
DICHLOROBROMOMETHANE	0.06 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U									0.001 U
DICHLORODIFLUOROMETHANE	0.12 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U					0.002 U	0.1 U	0.002 U		0.002 U
ETHYLBENZENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
ISOPROPYLBENZENE																0.001 U
M+P-XYLENE																0.001 U
METHYL ACETATE	0.2 J	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U					0.002 UJ	0.32	0.002 U		0.002 U
METHYL BROMIDE	0.12 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U					0.002 U	0.1 UJ	0.002 U		0.002 U
METHYL CHLORIDE	0.12 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U					0.002 U	0.1 U	0.002 U		0.002 U
METHYL ETHYL KETONE	0.24 UJ	0.005 U	0.004 U	0.004 U	0.005 U	0.004 U	0.005 U					0.005 UJ	0.2 U	0.004 U		0.004 U
METHYL ISOBUTYL KETONE	0.18 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U									0.003 U
METHYLENE CHLORIDE	0.12 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U					0.002 U	0.1 U	0.002 U		0.002 U
METHYL-T-BUTYL ETHER	0.03 UJ	0.0006 U	0.0005 U	0.0005 U	0.0006 U	0.0005 U	0.0006 U					0.0006 U	0.025 U	0.0005 U		0.0005 U
O-XYLENE																0.001 U

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CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-7 SRI-7-8-7-6-09 7/6/2009 7-9 ft	SRI-8 SRI-8-4-8-5-09 8/5/2009 3-5 ft	SRI-8 SRI-8-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-5 SRI-5-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-5 SRI-5-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-9 SRI-9-4-7-7-09 7/7/2009 3-5 ft	SRI-SM-9 SRI-9-8-7-7-09 7/7/2009 7-9 ft	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Base-7-8-09 7/8/2009 2-2.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft
STYRENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
t-Butyl Alcohol	1.2 UJ	0.023 U	0.021 U	0.02 U	0.023 U	0.021 U	0.023 U					0.023 U	1 U	0.022 U		0.021 U
TETRACHLOROETHYLENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
TOLUENE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
TRICHLOROETHYLENE	0.06 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U									0.001 U
TRICHLOROFLUOROMETHANE	0.12 UJ	0.002 UJ	0.002 UJ	0.002 UJ	0.002 UJ	0.002 U	0.002 U					0.002 U	0.1 U	0.002 U		0.002 U
VINYL CHLORIDE	0.06 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		0.001 U
XYLENES,TOTAL	0.06 UJ	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U					0.001 U	0.05 U	0.001 U		
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE															0.075 U	
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE				0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U		
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE															0.11 U	
2,3,4,6-Tetrachlorophenol															0.075 U	
2,4,5-TRICHLOROPHENOL	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
2,4,6-TRICHLOROPHENOL	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
2,4-DICHLOROPHENOL	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
2,4-DIMETHYLPHENOL	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
2,4-DINITROPHENOL	0.8 UJ			0.76 UJ	0.88 UJ	7.1 U	0.77 U	0.7 UJ	0.97 UJ	0.83 UJ	0.79 UJ	0.78 UJ	0.77 UJ	0.77 UJ	0.37 U	
2,4-DINITROTOLUENE	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
2,6-DINITROTOLUENE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
2-CHLORONAPHTHALENE															0.037 U	
2-CHLOROPHENOL	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
2-METHYL-4,6-DINITROPHENOL	0.2 UJ			0.19 UJ	0.22 UJ	1.8 UJ	0.19 UJ	0.17 UJ	0.24 UJ	0.21 UJ	0.2 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.19 U	
2-METHYLNAPHTHALENE	0.07			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.22	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
2-NITROANILINE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
2-NITROPHENOL															0.037 U	
3,3-DICHLOROBENZIDINE	0.12 U			0.11 UJ	0.13 UJ	1.1 U	0.12 U	0.1 U	0.15 U	0.12 U	0.12 U	0.12 U	0.12 U	0.11 U	0.11 U	
3-NITROANILINE															0.075 U	
4-BROMOPHENYL PHENYL ETHER															0.037 U	
4-CHLORO-3-METHYLPHENOL	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
4-CHLOROANILINE															0.075 U	
4-CHLOROPHENYL PHENYL ETHER															0.037 U	
4-NITROANILINE															0.075 U	
4-NITROPHENOL															0.19 U	
ACENAPHTHENE	0.041			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.086	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
ACENAPHTHYLENE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.045	0.038 U	0.037 U	
ACETOPHENONE	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
ANTHRACENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.14	0.19	0.04 U	0.039 U	0.17	0.038 U	0.037 U	
ATRAZINE															0.037 U	
BENZALDEHYDE	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
BENZIDINE	1.4 UJ			1.3 UJ	1.5 UJ	12 U	1.3 U	1.2 UJ	1.7 UJ	1.4 UJ	1.4 UJ	1.4 UJ	1.3 UJ	1.3 UJ	1.3 U	
BENZO(A)ANTHRACENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.32	0.96	0.04 U	0.039 U	1	0.038 U	0.037 U	
BENZO(A)PYRENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.069	0.46	1.1	0.04 U	0.039 U	1.4	0.038 U	0.037 U	
BENZO(B)FLUORANTHENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.11	0.72	1.8	0.05	0.039 U	2.4	0.038 U	0.037 U	
BENZO(GHI)PERYLENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.07	0.31	0.86	0.04 U	0.039 U	1.3	0.038 U	0.037 U	
BENZO(K)FLUORANTHENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.038	0.33	0.75	0.04 U	0.039 U	1.1	0.038 U	0.037 U	
BENZYL BUTYL PHTHALATE	0.08 U			0.076 UJ	0.088 UJ	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
Biphenyl	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.057	1.9	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-7 SRI-7-8-7-6-09 7/6/2009 7-9 ft	SRI-8 SRI-8-4-8-5-09 8/5/2009 3-5 ft	SRI-8 SRI-8-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-5 SRI-5-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-5 SRI-5-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-9 SRI-9-4-7-7-09 7/7/2009 3-5 ft	SRI-SM-9 SRI-9-8-7-7-09 7/7/2009 7-9 ft	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Base-7-8-09 7/8/2009 2-2.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft
BIS(2-CHLOROETHOXY) METHANE															0.037 U	
BIS(2-CHLOROETHYL) ETHER	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
Bis(2-chloroisopropyl) ether	0.04 UJ			0.038 U	0.044 U	0.35 U	0.038 U	0.035 UJ	0.049 UJ	0.041 UJ	0.04 UJ	0.039 UJ	0.038 UJ	0.038 UJ	0.037 U	
BIS(2-CHLOROISOPROPYL)ETHER															0.037 U	
BIS(2-ETHYLHEXYL)PHTHALATE	0.08 U			0.076 UJ	0.088 UJ	0.71 U	0.077 U	0.26	1.4	1	0.079 U	0.078 U	0.31	0.077 U	0.075 U	
CAPROLACTAM	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
CARBAZOLE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.13	0.18	0.04 U	0.039 U	0.14	0.038 U	0.037 U	
CHRYSENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.13	1.8	1.9	0.04	0.039 U	1.6	0.038 U	0.037 U	
CRESOL,O	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
CRESOL,P	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
DIBENZO(A,H)ANTHRACENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.093	0.24	0.04 U	0.039 U	0.34	0.038 U	0.037 U	
DIBENZOFURAN															0.037 U	
DIETHYL PHTHALATE	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
DIMETHYL PHTHALATE	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
DI-N-BUTYL PHTHALATE	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
DI-N-OCTYL PHTHALATE	0.08 U			0.076 UJ	0.088 UJ	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
FLUORANTHENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.05	1.1	2.1	0.059	0.039 U	2	0.038 U	0.037 U	
FLUORENE	0.077			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.11	0.046	0.04 U	0.039 U	0.039	0.038 U	0.037 U	
HEXACHLOROBENZENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
HEXACHLOROBUTADIENE	0.08 U			0.076 U	0.088 U	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U	0.075 U	
HEXACHLOROCYCLOPENTADIENE	0.2 U			0.19 UJ	0.22 UJ	1.8 U	0.19 U	0.17 U	0.24 U	0.21 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	
HEXACHLOROETHANE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
INDENO(1,2,3-CD)PYRENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.06	0.29	0.78	0.04 U	0.039 U	1.2	0.038 U	0.037 U	
ISOPHORONE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
NAPHTHALENE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.063	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
NITROBENZENE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
N-NITROSODIMETHYLAMINE				0.076 UJ	0.088 UJ	0.71 U	0.077 U	0.07 U	0.097 U	0.083 U	0.079 U	0.078 U	0.077 U	0.077 U		
N-NITROSODI-N-PROPYLAMINE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
N-NITROSODIPHENYLAMINE	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
PENTACHLOROPHENOL	0.2 U			0.19 U	0.22 U	1.8 U	0.19 U	0.17 U	0.24 U	0.21 U	0.2 U	0.19 U	0.19 U	0.19 U	0.19 U	
PHENANTHRENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.035 U	0.93	1.3	0.04 U	0.039 U	0.84	0.038 U	0.037 U	
PHENOL	0.04 U			0.038 U	0.044 U	0.35 U	0.038 U	0.035 U	0.049 U	0.041 U	0.04 U	0.039 U	0.038 U	0.038 U	0.037 U	
PYRENE	0.04 U			0.038 UJ	0.044 UJ	0.35 U	0.038 U	0.057 J	1 J	2.1 J	0.055 J	0.039 UJ	1.9 J	0.038 UJ	0.037 U	
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM	5610				3950	7250 J	6190 J	8400	8360	7570	8860	4540	8110	5290	16700	
ANTIMONY	2.41 U			5.7 U	1.31 U	1.05 U	1.3 J	2	1.43 U	2.4 U	1.18 U	1.12 U	1.12 U	1.15 U	0.732 U	
ARSENIC	13.5			5.42 U		4.04	3.98	2.25	3.15	4.81	1.3 J	1.06 U	1.85 J	1.09 U	2.92	
BARIUM	12.7			4.4 J	27.5 J	18.9 J	8.09 J	31.7	35.4	45.4	26.3 J	8.67	26.1	11.3	23	
BERYLLIUM	0.734			0.328 J	0.313 J	0.0717 U	0.0762 U	0.266 J	0.424 J	0.322 J	0.191 J	0.0761 U	0.366 J	0.0989 J	0.337	
CADMIUM	0.185 J			0.798 U	0.191 J	0.177 U	0.192 U	0.861	0.853	0.988	0.165 U	0.157 U	0.96	0.161 U	0.509	
CALCIUM	905			132 U	107 U	2260	82.6	27200	68300	73500		27.4	3060	59.2	225	
CHROMIUM	28					18.2	40.9	27.4 J	59.2 J	37.9 J	7.05 J	6.36 J	9.13 J	9.16 J	11.9	
COBALT	1.27			0.431 J	6.54	3.63	1.17	5.27	3.38	6.63	0.402 J	0.439 J	4.93	0.637	2.08	
COPPER	12.9 U			2.98 J	6.4	13	5.15	309	242	540	4.55 J	1.17	240	1.72	5.96	

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-7 SRI-7-8-7-6-09 7/6/2009 7-9 ft	SRI-8 SRI-8-4-8-5-09 8/5/2009 3-5 ft	SRI-8 SRI-8-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-5 SRI-5-4-8-5-09 8/5/2009 3-5 ft	SRI-SM-5 SRI-5-8-8-5-09 8/5/2009 7-9 ft	SRI-SM-9 SRI-9-4-7-7-09 7/7/2009 3-5 ft	SRI-SM-9 SRI-9-8-7-7-09 7/7/2009 7-9 ft	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Base-7-8-09 7/8/2009 2-2.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft
IRON	35900				1940	19800	31400	17300	11700	34300	4590 J	1560	13900	2270	10900	
LEAD	9.04			4.04 J	8.62	8.5	4.42	76.5	94.2	140	8.88 J	2.61	55.6	3.62	8.05	
MAGNESIUM	313 J					2030	311								772	
MANGANESE	34.5			9.94 J	14.5 J	91.3	21.2	151 J	159 J	275 J	16.3 J	11.1 J	87.6 J	19.4 J	44.7	
MERCURY	0.0135 U			0.0127 U	0.0149 U	0.0119 U	0.0128 U	0.741	1	0.787	0.0188 J	0.0211 J	0.0129 U	0.0125 U	0.0079 U	
NICKEL	4.43			1.03 U	6.59	9.71	4.52	20.2	23.8	19.9	4.43	2.4	8.75	2.89	8.55	
POTASSIUM	462			198 J	800 J	904	337	518 J	349 J	523 J	415 J	365 J	342 J	459 J	503	
SELENIUM	1.18 U			5.59 U	1.28 U	1.03 U	1.1 U	0.997 U	1.4 U	1.19 U	1.16 U	1.1 U	1.1 U	1.13 U	0.754 U	
SILVER	0.217 U			0.205 U	0.235 U	0.19 U	0.202 U	0.183 U	0.258 U	0.285 J	0.212 U	0.201 U	0.273 J	0.207 U	0.092 U	
SODIUM	64.5 J			42.5 U	194	184	41.8 U	683	281	319	44 U	41.8 U	583	42.9 U	74	
THALLIUM	1.74 U			8.27 U	1.9 U	1.53 U	1.63 U	1.48 U	2.08 U	2.39 J	1.71 U	1.62 U	1.77 J	1.67 U	0.797	
VANADIUM	69 J					67.9	47.7	43.7	25.8	25.4	15.1 J	4.81	25	8.35	15.7	
ZINC	41.7					41.3	22.2	616 J	432 J	711 J	12.5 J	8.23 J	573 J	7.89 J	181	
% Solid **(%)**																
CYANIDE																
Moisture **(%)**	16.9	12.2	7.9	12.3	24.3	6.1	13.4	4.6	31.6	19.3	16.1	14.1	13.2	13	10.7	
PH **(pH units)**															6.11	
TOC/Solids/Sludges/Combustion																
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1,2,2-TETRACHLOROETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
1,1,2-TRICHLOROETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1-DICHLOROETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1-DICHLOROETHYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2,3-TRICHLOROBENZENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2,4-TRICHLOROBENZENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-CIS-DICHLOROETHYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DIBROMO-3-CHLOROPROPANE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
1,2-DIBROMOETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DICHLOROBENZENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DICHLOROETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-TRANS-DICHLOROETHYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,3-CIS-DICHLOROPROPYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,3-DICHLOROBENZENE		0.001 U		0.001 U		0.002		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,3-TRANS-DICHLOROPROPYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,4-DICHLOROBENZENE		0.001 U		0.001 U		0.005		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,4-DIOXANE		0.072 U		0.072 U		0.067 U		0.078 U		0.079 U		0.094 U		0.095 U		0.078 U
2-CHLOROETHYL VINYL ETHER																
2-HEXANONE		0.003 U		0.003 U		0.003 U		0.003 U		0.003 U		0.004 U		0.004 U		0.003 U
ACETONE		0.007 U		0.007 U		0.016		0.011		0.008 U		0.032		0.03		0.008 U
ACROLEIN		0.021 U		0.021 U		0.019 U		0.022 U		0.022 U		0.027 U		0.027 U		0.022 U
ACRYLONITRILE		0.004 U		0.004 U		0.004 U		0.004 U		0.004 U		0.005 U		0.005 U		0.004 U
BENZENE		0.0005 U		0.0005 U		0.0005 U		0.001		0.0006 U		0.001		0.0007 U		0.0006 U
BROMOCHLOROMETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
BROMOFORM		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CARBON DISULFIDE		0.001 U		0.001 U		0.001		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CARBON TETRACHLORIDE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001
CHLOROBENZENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CHLORODIBROMOMETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CHLOROETHANE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
CHLOROFORM		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CYCLOHEXANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CYCLOHEXANE, METHYL-		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
DICHLOROBROMOMETHANE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
DICHLORODIFLUOROMETHANE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
ETHYLBENZENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
ISOPROPYLBENZENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
M+P-XYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
METHYL ACETATE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
METHYL BROMIDE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
METHYL CHLORIDE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
METHYL ETHYL KETONE		0.004 U		0.004 U		0.004 U		0.004 U		0.004 U		0.005 U		0.005 U		0.004 U
METHYL ISOBUTYL KETONE		0.003 U		0.003 U		0.003 U		0.003 U		0.003 U		0.004 U		0.004 U		0.003 U
METHYLENE CHLORIDE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
METHYL-T-BUTYL ETHER		0.0005 U		0.0005 U		0.0005 U		0.0006 U		0.0006 U		0.0007 U		0.0007 U		0.0006 U
O-XYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft
STYRENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
t-Butyl Alcohol		0.021 U		0.021 U		0.019 U		0.022 U		0.022 U		0.027 U		0.027 U		0.022 U
TETRACHLOROETHYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
TOLUENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.002		0.001 U
TRICHLOROETHYLENE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
TRICHLOROFLUOROMETHANE		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.003 U		0.003 U		0.002 U
VINYL CHLORIDE		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
XYLENES,TOTAL																
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.12 U		0.11 U		0.12 U	
2,3,4,6-Tetrachlorophenol	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
2,4,5-TRICHLOROPHENOL	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
2,4,6-TRICHLOROPHENOL	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
2,4-DICHLOROPHENOL	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
2,4-DIMETHYLPHENOL	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
2,4-DINITROPHENOL	0.37 U		0.37 U		0.38 U		0.37 U		0.37 U		0.42		0.37 U		0.4 U	
2,4-DINITROTOLUENE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
2,6-DINITROTOLUENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
2-CHLORONAPHTHALENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
2-CHLOROPHENOL	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
2-METHYL-4,6-DINITROPHENOL	0.18 U		0.19 U		0.19 U		0.18 U		0.19 U		0.2 U		0.19 U		0.2 U	
2-METHYLNAPHTHALENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.37		0.037 U		0.04 U	
2-NITROANILINE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
2-NITROPHENOL	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
3,3-DICHLOROBENZIDINE	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.12 U		0.11 U		0.12 U	
3-NITROANILINE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
4-BROMOPHENYL PHENYL ETHER	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
4-CHLORO-3-METHYLPHENOL	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
4-CHLOROANILINE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
4-CHLOROPHENYL PHENYL ETHER	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
4-NITROANILINE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
4-NITROPHENOL	0.18 U		0.19 U		0.19 U		0.18 U		0.19 U		0.2 U		0.19 U		0.2 U	
ACENAPHTHENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
ACENAPHTHYLENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
ACETOPHENONE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
ANTHRACENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
ATRAZINE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
BENZALDEHYDE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
BENZIDINE	1.3 U		1.3 U		1.3 U		1.3 U		1.3 U		1.4 U		1.3 U		1.4 U	
BENZO(A)ANTHRACENE	0.037 U		0.037 U		0.038 U		0.037 U		0.045		0.04 U		0.037 U		0.041 U	
BENZO(A)PYRENE	0.037 U		0.037 U		0.038 U		0.037 U		0.041		0.04 U		0.037 U		0.041 U	
BENZO(B)FLUORANTHENE	0.037 U		0.037 U		0.038 U		0.037 U		0.074		0.04 U		0.037 U		0.041 U	
BENZO(GHI)PERYLENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037		0.04 U		0.037 U		0.041 U	
BENZO(K)FLUORANTHENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.041 U	
BENZYL BUTYL PHTHALATE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
Biphenyl	0.037 U		0.037 U		8		0.037 U		0.037 U		0.83		0.037 U		0.04 U	

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft
BIS(2-CHLOROETHOXY) METHANE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
BIS(2-CHLOROETHYL) ETHER	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
Bis(2-chloroisopropyl) ether	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.041 U	
BIS(2-CHLOROISOPROPYL)ETHER	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
BIS(2-ETHYLHEXYL)PHTHALATE	0.074 U		0.075 U		0.099		0.073 U		0.074 U		14		0.075 U		0.081 U	
CAPROLACTAM	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
CARBAZOLE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
CHRYSENE	0.037 U		0.037 U		0.038 U		0.037 U		0.065		0.14		0.037 U		0.041 U	
CRESOL,O	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
CRESOL,P	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
DIBENZO(A,H)ANTHRACENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.041 U	
DIBENZOFURAN	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.12		0.037 U		0.04 U	
DIETHYL PHTHALATE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
DIMETHYL PHTHALATE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
DI-N-BUTYL PHTHALATE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
DI-N-OCTYL PHTHALATE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.081 U	
FLUORANTHENE	0.037 U		0.037 U		0.038 U		0.037 U		0.09		0.04		0.037 U		0.04 U	
FLUORENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.051		0.037 U		0.04 U	
HEXACHLOROBENZENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
HEXACHLOROBUTADIENE	0.074 U		0.075 U		0.076 U		0.073 U		0.074 U		0.079 U		0.075 U		0.08 U	
HEXACHLOROCYCLOPENTADIENE	0.18 U		0.19 U		0.19 U		0.18 U		0.19 U		0.2 U		0.19 U		0.2 U	
HEXACHLOROETHANE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
INDENO(1,2,3-CD)PYRENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.041 U	
ISOPHORONE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
NAPHTHALENE	0.037 U		0.037 U		0.2		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
NITROBENZENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
N-NITROSODIPHENYLAMINE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
PENTACHLOROPHENOL	0.18 U		0.19 U		0.19 U		0.18 U		0.19 U		0.2 U		0.19 U		0.2 U	
PHENANTHRENE	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.16		0.037 U		0.04 U	
PHENOL	0.037 U		0.037 U		0.038 U		0.037 U		0.037 U		0.04 U		0.037 U		0.04 U	
PYRENE	0.037 U		0.037 U		0.038 U		0.037 U		0.069		0.098		0.037 U		0.04 U	
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM	20600		4750		11200		2830		3720		7800		3300		2560	
ANTIMONY	0.723 U		0.73 U		0.735 U		0.715 U		0.729 U		0.767 U		0.719 U		0.788 U	
ARSENIC	2.55		3.36		3.25		3.2		2.94		7.39		2.68		2.67	
BARIUM	50.9		24.8		21.2		8.34		11.8		23.5		15.7		10.4	
BERYLLIUM	0.687		0.35		0.245		0.172		0.168		0.628		0.683		0.122	
CADMIUM	0.226		0.246		0.381		0.332		0.301		0.651		0.227		0.626	
CALCIUM	135		51.7		1870		5050		162		9070		3400		616	
CHROMIUM	7.32		6.67		12		15.1		9.27		20.7		19.2		10.1	
COBALT	2.71		0.648		1.9		0.494		0.645		2.18		0.775		0.962	
COPPER	2.22		4.07		22.8		7.4		16.1		92.4		60.3		112	

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Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft
IRON	12800		8430		6630		10500		8770		20400		5190		7070	
LEAD	5.74		7.34		18.3		6.69		11.3		28.2		24.1		29.8	
MAGNESIUM	324		95.9		1160		346		191		1420		253		461	
MANGANESE	74.7		17.9		41.3		26.8		16.3		69.8		26.3		25.1	
MERCURY	0.0075 U		0.0079 U		0.0076 U		0.0075 U		0.0092		0.0407		0.0077 U		0.0223	
NICKEL	4.34		1.52		6.14		1.06		1.74		11.2		2.52		3.33	
POTASSIUM	290		417		812		334		323		1080		393		238	
SELENIUM	0.745 U		0.752 U		0.757 U		0.737 U		0.751 U		0.791 U		0.741 U		0.812 U	
SILVER	0.0909 U		0.0918 U		0.0924 U		0.0899 U		0.0916 U		0.0965 U		0.217		0.139	
SODIUM	21.9		10.1		81		34.3		22		113		31.3		64.1	
THALLIUM	1.05		0.398 U		0.401 U		0.825		0.555		1.68		0.392 U		0.43 U	
VANADIUM	17.6		18		23.4		27.5		19.4		29.1		14.4		16.1	
ZINC	13.9		15.7		212		74.7		41.9		126		43.6		327	
% Solid **(%)**																
CYANIDE																
Moisture **(%)**	10.5		11.4		12.8		10.4		11.2		16.5		10.9		17.9	
PH **(pH units)**	5.94		4.63		8.28		8.6		4.72		7.79		9.09		6.31	
TOC/Solids/Sludges/Combustion	196		1300										13500			
TOTAL ORGANIC CARBON																

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-42 SRI-SS-42-H-092512 9/25/2012 3.5-4 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-H-092512 9/25/2012 3.5-4 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-H-092612 9/26/2012 3.5-4 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-H-092612 9/26/2012 3.5-4 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-47 SRI-SS-47-H-092612 9/26/2012 3.5-4 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-53 SRI-SS-53-H-092612 9/26/2012 3.5-4 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-H-092612 9/26/2012 3.5-4 ft
Volatile Organics (mg/Kg)														
1,1,1,2-TETRACHLOROETHANE														
1,1,1-TRICHLOROETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,1,2,2-TETRACHLOROETHANE	0.001 U	0.001 U	0.002 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
1,1,2-TRICHLOROETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,1-DICHLOROETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,1-DICHLOROETHYLENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2,3-TRICHLOROBENZENE	0.001 U	0.001 U	0.002 UJ	0.001 U	0.001	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2,4-TRICHLOROBENZENE	0.001 U	0.001 U	0.002 J	0.001 U	0.002	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2-CIS-DICHLOROETHYLENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2-DIBROMO-3-CHLOROPROPANE	0.002 U	0.002 U	0.003 UJ	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
1,2-DIBROMOETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2-DICHLOROBENZENE	0.001 U	0.001 U	0.002 UJ	0.001 U	0.005	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2-DICHLOROETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2-DICHLOROETHYLENE														
1,2-DICHLOROPROPANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,2-TRANS-DICHLOROETHYLENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,3-CIS-DICHLOROPROPYLENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,3-DICHLOROBENZENE	0.001 U	0.001 U	0.002 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,3-TRANS-DICHLOROPROPYLENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,4-DICHLOROBENZENE	0.001 U	0.001 U	0.002 UJ	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
1,4-DIOXANE	0.081 U	0.086 U	0.11 U	0.09 U	0.099 U	0.078 U	0.091 U	0.11 U	0.088 U	0.097 U				
2-CHLOROETHYL VINYL ETHER														
2-HEXANONE	0.003 U	0.004 U	0.005 U	0.004 U	0.004 U	0.003 U	0.004 U	0.005 U	0.004 U	0.004 U				
ACETONE	0.008 U	0.035	0.038	0.24	0.058	0.016	0.036	0.021	0.056	0.01 U				
ACROLEIN	0.023 U	0.024 U	0.032 U	0.026 U	0.028 U	0.022 U	0.026 U	0.033 U	0.025 U	0.028 U				
ACRYLONITRILE	0.005 U	0.005 U	0.006 U	0.005 U	0.006 U	0.004 U	0.005 U	0.007 U	0.005 U	0.006 U				
BENZENE	0.0006 U	0.0006 U	0.0008 U	0.0006 U	0.002	0.0006 U	0.0007 U	0.0008 U	0.0006 U	0.0007 U				
BROMOCHLOROMETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
BROMOFORM	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
CARBON DISULFIDE	0.001 U	0.001	0.002 U	0.001 U	0.004	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
CARBON TETRACHLORIDE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
CHLOROBENZENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
CHLORODIBROMOMETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
CHLOROETHANE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
CHLOROFORM	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
CYCLOHEXANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
CYCLOHEXANE, METHYL-	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
DICHLOROBROMOMETHANE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
DICHLORODIFLUOROMETHANE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
ETHYLBENZENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
ISOPROPYLBENZENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
M+P-XYLENE	0.001 U	0.001 U	0.002 U	0.008	0.002	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
METHYL ACETATE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
METHYL BROMIDE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
METHYL CHLORIDE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
METHYL ETHYL KETONE	0.005 U	0.005 U	0.006 U	0.035	0.006 U	0.004 U	0.005 U	0.007 U	0.005 U	0.006 U				
METHYL ISOBUTYL KETONE	0.003 U	0.004 U	0.005 U	0.004 U	0.004 U	0.003 U	0.004 U	0.005 U	0.004 U	0.004 U				
METHYLENE CHLORIDE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.009	0.009	0.003 U	0.004				
METHYL-T-BUTYL ETHER	0.0006 U	0.0006 U	0.0008 U	0.0006 U	0.0007 U	0.0006 U	0.0007 U	0.0008 U	0.0006 U	0.0007 U				
O-XYLENE	0.001 U	0.001 U	0.002 U	0.004	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				

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Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-42 SRI-SS-42-H-092512 9/25/2012 3.5-4 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-H-092512 9/25/2012 3.5-4 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-H-092612 9/26/2012 3.5-4 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-H-092612 9/26/2012 3.5-4 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-47 SRI-SS-47-H-092612 9/26/2012 3.5-4 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-53 SRI-SS-53-H-092612 9/26/2012 3.5-4 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-H-092612 9/26/2012 3.5-4 ft
STYRENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
t-Butyl Alcohol	0.023 U	0.031	0.032 U	0.026 U	0.028 U	0.022 U	0.026 U	0.033 U	0.025 U	0.028 U				
TETRACHLOROETHYLENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
TOLUENE	0.001 U	0.001 U	0.007	0.001 U	0.003	0.001 U	0.3	0.002 U	0.001 U	0.001 U				
TRICHLOROETHYLENE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
TRICHLOROFLUOROMETHANE	0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U				
VINYL CHLORIDE	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U				
XYLENES,TOTAL														
Semivolatile Organics (mg/Kg)														
1,2,4,5-TETRACHLOROBENZENE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
1,2,4-TRICHLOROBENZENE														
1,2-DICHLOROBENZENE														
1,2-DIPHENYLHYDRAZINE														
1,3-DICHLOROBENZENE														
1,4-DICHLOROBENZENE														
1,4-DIOXANE	0.56 U	0.11 U	0.56 U	0.56 UJ	0.11 U	0.11 U	0.11 U	0.12 U	0.12 U	0.12 U				
2,3,4,6-Tetrachlorophenol	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
2,4,5-TRICHLOROPHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
2,4,6-TRICHLOROPHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
2,4-DICHLOROPHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
2,4-DIMETHYLPHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
2,4-DINITROPHENOL	1.7 U	0.34 U	1.7 U	1.7 UJ	0.34 U	0.34 U	0.33 U	0.35 U	0.36 U	0.35 U				
2,4-DINITROTOLUENE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
2,6-DINITROTOLUENE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
2-CHLORONAPHTHALENE	0.039 U	0.008 U	0.039 U	0.039 UJ	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U				
2-CHLOROPHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
2-METHYL-4,6-DINITROPHENOL	0.94 U	0.19 U	0.94 U	0.93 UJ	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U				
2-METHYLNAPHTHALENE	0.019 U	0.004 U	0.019 U	0.019 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U				
2-NITROANILINE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
2-NITROPHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
3,3-DICHLOROBENZIDINE	0.56 U	0.11 U	0.56 U	0.56 UJ	0.11 U	0.11 U	0.11 U	0.12 U	0.12 U	0.12 U				
3-NITROANILINE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
4-BROMOPHENYL PHENYL ETHER	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
4-CHLORO-3-METHYLPHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
4-CHLOROANILINE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
4-CHLOROPHENYL PHENYL ETHER	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
4-NITROANILINE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
4-NITROPHENOL	0.94 U	0.19 U	0.94 U	0.93 UJ	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U				
ACENAPHTHENE	0.019 U	0.004 U	0.019 U	0.019 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U				
ACENAPHTHYLENE	0.019 U	0.004 U	0.019 U	0.019 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U				
ACETOPHENONE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
ANTHRACENE	0.019 U	0.004 U	0.019 U	0.019 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U				
ATRAZINE	0.19 U	0.038 U	0.19 U	0.19 UJ	0.038 U	0.038 U	0.037 U	0.039 U	0.04 U	0.039 U				
BENZALDEHYDE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
BENZIDINE	3.9 U	0.8 U	3.9 U	3.9 UJ	0.8 U	0.79 U	0.78 U	0.81 U	0.84 U	0.81 U				
BENZO(A)ANTHRACENE	0.019 U	0.004 U	0.1	0.019 UJ	0.004 U	0.004 U	0.009	0.004 U	0.004 U	0.004 U				
BENZO(A)PYRENE	0.019 U	0.004 U	0.15	0.019 UJ	0.004 U	0.004 U	0.011	0.004 U	0.004 U	0.004 U				
BENZO(B)FLUORANTHENE	0.019 U	0.004 U	0.21	0.019 UJ	0.004 U	0.004 U	0.018	0.004 U	0.004 U	0.004 U				
BENZO(GHI)PERYLENE	0.019 U	0.004 U	0.12	0.019 UJ	0.004 U	0.004 U	0.007	0.004 U	0.004 U	0.004 U				
BENZO(K)FLUORANTHENE	0.019 U	0.004 U	0.11	0.019 UJ	0.004 U	0.004 U	0.004	0.004 U	0.004 U	0.004 U				
BENZYL BUTYL PHTHALATE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
Biphenyl	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-42 SRI-SS-42-H-092512 9/25/2012 3.5-4 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-H-092512 9/25/2012 3.5-4 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-H-092612 9/26/2012 3.5-4 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-H-092612 9/26/2012 3.5-4 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-47 SRI-SS-47-H-092612 9/26/2012 3.5-4 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-53 SRI-SS-53-H-092612 9/26/2012 3.5-4 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-H-092612 9/26/2012 3.5-4 ft
BIS(2-CHLOROETHOXY) METHANE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
BIS(2-CHLOROETHYL) ETHER	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
Bis(2-chloroisopropyl) ether	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
BIS(2-CHLOROISOPROPYL)ETHER	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
BIS(2-ETHYLHEXYL)PHTHALATE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.094	0.075 U	2.7	0.077 U	0.08 U	0.077 U				
CAPROLACTAM	0.19 U	0.038 U	0.19 U	0.19 UJ	0.038 U	0.038 U	0.037 U	0.039 U	0.04 U	0.039 U				
CARBAZOLE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
CHRYSENE	0.019 U	0.004 U	0.37	0.019 UJ	0.005	0.004 U	0.014	0.004 U	0.004 U	0.004 U				
CRESOL,O	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
CRESOL,P	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
DIBENZO(A,H)ANTHRACENE	0.019 U	0.004 U	0.04	0.019 UJ	0.004 U	0.004 U	0.004	0.004 U	0.004 U	0.004 U				
DIBENZOFURAN	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
DIETHYL PHTHALATE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
DIMETHYL PHTHALATE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
DI-N-BUTYL PHTHALATE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
DI-N-OCTYL PHTHALATE	0.38 U	0.076 U	0.38 U	0.37 UJ	0.076 U	0.075 U	0.074 U	0.077 U	0.08 U	0.077 U				
FLUORANTHENE	0.019 U	0.004 U	0.19	0.019 UJ	0.005	0.004 U	0.013	0.004 U	0.004 U	0.004 U				
FLUORENE	0.019 U	0.004 U	0.019 U	0.019 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U				
HEXACHLOROBENZENE	0.019 U	0.004 U	0.019 U	0.019 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U				
HEXACHLOROBUTADIENE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
HEXACHLOROCYCLOPENTADIENE	0.94 U	0.19 U	0.94 U	0.93 UJ	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U				
HEXACHLOROETHANE	0.19 U	0.038 U	0.19 U	0.19 UJ	0.038 U	0.038 U	0.037 U	0.039 U	0.04 U	0.039 U				
INDENO(1,2,3-CD)PYRENE	0.019 U	0.004 U	0.08	0.019 UJ	0.004 U	0.004 U	0.007	0.004 U	0.004 U	0.004 U				
ISOPHORONE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
NAPHTHALENE	0.019 U	0.004 U	0.048	0.019 UJ	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U				
NITROBENZENE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
N-NITROSODIMETHYLAMINE														
N-NITROSODI-N-PROPYLAMINE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
N-NITROSODIPHENYLAMINE	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
PENTACHLOROPHENOL	0.19 U	0.038 U	0.19 U	0.19 UJ	0.038 U	0.038 U	0.037 U	0.039 U	0.04 U	0.039 U				
PHENANTHRENE	0.019 U	0.004 U	0.081	0.019 UJ	0.004	0.004 U	0.006	0.004 U	0.004 U	0.004 U				
PHENOL	0.094 U	0.019 U	0.094 U	0.093 UJ	0.019 U	0.019 U	0.019 U	0.019 U	0.02 U	0.019 U				
PYRENE	0.019 U	0.004 U	0.37	0.019 UJ	0.005	0.004 U	0.012	0.004 U	0.004 U	0.004 U				
PCBs (mg/Kg)														
PCB-1016 (AROCLOR 1016)	0.0041 U		0.004 U		0.0041 U						0.0045 U		0.0045 U	
PCB-1221 (AROCLOR 1221)	0.0052 U		0.0052 U		0.0052 U						0.0057 U		0.0057 U	
PCB-1232 (AROCLOR 1232)	0.009 U		0.009 U		0.0091 U						0.01 U		0.0099 U	
PCB-1242 (AROCLOR 1242)	0.0037 U		0.0037 U		0.0038 U						0.0041 U		0.0041 U	
PCB-1248 (AROCLOR 1248)	0.0037 U		0.0085		0.016 J						0.0041 U		0.0041 U	
PCB-1254 (AROCLOR 1254)	0.0037 U		0.0037 U		0.011 J						0.0041 U		0.0041 U	
PCB-1260 (AROCLOR 1260)	0.025 J		0.0055 U		0.013						0.0061 U		0.0094	
Inorganics (mg/Kg)														
ALUMINUM														
ANTIMONY														
ARSENIC														
BARIUM														
BERYLLIUM														
CADMIUM														
CALCIUM														
CHROMIUM														
COBALT														
COPPER														

Attachment A
Table A-3
Summary of Analytical Results in Area 2 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-42 SRI-SS-42-H-092512 9/25/2012 3.5-4 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-H-092512 9/25/2012 3.5-4 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-H-092612 9/26/2012 3.5-4 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-H-092612 9/26/2012 3.5-4 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-47 SRI-SS-47-H-092612 9/26/2012 3.5-4 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-53 SRI-SS-53-H-092612 9/26/2012 3.5-4 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-H-092612 9/26/2012 3.5-4 ft
IRON														
LEAD														
MAGNESIUM														
MANGANESE														
MERCURY														
NICKEL														
POTASSIUM														
SELENIUM														
SILVER														
SODIUM														
THALLIUM														
VANADIUM														
ZINC														
% Solid **(%)**														
CYANIDE														
Moisture **(%)**	11.3	13.7	11.3	10.6	13.8	12.9	11.7	15	17.7	14.9	21.1	28.7	20.7	12.3
PH **(pH units)**														
TOC/Solids/Sludges/Combustion														
TOTAL ORGANIC CARBON														

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Prepared by / Date: KJC 05/01/14
Checked by / Date: KMW 05/06/14

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE	0 / 3	0.12 : 0.16		0.068333	0.068333	0.13 U	0.16 U	0.12 U								
1,1,1-TRICHLOROETHANE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1,2,2-TETRACHLOROETHANE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0 / 14	0.002 : 0.003		0.001214	0.001214											
1,1,2-TRICHLOROETHANE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHANE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,1-DICHLOROETHYLENE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2,3-TRICHLOROBENZENE	1 / 14	0.001 : 0.002	0.001 - 0.001	0.000571	0.000571											
1,2,4-TRICHLOROBENZENE	2 / 15	0.001 : 0.05	0.002 - 0.002	0.002333	0.002333											
1,2-CIS-DICHLOROETHYLENE	0 / 18	0.001 : 0.16		0.013194	0.013194	0.13 U	0.16 U	0.12 U								
1,2-DIBROMO-3-CHLOROPROPANE	0 / 15	0.002 : 0.1		0.004467	0.004467											
1,2-DIBROMOETHANE	0 / 15	0.001 : 0.05		0.002167	0.002167											
1,2-DICHLOROBENZENE	1 / 26	0 : 0.16	0.005 - 0.005	0.009308	0.013444	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2-DICHLOROETHANE	0 / 25	0 : 0.16		0.0085	0.0125	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2-DICHLOROETHYLENE	0 / 4	0 : 0		0								0 U	0 U		0 U	0 U
1,2-DICHLOROPROPANE	0 / 25	0 : 0.16		0.0085	0.0125	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,2-TRANS-DICHLOROETHYLENE	0 / 24	0 : 0.16		0.009896	0.013194	0.13 U	0.16 U	0.12 U	0 U			0 U	0 U	0 U	0 U	0 U
1,3-CIS-DICHLOROPROPYLENE	0 / 25	0 : 0.16		0.0085	0.0125	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,3-DICHLOROBENZENE	1 / 26	0 : 0.16	0.002 - 0.002	0.009192	0.013278	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,3-TRANS-DICHLOROPROPYLENE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,4-DICHLOROBENZENE	1 / 26	0 : 0.16	0.005 - 0.005	0.009308	0.013444	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
1,4-DIOXANE	0 / 14	0.067 : 0.11		0.042036	0.042036											
2-CHLOROETHYL VINYL ETHER	0 / 4	0 : 0		0					0 U			0 U			0 U	0 U
2-HEXANONE	0 / 19	0 : 0.005		0.001289	0.00175					0 U	0 U	0 U	0 U		0 U	
ACETONE	16 / 25	0 : 0.93	0.011 - 45	3.0003	3.125313	0.93 U	12	0.86 U	0 U	11	0.063	1.8 E	3.1	45	0.58 E	0.27 E
ACROLEIN	0 / 19	0 : 1		0.035158	0.044533				0 U			0 U			0 U	0 U
ACRYLONITRILE	0 / 22	0 : 0.66		0.044205	0.054028	0.53 U	0.66 U	0.49 U	0 U			0 U			0 U	0 U
BENZENE	3 / 23	0 : 0.16	0.001 - 0.002	0.00923	0.012488	0.13 U	0.16 U	0.12 U	0 U			0 U	0 U	0 U	0 U	0 U
BROMOCHLOROMETHANE	0 / 17	0.001 : 0.16		0.0125	0.0125	0.13 U	0.16 U	0.12 U								
BROMOFORM	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CARBON DISULFIDE	2 / 20	0 : 0.05	0.001 - 0.004	0.001825	0.002433					0 U	0 U		0 U	0 U	0 U	
CARBON TETRACHLORIDE	1 / 26	0 : 0.16	0.001 - 0.001	0.009154	0.013222	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROBENZENE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLORODIBROMOMETHANE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROETHANE	0 / 26	0 : 0.33		0.020846	0.030111	0.27 U	0.33 U	0.25 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CHLOROFORM	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
CYCLOHEXANE	0 / 14	0.001 : 0.002		0.000536	0.000536											
CYCLOHEXANE, METHYL-	0 / 14	0.001 : 0.002		0.000536	0.000536											
DICHLOROBROMOMETHANE	0 / 25	0 : 0.16		0.0085	0.0125	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
DICHLORODIFLUOROMETHANE	0 / 15	0.002 : 0.1		0.004467	0.004467											
ETHYLBENZENE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
ISOPROPYLBENZENE	0 / 14	0.001 : 0.002		0.000536	0.000536											
M+P-XYLENE	1 / 14	0.001 : 0.002	0.002 - 0.002	0.000643	0.000643											
METHYL ACETATE	1 / 15	0.002 : 0.003	0.32 - 0.32	0.022467	0.022467											
METHYL BROMIDE	0 / 26	0 : 0.33		0.018923	0.027333	0.27 U	0.33 U	0.25 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL CHLORIDE	0 / 26	0 : 0.33		0.018923	0.027333	0.27 U	0.33 U	0.25 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL ETHYL KETONE	0 / 20	0 : 0.2		0.006625	0.008833					0 U	0 U		0 U	0 U	0 U	
METHYL ISOBUTYL KETONE	0 / 19	0 : 0.005		0.001289	0.00175					0 U	0 U	0 U	0 U		0 U	
METHYLENE CHLORIDE	1 / 26	0 : 0.33	0.009 - 0.009	0.019212	0.02775	0.27 U	0.33 U	0.25 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
METHYL-T-BUTYL ETHER	0 / 15	0.0005 : 0.025		0.00112	0.00112											
O-XYLENE	0 / 17	0.001 : 0.16		0.0125	0.0125	0.13 U	0.16 U	0.12 U								
STYRENE	0 / 19	0 : 0.05		0.001711	0.002167					0 U	0 U		0 U		0 U	
t-Butyl Alcohol	0 / 15	0.019 : 1		0.044533	0.044533											

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
TETRACHLOROETHYLENE	4 / 26	0 : 0.16	0.004 - 0.019	0.010723	0.012673	0.13 U	0.16 U	0.12 U	0 U	0 U	0.004 J	0.019	0 U	0 U	0.012	0.0063
TOLUENE	11 / 26	0 : 0.16	0.002 - 0.3	0.029581	0.030764	0.13 U	0.16 U	0.12 U	0.023	0.0061 J	0.013	0.059	0.074 J	0.014	0.033	0 U
TRICHLOROETHYLENE	0 / 25	0 : 0.16		0.0085	0.0125	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
TRICHLOROFLUOROMETHANE	0 / 20	0 : 0.1		0.00335	0.004467				0 U			0 U		0 U	0 U	0 U
VINYL CHLORIDE	0 / 26	0 : 0.16		0.009135	0.013194	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U	0 U
XYLENES,TOTAL	2 / 12	0 : 0.16	0.023 - 0.27	0.043583	0.087167	0.13 U	0.16 U	0.12 U	0 U	0 U	0 U	0 U	0.27	0 U	0.023	0 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE	0 / 14	0.019 : 0.094		0.033107	0.033107											
1,2,4-TRICHLOROBENZENE	0 / 2	0 : 0		0						0 U	0 U					
1,2-DICHLOROBENZENE	0 / 2	0 : 0		0						0 U	0 U					
1,2-DIPHENYLHYDRAZINE	0 / 6	0 : 0.041		0.012833	0.01925					0 U	0 U					
1,3-DICHLOROBENZENE	0 / 2	0 : 0		0						0 U	0 U					
1,4-DICHLOROBENZENE	0 / 2	0 : 0		0						0 U	0 U					
1,4-DIOXANE	0 / 14	0.11 : 0.56		0.088214	0.088214											
2,3,4,6-Tetrachlorophenol	0 / 14	0.073 : 0.38		0.059679	0.059679											
2,4,5-TRICHLOROPHENOL	0 / 18	0.019 : 0.094		0.034333	0.034333											
2,4,6-TRICHLOROPHENOL	0 / 18	0.019 : 0.094		0.020556	0.020556											
2,4-DICHLOROPHENOL	0 / 18	0.019 : 0.094		0.020556	0.020556											
2,4-DIMETHYLPHENOL	0 / 18	0.019 : 0.094		0.034333	0.034333											
2,4-DINITROPHENOL	1 / 18	0.33 : 1.7	0.42 - 0.42	0.315556	0.315556											
2,4-DINITROTOLUENE	0 / 20	0 : 0.38		0.0495	0.055					0 U	0 U					
2,6-DINITROTOLUENE	0 / 20	0 : 0.094		0.0185	0.020556					0 U	0 U					
2-CHLORONAPHTHALENE	0 / 16	0 : 0.04		0.013813	0.015786					0 U	0 U					
2-CHLOROPHENOL	0 / 18	0.019 : 0.094		0.020556	0.020556											
2-METHYL-4,6-DINITROPHENOL	0 / 18	0.17 : 0.94		0.137222	0.137222											
2-METHYLNAPHTHALENE	1 / 18	0.004 : 0.041	0.37 - 0.37	0.034556	0.034556											
2-NITROANILINE	0 / 20	0 : 0.094		0.0185	0.020556					0 U	0 U					
2-NITROPHENOL	0 / 14	0.019 : 0.094		0.020929	0.020929											
3,3-DICHLOROBENZIDINE	0 / 20	0 : 0.56		0.07325	0.081389					0 U	0 U					
3-NITROANILINE	0 / 16	0 : 0.38		0.052219	0.059679					0 U	0 U					
4-BROMOPHENYL PHENYL ETHER	0 / 16	0 : 0.094		0.018313	0.020929					0 U	0 U					
4-CHLORO-3-METHYLPHENOL	0 / 18	0.019 : 0.094		0.034333	0.034333											
4-CHLOROANILINE	0 / 14	0.019 : 0.094		0.033107	0.033107											
4-CHLOROPHENYL PHENYL ETHER	0 / 16	0 : 0.094		0.018313	0.020929					0 U	0 U					
4-NITROANILINE	0 / 16	0 : 0.38		0.052219	0.059679					0 U	0 U					
4-NITROPHENOL	0 / 14	0.18 : 0.94		0.148929	0.148929											
ACENAPHTHENE	0 / 20	0 : 0.041		0.0136	0.015111					0 U	0 U					
ACENAPHTHYLENE	1 / 20	0 : 0.041	0.045 - 0.045	0.0149	0.016556					0 U	0 U					
ACETOPHENONE	0 / 18	0.019 : 0.094		0.034333	0.034333											
ANTHRACENE	2 / 20	0 : 0.04	0.17 - 0.19	0.029625	0.032917					0 U	0 U					
ATRAZINE	0 / 14	0.037 : 0.19		0.029821	0.029821											
BENZALDEHYDE	0 / 18	0.07 : 0.38		0.055	0.055											
BENZIDINE	0 / 20	0 : 3.9		0.6855	0.761667					0 U	0 U					
BENZO(A)ANTHRACENE	5 / 20	0 : 0.041	0.009 - 1	0.11585	0.128722					0 U	0 U					
BENZO(A)PYRENE	6 / 20	0 : 0.041	0.011 - 1.4	0.147825	0.16425					0 U	0 U					
BENZO(B)FLUORANTHENE	7 / 20	0 : 0.041	0.018 - 2.4	0.241375	0.268194					0 U	0 U					
BENZO(GHI)PERYLENE	6 / 20	0 : 0.041	0.007 - 1.3	0.128975	0.143306					0 U	0 U					
BENZO(K)FLUORANTHENE	5 / 20	0 : 0.041	0.004 - 1.1	0.1103	0.122556					0 U	0 U					
BENZYL BUTYL PHTHALATE	0 / 20	0 : 0.38		0.0495	0.055					0 U	0 U					
Biphenyl	3 / 18	0.019 : 0.094	0.057 - 8	0.511139	0.511139											
BIS(2-CHLOROETHOXY) METHANE	0 / 16	0 : 0.094		0.018313	0.020929					0 U	0 U					
BIS(2-CHLOROETHYL) ETHER	0 / 20	0 : 0.094		0.0185	0.020556					0 U	0 U					
Bis(2-chloroisopropyl) ether	0 / 18	0.019 : 0.094		0.020583	0.020583											
BIS(2-CHLOROISOPROPYL)ETHER	0 / 16	0 : 0.094		0.018313	0.020929					0 U	0 U					

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
BIS(2-ETHYLHEXYL)PHTHALATE	7 / 20	0 : 0.38	0.094 - 14	0.9593	1.065889					0 U	0 U					
CAPROLACTAM	0 / 18	0.035 : 0.19		0.027472	0.027472											
CARBAZOLE	2 / 20	0 : 0.094	0.14 - 0.18	0.032525	0.036139					0 U	0 U					
CHRYSENE	9 / 20	0 : 0.041	0.005 - 1.9	0.220375	0.244861					0 U	0 U					
CRESOL,O	0 / 18	0.019 : 0.094		0.034333	0.034333											
CRESOL,P	0 / 18	0.019 : 0.094		0.034333	0.034333											
DIBENZO(A,H)ANTHRACENE	4 / 20	0 : 0.041	0.004 - 0.34	0.042275	0.046972					0 U	0 U					
DIBENZOFURAN	1 / 14	0.019 : 0.094	0.12 - 0.12	0.028071	0.028071											
DIETHYL PHTHALATE	0 / 20	0 : 0.38		0.0495	0.055					0 U	0 U					
DIMETHYL PHTHALATE	0 / 20	0 : 0.38		0.0495	0.055					0 U	0 U					
DI-N-BUTYL PHTHALATE	0 / 20	0 : 0.38		0.0495	0.055					0 U	0 U					
DI-N-OCTYL PHTHALATE	0 / 20	0 : 0.38		0.049525	0.055028					0 U	0 U					
FLUORANTHENE	9 / 20	0 : 0.04	0.005 - 2.1	0.2345	0.260556					0 U	0 U					
FLUORENE	3 / 20	0 : 0.04	0.039 - 0.051	0.017425	0.019361					0 U	0 U					
HEXACHLOROBENZENE	0 / 20	0 : 0.041		0.0136	0.015111					0 U	0 U					
HEXACHLOROBUTADIENE	0 / 20	0 : 0.094		0.0309	0.034333					0 U	0 U					
HEXACHLOROCYCLOPENTADIENE	0 / 20	0 : 0.94		0.1235	0.137222					0 U	0 U					
HEXACHLOROETHANE	0 / 20	0 : 0.19		0.024725	0.027472					0 U	0 U					
INDENO(1,2,3-CD)PYRENE	5 / 20	0 : 0.041	0.007 - 1.2	0.11655	0.1295					0 U	0 U					
ISOPHORONE	0 / 20	0 : 0.094		0.0185	0.020556					0 U	0 U					
NAPHTHALENE	2 / 20	0 : 0.041	0.048 - 0.2	0.024575	0.027306					0 U	0 U					
NITROBENZENE	0 / 20	0 : 0.094		0.0185	0.020556					0 U	0 U					
N-NITROSODIMETHYLAMINE	0 / 6	0 : 0.083		0.02575	0.038625					0 U	0 U					
N-NITROSODI-N-PROPYLAMINE	0 / 20	0 : 0.094		0.0185	0.020556					0 U	0 U					
N-NITROSODIPHENYLAMINE	0 / 20	0 : 0.094		0.0185	0.020556					0 U	0 U					
PENTACHLOROPHENOL	0 / 18	0.037 : 0.21		0.082639	0.082639											
PHENANTHRENE	6 / 20	0 : 0.04	0.004 - 1.3	0.1295	0.143889					0 U	0 U					
PHENOL	0 / 18	0.019 : 0.094		0.020556	0.020556											
PYRENE	9 / 20	0 : 0.04	0.005 - 2.1	0.24045	0.267167					0 U	0 U					
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)	0 / 5	0.004 : 0.0045		0.00212	0.00212											
PCB-1221 (AROCLOR 1221)	0 / 5	0.0052 : 0.0057		0.0027	0.0027											
PCB-1232 (AROCLOR 1232)	0 / 5	0.009 : 0.01		0.0047	0.0047											
PCB-1242 (AROCLOR 1242)	0 / 5	0.0037 : 0.0041		0.00194	0.00194											
PCB-1248 (AROCLOR 1248)	2 / 5	0.0037 : 0.0041	0.0085 - 0.016	0.00609	0.00609											
PCB-1254 (AROCLOR 1254)	1 / 5	0.0037 : 0.0041	0.011 - 0.011	0.00376	0.00376											
PCB-1260 (AROCLOR 1260)	3 / 5	0.0055 : 0.0061	0.0094 - 0.025	0.01064	0.01064											
Inorganics (mg/Kg)																
ALUMINUM	13 / 13		2560 - 20600	8184.615	8184.615											
ANTIMONY	1 / 14	0 : 2.4	2 - 2	0.547786	0.589923							0 U				
ARSENIC	14 / 14		1.3 - 7.39	3.162143	3.162143							3.1				
BARIUM	13 / 13		8.34 - 50.9	24.54923	24.54923											
BERYLLIUM	13 / 14	0 : 0	0.122 - 0.687	0.324071	0.349							0 U				
CADMIUM	12 / 14	0 : 0.165	0.226 - 0.988	0.456464	0.491577							0 U				
CALCIUM	12 / 12		51.7 - 73500	10361.64	10361.64											
CHROMIUM	14 / 14		6.67 - 37.9	14.50286	14.50286							9.3				
COBALT	13 / 13		0.402 - 6.63	2.278923	2.278923											
COPPER	14 / 14		2.22 - 540	102.3429	102.3429							16				
IRON	13 / 13		4590 - 34300	12367.69	12367.69											
LEAD	14 / 14		5.74 - 140	31.46429	31.46429							20				
MAGNESIUM	9 / 9		95.9 - 1420	558.1	558.1											
MANGANESE	13 / 13		16.3 - 275	67.13846	67.13846											
MERCURY	6 / 14	0 : 0.0129	0.0092 - 0.787	0.11775	0.126808							0 U				
NICKEL	14 / 14		1.06 - 20.2	7.155714	7.155714							6.5				

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	RDSB1 RDSB1-092503-0.5 9/25/2003 0.25-0.75 ft	RDSB1 RDSB1-092503-2.5 9/25/2003 1.5-3.5 ft	RDSB2 RDSB2-092403-0.5 9/24/2003 0.25-0.75 ft	SB3-8 SB3-8-110592-1-2 11/5/1992 1-2 ft	SB4-10 SB4-10-110592-1-1.5 11/5/1992 1-1.5 ft	SB4-11 SB4-11-110592-1-2 11/5/1992 1-2 ft	SBBG SBBG-110492-0.5-1 11/4/1992 0.5-1 ft	SBR16 SBR16-110692-0.5-1.5 11/6/1992 0.5-1.5 ft	SBR17 SBR17-110692-0.5-1 11/6/1992 0.5-1 ft	SBR18 SBR18-110492-1.5-2 11/4/1992 1.5-2 ft	SBR19 SBR19-110692-0.5-1.5 11/6/1992 0.5-1.5 ft
POTASSIUM	13 / 13		238 - 1080	476	476											
SELENIUM	0 / 14	0 : 1.19		0.403107	0.434115							0 U				
SILVER	4 / 14	0 : 0.212	0.139 - 0.285	0.102432	0.110312							0 U				
SODIUM	12 / 13	44 : 44	10.1 - 683	158.3615	158.3615											
THALLIUM	7 / 14	0 : 1.71	0.555 - 2.39	0.819464	0.8825							0 U				
VANADIUM	13 / 13		14.4 - 43.7	22.33846	22.33846											
ZINC	14 / 14		12.5 - 711	215.8786	215.8786							74				
Moisture	23 / 23		4.6 - 21.3	13.59565	13.59565	11.7	21.3	6.6								
PH	15 / 15		4.63 - 12	7.698	7.698				12			5.4	10	10	5.6	11
TOC/Solids/Sludges/Combustion	3 / 3		196 - 13500	4998.667	4998.667											

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft
Volatile Organics (mg/Kg)																
1,1,1,2-TETRACHLOROETHANE																
1,1,1-TRICHLOROETHANE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1,2,2-TETRACHLOROETHANE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE						0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
1,1,2-TRICHLOROETHANE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1-DICHLOROETHANE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,1-DICHLOROETHYLENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2,3-TRICHLOROBENZENE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2,4-TRICHLOROBENZENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-CIS-DICHLOROETHYLENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DIBROMO-3-CHLOROPROPANE				0.1 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
1,2-DIBROMOETHANE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DICHLOROBENZENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DICHLOROETHANE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,2-TRANS-DICHLOROETHYLENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,3-CIS-DICHLOROPROPYLENE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,3-DICHLOROBENZENE				0.05 U		0.001 U		0.001 U		0.001 U		0.002		0.001 U		0.001 U
1,3-TRANS-DICHLOROPROPYLENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
1,4-DICHLOROBENZENE				0.05 U		0.001 U		0.001 U		0.001 U		0.005		0.001 U		0.001 U
1,4-DIOXANE						0.073 U		0.072 U		0.072 U		0.067 U		0.078 U		0.079 U
2-CHLOROETHYL VINYL ETHER																
2-HEXANONE						0.003 U		0.003 U		0.003 U		0.003 U		0.003 U		0.003 U
ACETONE						0.007 U		0.007 U		0.007 U		0.016		0.011		0.008 U
ACROLEIN				1 U		0.021 U		0.021 U		0.021 U		0.019 U		0.022 U		0.022 U
ACRYLONITRILE				0.2 U		0.004 U		0.004 U		0.004 U		0.004 U		0.004 U		0.004 U
BENZENE						0.0005 U		0.0005 U		0.0005 U		0.0005 U		0.001		0.0006 U
BROMOCHLOROMETHANE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
BROMOFORM				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CARBON DISULFIDE				0.05 U		0.001 U		0.001 U		0.001 U		0.001		0.001 U		0.001 U
CARBON TETRACHLORIDE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CHLOROBENZENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CHLORODIBROMOMETHANE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CHLOROETHANE				0.2 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
CHLOROFORM				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CYCLOHEXANE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
CYCLOHEXANE, METHYL-						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
DICHLOROBROMOMETHANE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
DICHLORODIFLUOROMETHANE				0.1 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
ETHYLBENZENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
ISOPROPYLBENZENE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
M+P-XYLENE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
METHYL ACETATE				0.32		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
METHYL BROMIDE				0.1 UJ		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
METHYL CHLORIDE				0.1 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
METHYL ETHYL KETONE				0.2 U		0.004 U		0.004 U		0.004 U		0.004 U		0.004 U		0.004 U
METHYL ISOBUTYL KETONE						0.003 U		0.003 U		0.003 U		0.003 U		0.003 U		0.003 U
METHYLENE CHLORIDE				0.1 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
METHYL-T-BUTYL ETHER				0.025 U		0.0005 U		0.0005 U		0.0005 U		0.0005 U		0.0006 U		0.0006 U
O-XYLENE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
STYRENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
t-Butyl Alcohol				1 U		0.021 U		0.021 U		0.021 U		0.019 U		0.022 U		0.022 U

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft
TETRACHLOROETHYLENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
TOLUENE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
TRICHLOROETHYLENE						0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
TRICHLOROFLUOROMETHANE				0.1 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U		0.002 U
VINYL CHLORIDE				0.05 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U		0.001 U
XYLENES,TOTAL				0.05 U												
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE					0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE	0.035 U	0.041 U	0.04 U	0.038 U												
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE					0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
2,3,4,6-Tetrachlorophenol					0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
2,4,5-TRICHLOROPHENOL	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
2,4,6-TRICHLOROPHENOL	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
2,4-DICHLOROPHENOL	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
2,4-DIMETHYLPHENOL	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
2,4-DINITROPHENOL	0.7 UJ	0.83 UJ	0.79 UJ	0.77 UJ	0.37 U		0.37 U		0.37 U		0.38 U		0.37 U		0.37 U	
2,4-DINITROTOLUENE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
2,6-DINITROTOLUENE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
2-CHLORONAPHTHALENE					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
2-CHLOROPHENOL	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
2-METHYL-4,6-DINITROPHENOL	0.17 UJ	0.21 UJ	0.2 UJ	0.19 UJ	0.19 U		0.18 U		0.19 U		0.19 U		0.18 U		0.19 U	
2-METHYLNAPHTHALENE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
2-NITROANILINE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
2-NITROPHENOL					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
3,3-DICHLOROBENZIDINE	0.1 U	0.12 U	0.12 U	0.12 U	0.11 U		0.11 U		0.11 U		0.11 U		0.11 U		0.11 U	
3-NITROANILINE					0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
4-BROMOPHENYL PHENYL ETHER					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
4-CHLORO-3-METHYLPHENOL	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
4-CHLOROANILINE					0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
4-CHLOROPHENYL PHENYL ETHER					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
4-NITROANILINE					0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
4-NITROPHENOL					0.19 U		0.18 U		0.19 U		0.19 U		0.18 U		0.19 U	
ACENAPHTHENE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
ACENAPHTHYLENE	0.035 U	0.041 U	0.04 U	0.045	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
ACETOPHENONE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
ANTHRACENE	0.035 U	0.19	0.04 U	0.17	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
ATRAZINE					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
BENZALDEHYDE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
BENZIDINE	1.2 UJ	1.4 UJ	1.4 UJ	1.3 UJ	1.3 U		1.3 U		1.3 U		1.3 U		1.3 U		1.3 U	
BENZO(A)ANTHRACENE	0.035 U	0.96	0.04 U	1	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.045	
BENZO(A)PYRENE	0.069	1.1	0.04 U	1.4	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.041	
BENZO(B)FLUORANTHENE	0.11	1.8	0.05	2.4	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.074	
BENZO(GHI)PERYLENE	0.07	0.86	0.04 U	1.3	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037	
BENZO(K)FLUORANTHENE	0.038	0.75	0.04 U	1.1	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
BENZYL BUTYL PHTHALATE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
Biphenyl	0.057	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		8		0.037 U		0.037 U	
BIS(2-CHLOROETHOXY) METHANE					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
BIS(2-CHLOROETHYL) ETHER	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
Bis(2-chloroisopropyl) ether	0.035 UJ	0.041 UJ	0.04 UJ	0.038 UJ	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
BIS(2-CHLOROISOPROPYL)ETHER					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft
BIS(2-ETHYLHEXYL)PHTHALATE	0.26	1	0.079 U	0.31	0.075 U		0.074 U		0.075 U		0.099		0.073 U		0.074 U	
CAPROLACTAM	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
CARBAZOLE	0.035 U	0.18	0.04 U	0.14	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
CHRYSENE	0.13	1.9	0.04	1.6	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.065	
CRESOL,O	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
CRESOL,P	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
DIBENZO(A,H)ANTHRACENE	0.035 U	0.24	0.04 U	0.34	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
DIBENZOFURAN					0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
DIETHYL PHTHALATE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
DIMETHYL PHTHALATE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
DI-N-BUTYL PHTHALATE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
DI-N-OCTYL PHTHALATE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
FLUORANTHENE	0.05	2.1	0.059	2	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.09	
FLUORENE	0.035 U	0.046	0.04 U	0.039	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
HEXACHLOROBENZENE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
HEXACHLOROBUTADIENE	0.07 U	0.083 U	0.079 U	0.077 U	0.075 U		0.074 U		0.075 U		0.076 U		0.073 U		0.074 U	
HEXACHLOROCYCLOPENTADIENE	0.17 U	0.21 U	0.2 U	0.19 U	0.19 U		0.18 U		0.19 U		0.19 U		0.18 U		0.19 U	
HEXACHLOROETHANE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
INDENO(1,2,3-CD)PYRENE	0.06	0.78	0.04 U	1.2	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
ISOPHORONE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
NAPHTHALENE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.2		0.037 U		0.037 U	
NITROBENZENE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
N-NITROSODIMETHYLAMINE	0.07 U	0.083 U	0.079 U	0.077 U												
N-NITROSODI-N-PROPYLAMINE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
N-NITROSODIPHENYLAMINE	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
PENTACHLOROPHENOL	0.17 U	0.21 U	0.2 U	0.19 U	0.19 U		0.18 U		0.19 U		0.19 U		0.18 U		0.19 U	
PHENANTHRENE	0.035 U	1.3	0.04 U	0.84	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
PHENOL	0.035 U	0.041 U	0.04 U	0.038 U	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.037 U	
PYRENE	0.057 J	2.1 J	0.055 J	1.9 J	0.037 U		0.037 U		0.037 U		0.038 U		0.037 U		0.069	
PCBs (mg/Kg)																
PCB-1016 (AROCLOR 1016)																
PCB-1221 (AROCLOR 1221)																
PCB-1232 (AROCLOR 1232)																
PCB-1242 (AROCLOR 1242)																
PCB-1248 (AROCLOR 1248)																
PCB-1254 (AROCLOR 1254)																
PCB-1260 (AROCLOR 1260)																
Inorganics (mg/Kg)																
ALUMINUM	8400	7570	8860	8110	16700		20600		4750		11200		2830		3720	
ANTIMONY	2	2.4 U	1.18 U	1.12 U	0.732 U		0.723 U		0.73 U		0.735 U		0.715 U		0.729 U	
ARSENIC	2.25	4.81	1.3 J	1.85 J	2.92		2.55		3.36		3.25		3.2		2.94	
BARIUM	31.7	45.4	26.3 J	26.1	23		50.9		24.8		21.2		8.34		11.8	
BERYLLIUM	0.266 J	0.322 J	0.191 J	0.366 J	0.337		0.687		0.35		0.245		0.172		0.168	
CADMIUM	0.861	0.988	0.165 U	0.96	0.509		0.226		0.246		0.381		0.332		0.301	
CALCIUM	27200	73500		3060	225		135		51.7		1870		5050		162	
CHROMIUM	27.4 J	37.9 J	7.05 J	9.13 J	11.9		7.32		6.67		12		15.1		9.27	
COBALT	5.27	6.63	0.402 J	4.93	2.08		2.71		0.648		1.9		0.494		0.645	
COPPER	309	540	4.55 J	240	5.96		2.22		4.07		22.8		7.4		16.1	
IRON	17300	34300	4590 J	13900	10900		12800		8430		6630		10500		8770	
LEAD	76.5	140	8.88 J	55.6	8.05		5.74		7.34		18.3		6.69		11.3	
MAGNESIUM					772		324		95.9		1160		346		191	
MANGANESE	151 J	275 J	16.3 J	87.6 J	44.7		74.7		17.9		41.3		26.8		16.3	
MERCURY	0.741	0.787	0.0188 J	0.0129 U	0.0079 U		0.0075 U		0.0079 U		0.0076 U		0.0075 U		0.0092	
NICKEL	20.2	19.9	4.43	8.75	8.55		4.34		1.52		6.14		1.06		1.74	

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-17 SRI-SS-17-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-18 SRI-SS-18-Surface-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-19 SRI-SS-19-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-20 SRI-SS-20-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-21 SRI-SS-21-0-24-071111 7/11/2011 0-2 ft	SRI-SS-21 SRI-SS-21-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-22 SRI-SS-22-0-24-071111 7/11/2011 0-2 ft	SRI-SS-22 SRI-SS-22-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-23 SRI-SS-23-0-24-071111 7/11/2011 0-2 ft	SRI-SS-23 SRI-SS-23-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-24 SRI-SS-24-0-24-071111 7/11/2011 0-2 ft	SRI-SS-24 SRI-SS-24-12-18-071111 7/11/2011 1-1.5 ft	SRI-SS-25 SRI-SS-25-0-24-071111 7/11/2011 0-2 ft	SRI-SS-25 SRI-SS-25-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-26 SRI-SS-26-0-24-071111 7/11/2011 0-2 ft	SRI-SS-26 SRI-SS-26-0-6-071111 7/11/2011 0-0.5 ft
POTASSIUM	518 J	523 J	415 J	342 J	503		290		417		812		334		323	
SELENIUM	0.997 U	1.19 U	1.16 U	1.1 U	0.754 U		0.745 U		0.752 U		0.757 U		0.737 U		0.751 U	
SILVER	0.183 U	0.285 J	0.212 U	0.273 J	0.092 U		0.0909 U		0.0918 U		0.0924 U		0.0899 U		0.0916 U	
SODIUM	683	319	44 U	583	74		21.9		10.1		81		34.3		22	
THALLIUM	1.48 U	2.39 J	1.71 U	1.77 J	0.797		1.05		0.398 U		0.401 U		0.825		0.555	
VANADIUM	43.7	25.4	15.1 J	25	15.7		17.6		18		23.4		27.5		19.4	
ZINC	616 J	711 J	12.5 J	573 J	181		13.9		15.7		212		74.7		41.9	
Moisture	4.6	19.3	16.1	13.2	10.7		10.5		11.4		12.8		10.4		11.2	
PH					6.11		5.94		4.63		8.28		8.6		4.72	
TOC/Solids/Sludges/Combustion							196		1300							

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft
Volatile Organics (mg/Kg)													
1,1,1,2-TETRACHLOROETHANE													
1,1,1-TRICHLOROETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,1,2,2-TETRACHLOROETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 UJ	0.001 U	0.001 U	0.001 U		
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U		
1,1,2-TRICHLOROETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,1-DICHLOROETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,1-DICHLOROETHYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,2,3-TRICHLOROBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 UJ	0.001	0.001 U	0.001 U		
1,2,4-TRICHLOROBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 J	0.002	0.001 U	0.001 U		
1,2-CIS-DICHLOROETHYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,2-DIBROMO-3-CHLOROPROPANE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 UJ	0.003 U	0.003 U	0.003 U		
1,2-DIBROMOETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,2-DICHLOROBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 UJ	0.005	0.001 U	0.001 U		
1,2-DICHLOROETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,2-DICHLOROETHYLENE													
1,2-DICHLOROPROPANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,2-TRANS-DICHLOROETHYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,3-CIS-DICHLOROPROPYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,3-DICHLOROBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 UJ	0.001 U	0.001 U	0.001 U		
1,3-TRANS-DICHLOROPROPYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
1,4-DICHLOROBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 UJ	0.001 U	0.001 U	0.001 U		
1,4-DIOXANE		0.094 U		0.095 U		0.078 U	0.081 U	0.11 U	0.099 U	0.091 U	0.088 U		
2-CHLOROETHYL VINYL ETHER													
2-HEXANONE		0.004 U		0.004 U		0.003 U	0.003 U	0.005 U	0.004 U	0.004 U	0.004 U		
ACETONE		0.032		0.03		0.008 U	0.008 U	0.038	0.058	0.036	0.056		
ACROLEIN		0.027 U		0.027 U		0.022 U	0.023 U	0.032 U	0.028 U	0.026 U	0.025 U		
ACRYLONITRILE		0.005 U		0.005 U		0.004 U	0.005 U	0.006 U	0.006 U	0.005 U	0.005 U		
BENZENE		0.001		0.0007 U		0.0006 U	0.0006 U	0.0008 U	0.002	0.0007 U	0.0006 U		
BROMOCHLOROMETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
BROMOFORM		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
CARBON DISULFIDE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.004	0.001 U	0.001 U		
CARBON TETRACHLORIDE		0.001 U		0.001 U		0.001	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
CHLOROBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
CHLORODIBROMOMETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
CHLOROETHANE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U		
CHLOROFORM		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
CYCLOHEXANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
CYCLOHEXANE, METHYL-		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
DICHLOROBROMOMETHANE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
DICHLORODIFLUOROMETHANE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U		
ETHYLBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
ISOPROPYLBENZENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
M+P-XYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.002	0.001 U	0.001 U		
METHYL ACETATE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U		
METHYL BROMIDE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U		
METHYL CHLORIDE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U		
METHYL ETHYL KETONE		0.005 U		0.005 U		0.004 U	0.005 U	0.006 U	0.006 U	0.005 U	0.005 U		
METHYL ISOBUTYL KETONE		0.004 U		0.004 U		0.003 U	0.003 U	0.005 U	0.004 U	0.004 U	0.004 U		
METHYLENE CHLORIDE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.009	0.003 U		
METHYL-T-BUTYL ETHER		0.0007 U		0.0007 U		0.0006 U	0.0006 U	0.0008 U	0.0007 U	0.0007 U	0.0006 U		
O-XYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
STYRENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
t-Butyl Alcohol		0.027 U		0.027 U		0.022 U	0.023 U	0.032 U	0.028 U	0.026 U	0.025 U		

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft
TETRACHLOROETHYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
TOLUENE		0.001 U		0.002		0.001 U	0.001 U	0.007	0.003	0.3	0.001 U		
TRICHLOROETHYLENE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
TRICHLOROFLUOROMETHANE		0.003 U		0.003 U		0.002 U	0.002 U	0.003 U	0.003 U	0.003 U	0.003 U		
VINYL CHLORIDE		0.001 U		0.001 U		0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U		
XYLENES,TOTAL													
Semivolatile Organics (mg/Kg)													
1,2,4,5-TETRACHLOROBENZENE	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
1,2,4-TRICHLOROBENZENE													
1,2-DICHLOROBENZENE													
1,2-DIPHENYLHYDRAZINE													
1,3-DICHLOROBENZENE													
1,4-DICHLOROBENZENE													
1,4-DIOXANE	0.12 U		0.11 U		0.12 U		0.56 U	0.56 U	0.11 U	0.11 U	0.12 U		
2,3,4,6-Tetrachlorophenol	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
2,4,5-TRICHLOROPHENOL	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
2,4,6-TRICHLOROPHENOL	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
2,4-DICHLOROPHENOL	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
2,4-DIMETHYLPHENOL	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
2,4-DINITROPHENOL	0.42		0.37 U		0.4 U		1.7 U	1.7 U	0.34 U	0.33 U	0.36 U		
2,4-DINITROTOLUENE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
2,6-DINITROTOLUENE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
2-CHLORONAPHTHALENE	0.04 U		0.037 U		0.04 U		0.039 U	0.039 U	0.008 U	0.008 U	0.008 U		
2-CHLOROPHENOL	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
2-METHYL-4,6-DINITROPHENOL	0.2 U		0.19 U		0.2 U		0.94 U	0.94 U	0.19 U	0.19 U	0.2 U		
2-METHYLNAPHTHALENE	0.37		0.037 U		0.04 U		0.019 U	0.019 U	0.004 U	0.004 U	0.004 U		
2-NITROANILINE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
2-NITROPHENOL	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
3,3-DICHLOROBENZIDINE	0.12 U		0.11 U		0.12 U		0.56 U	0.56 U	0.11 U	0.11 U	0.12 U		
3-NITROANILINE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
4-BROMOPHENYL PHENYL ETHER	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
4-CHLORO-3-METHYLPHENOL	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
4-CHLOROANILINE	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
4-CHLOROPHENYL PHENYL ETHER	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
4-NITROANILINE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
4-NITROPHENOL	0.2 U		0.19 U		0.2 U		0.94 U	0.94 U	0.19 U	0.19 U	0.2 U		
ACENAPHTHENE	0.04 U		0.037 U		0.04 U		0.019 U	0.019 U	0.004 U	0.004 U	0.004 U		
ACENAPHTHYLENE	0.04 U		0.037 U		0.04 U		0.019 U	0.019 U	0.004 U	0.004 U	0.004 U		
ACETOPHENONE	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
ANTHRACENE	0.04 U		0.037 U		0.04 U		0.019 U	0.019 U	0.004 U	0.004 U	0.004 U		
ATRAZINE	0.04 U		0.037 U		0.04 U		0.19 U	0.19 U	0.038 U	0.037 U	0.04 U		
BENZALDEHYDE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
BENZIDINE	1.4 U		1.3 U		1.4 U		3.9 U	3.9 U	0.8 U	0.78 U	0.84 U		
BENZO(A)ANTHRACENE	0.04 U		0.037 U		0.041 U		0.019 U	0.1	0.004 U	0.009	0.004 U		
BENZO(A)PYRENE	0.04 U		0.037 U		0.041 U		0.019 U	0.15	0.004 U	0.011	0.004 U		
BENZO(B)FLUORANTHENE	0.04 U		0.037 U		0.041 U		0.019 U	0.21	0.004 U	0.018	0.004 U		
BENZO(GHI)PERYLENE	0.04 U		0.037 U		0.041 U		0.019 U	0.12	0.004 U	0.007	0.004 U		
BENZO(K)FLUORANTHENE	0.04 U		0.037 U		0.041 U		0.019 U	0.11	0.004 U	0.004	0.004 U		
BENZYL BUTYL PHTHALATE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
Biphenyl	0.83		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
BIS(2-CHLOROETHOXY) METHANE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
BIS(2-CHLOROETHYL) ETHER	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
Bis(2-chloroisopropyl) ether	0.04 U		0.037 U		0.041 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
BIS(2-CHLOROISOPROPYL)ETHER	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft
BIS(2-ETHYLHEXYL)PHTHALATE	14		0.075 U		0.081 U		0.38 U	0.38 U	0.094	2.7	0.08 U		
CAPROLACTAM	0.04 U		0.037 U		0.04 U		0.19 U	0.19 U	0.038 U	0.037 U	0.04 U		
CARBAZOLE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
CHRYSENE	0.14		0.037 U		0.041 U		0.019 U	0.37	0.005	0.014	0.004 U		
CRESOL,O	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
CRESOL,P	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
DIBENZO(A,H)ANTHRACENE	0.04 U		0.037 U		0.041 U		0.019 U	0.04	0.004 U	0.004	0.004 U		
DIBENZOFURAN	0.12		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
DIETHYL PHTHALATE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
DIMETHYL PHTHALATE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
DI-N-BUTYL PHTHALATE	0.079 U		0.075 U		0.08 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
DI-N-OCTYL PHTHALATE	0.079 U		0.075 U		0.081 U		0.38 U	0.38 U	0.076 U	0.074 U	0.08 U		
FLUORANTHENE	0.04		0.037 U		0.04 U		0.019 U	0.19	0.005	0.013	0.004 U		
FLUORENE	0.051		0.037 U		0.04 U		0.019 U	0.019 U	0.004 U	0.004 U	0.004 U		
HEXACHLOROBENZENE	0.04 U		0.037 U		0.04 U		0.019 U	0.019 U	0.004 U	0.004 U	0.004 U		
HEXACHLOROBUTADIENE	0.079 U		0.075 U		0.08 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
HEXACHLOROCYCLOPENTADIENE	0.2 U		0.19 U		0.2 U		0.94 U	0.94 U	0.19 U	0.19 U	0.2 U		
HEXACHLOROETHANE	0.04 U		0.037 U		0.04 U		0.19 U	0.19 U	0.038 U	0.037 U	0.04 U		
INDENO(1,2,3-CD)PYRENE	0.04 U		0.037 U		0.041 U		0.019 U	0.08	0.004 U	0.007	0.004 U		
ISOPHORONE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
NAPHTHALENE	0.04 U		0.037 U		0.04 U		0.019 U	0.048	0.004 U	0.004 U	0.004 U		
NITROBENZENE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
N-NITROSODIMETHYLAMINE													
N-NITROSODI-N-PROPYLAMINE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
N-NITROSODIPHENYLAMINE	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
PENTACHLOROPHENOL	0.2 U		0.19 U		0.2 U		0.19 U	0.19 U	0.038 U	0.037 U	0.04 U		
PHENANTHRENE	0.16		0.037 U		0.04 U		0.019 U	0.081	0.004	0.006	0.004 U		
PHENOL	0.04 U		0.037 U		0.04 U		0.094 U	0.094 U	0.019 U	0.019 U	0.02 U		
PYRENE	0.098		0.037 U		0.04 U		0.019 U	0.37	0.005	0.012	0.004 U		
PCBs (mg/Kg)													
PCB-1016 (AROCLOR 1016)							0.0041 U	0.004 U	0.0041 U			0.0045 U	0.0045 U
PCB-1221 (AROCLOR 1221)							0.0052 U	0.0052 U	0.0052 U			0.0057 U	0.0057 U
PCB-1232 (AROCLOR 1232)							0.009 U	0.009 U	0.0091 U			0.01 U	0.0099 U
PCB-1242 (AROCLOR 1242)							0.0037 U	0.0037 U	0.0038 U			0.0041 U	0.0041 U
PCB-1248 (AROCLOR 1248)							0.0037 U	0.0085	0.016 J			0.0041 U	0.0041 U
PCB-1254 (AROCLOR 1254)							0.0037 U	0.0037 U	0.011 J			0.0041 U	0.0041 U
PCB-1260 (AROCLOR 1260)							0.025 J	0.0055 U	0.013			0.0061 U	0.0094
Inorganics (mg/Kg)													
ALUMINUM	7800		3300		2560								
ANTIMONY	0.767 U		0.719 U		0.788 U								
ARSENIC	7.39		2.68		2.67								
BARIUM	23.5		15.7		10.4								
BERYLLIUM	0.628		0.683		0.122								
CADMIUM	0.651		0.227		0.626								
CALCIUM	9070		3400		616								
CHROMIUM	20.7		19.2		10.1								
COBALT	2.18		0.775		0.962								
COPPER	92.4		60.3		112								
IRON	20400		5190		7070								
LEAD	28.2		24.1		29.8								
MAGNESIUM	1420		253		461								
MANGANESE	69.8		26.3		25.1								
MERCURY	0.0407		0.0077 U		0.0223								
NICKEL	11.2		2.52		3.33								

Table A-4
Summary of Analytical Results in Area 2 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-34 SRI-SS-34-0-24-071111 7/11/2011 0-2 ft	SRI-SS-34 SRI-SS-34-0-6-071111 7/11/2011 0-0.5 ft	SRI-SS-39 SRI-SS-39-0-24-071211 7/12/2011 0-2 ft	SRI-SS-39 SRI-SS-39-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-42 SRI-SS-42-A-092512 9/25/2012 0-0.5 ft	SRI-SS-43 SRI-SS-43-A-092512 9/25/2012 0-0.5 ft	SRI-SS-45 SRI-SS-45-A-092612 9/26/2012 0-0.5 ft	SRI-SS-46 SRI-SS-46-A-092612 9/26/2012 0-0.5 ft	SRI-SS-47 SRI-SS-47-D-092612 9/26/2012 1.5-2 ft	SRI-SS-53 SRI-SS-53-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft
POTASSIUM	1080		393		238								
SELENIUM	0.791 U		0.741 U		0.812 U								
SILVER	0.0965 U		0.217		0.139								
SODIUM	113		31.3		64.1								
THALLIUM	1.68		0.392 U		0.43 U								
VANADIUM	29.1		14.4		16.1								
ZINC	126		43.6		327								
Moisture	16.5		10.9		17.9		11.3	11.3	13.8	11.7	17.7	21.1	20.7
PH	7.79		9.09		6.31								
TOC/Solids/Sludges/Combustion			13500										

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated

Prepared by / Date: KJC 05/01/14
Checked by / Date: MJM 8/15/14

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	SB4-9 SB4-9-110492-1-1.5 11/4/1992 1-1.5 ft	SB4-9 SB4-9-110492-3.5-4 11/4/1992 3.5-4 ft	SB4-9 SB4-9-110492-7-7.5 11/4/1992 7-7.5 ft	SRI-SS-1 SRI-SS-1-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-1 SRI-SS-1-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-10 SRI-SS-10-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-10 SRI-SS-10-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-11 SRI-SS-11-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-11 SRI-SS-11-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-12 SRI-SS-12-0-0.5-7-8-09 7/8/2009 0-0.5 ft
Volatile Organics (mg/Kg)															
1,1,1-TRICHLOROETHANE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,1,2,2-TETRACHLOROETHANE	2 / 37	0 : 0.063	0.001 - 0.009	0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0 / 12	0.002 : 0.13		0.01											
1,1,2-TRICHLOROETHANE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,1-DICHLOROETHANE	0 / 36	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,1-DICHLOROETHYLENE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,2,3-TRICHLOROBENZENE	0 / 12	0.001 : 0.063		0.00											
1,2,4-TRICHLOROBENZENE	1 / 33	0.001 : 0.063	0.019 - 0.019	0.01							0.001 U	0.001 U	0.001 U	0.001 U	
1,2-CIS-DICHLOROETHYLENE	0 / 33	0.001 : 0.063		0.01							0.001 U	0.001 U	0.001 U	0.001 U	
1,2-DIBROMO-3-CHLOROPROPANE	0 / 33	0.002 : 0.13		0.01							0.002 U	0.002 U	0.002 U	0.002 U	
1,2-DIBROMOETHANE	0 / 33	0.001 : 0.063		0.01							0.001 U	0.001 U	0.001 U	0.001 U	
1,2-DICHLOROBENZENE	1 / 36	0 : 0.063	0.027 - 0.027	0.01		0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,2-DICHLOROETHANE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,2-DICHLOROETHYLENE	0 / 4	0 : 0			0 U	0 U	0 U	0 U							
1,2-DICHLOROPROPANE	0 / 36	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,2-TRANS-DICHLOROETHYLENE	0 / 36	0 : 0.063		0.01		0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,3-CIS-DICHLOROPROPYLENE	0 / 36	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,3-DICHLOROBENZENE	1 / 36	0 : 0.063	0.036 - 0.036	0.01		0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,3-TRANS-DICHLOROPROPYLENE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,4-DICHLOROBENZENE	1 / 36	0 : 0.063	0.22 - 0.22	0.01		0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
1,4-DIOXANE	0 / 12	0.076 : 4.4		0.22											
2-CHLOROETHYL VINYL ETHER	0 / 3	0 : 0				0 U	0 U	0 U							
2-HEXANONE	0 / 16	0 : 0.19		0.01	0 U	0 U	0 U	0 U							
ACETONE	18 / 40	0 : 0.44	0.012 - 14	0.86	0 U	1.4 E	0.29 E	0 U			0.019 U	0.011 U	0.008 U	0.017 U	
ACROLEIN	0 / 36	0 : 1.3		0.11		0 U	0 U	0 U			0.023 UJ	0.022 UJ	0.023 UJ	0.021 UJ	
ACRYLONITRILE	0 / 36	0 : 0.25		0.02		0 U	0 U	0 U			0.005 U	0.004 U	0.005 U	0.004 U	
BENZENE	2 / 36	0 : 0.032	0.0007 - 0.009	0.00	0 U	0 U	0 U	0 U			0.0006 U	0.0006 U	0.0006 U	0.0005 U	
BROMOCHLOROMETHANE	0 / 12	0.001 : 0.063		0.00											
BROMOFORM	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
CARBON DISULFIDE	1 / 36	0 : 0.063	0.003 - 0.003	0.01	0 U			0 U			0.001 U	0.001 U	0.001 U	0.001 U	
CARBON TETRACHLORIDE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
CHLOROBENZENE	3 / 37	0 : 0.063	0.002 - 3.2	0.10	0 U	0 U	0 U	0 U			0.001 U	0.006	0.001 U	0.002	
CHLORODIBROMOMETHANE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
CHLOROETHANE	0 / 37	0 : 0.25		0.02	0 U	0 U	0 U	0 U			0.002 U	0.002 U	0.002 U	0.002 U	
CHLOROFORM	1 / 37	0 : 0.063	0.001 - 0.001	0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
CYCLOHEXANE	1 / 12	0.001 : 0.002	0.11 - 0.11	0.01											
CYCLOHEXANE, METHYL-	1 / 12	0.001 : 0.002	0.59 - 0.59	0.05											
DICHLOROBROMOMETHANE	0 / 36	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
DICHLORODIFLUOROMETHANE	0 / 33	0.002 : 0.13		0.01							0.002 U	0.002 U	0.002 U	0.002 U	
ETHYLBENZENE	2 / 37	0 : 0.061	0.3 - 0.43	0.03	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
ISOPROPYLBENZENE	1 / 12	0.001 : 0.002	0.61 - 0.61	0.05											
M+P-XYLENE	1 / 12	0.001 : 0.002	0.44 - 0.44	0.04											
METHYL ACETATE	1 / 33	0.002 : 0.12	0.17 - 0.17	0.01							0.002 U	0.002 U	0.002 U	0.002 U	
METHYL BROMIDE	0 / 37	0 : 0.13		0.01	0 U	0 U	0 U	0 U			0.002 U	0.002 U	0.002 U	0.002 U	
METHYL CHLORIDE	0 / 37	0 : 0.13		0.01	0 U	0 U	0 U	0 U			0.002 U	0.002 U	0.002 U	0.002 U	
METHYL ETHYL KETONE	0 / 35	0 : 0.25		0.02	0 U			0 U			0.005 U	0.004 U	0.005 U	0.004 U	
METHYL ISOBUTYL KETONE	0 / 36	0 : 0.19		0.02	0 U	0 U	0 U	0 U			0.003 U	0.003 UJ	0.003 U	0.003 U	
METHYLENE CHLORIDE	11 / 44	0 : 0.13	0.002 - 0.44	0.03	0 U	0 U	0 U	0 U		0.004 J	0.002 U	0.002 U	0.002 U	0.002 U	
METHYL-T-BUTYL ETHER	0 / 33	0.0005 : 0.032		0.00							0.0006 U	0.0006 UJ	0.0006 U	0.0005 U	
O-XYLENE	0 / 12	0.001 : 0.063		0.00											
STYRENE	0 / 35	0 : 0.063		0.01	0 U			0 U			0.001 U	0.001 U	0.001 U	0.001 U	
t-Butyl Alcohol	0 / 33	0.021 : 1.3		0.11							0.023 U	0.022 U	0.023 U	0.021 U	

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	SB4-9 SB4-9-110492-1-1.5 11/4/1992 1-1.5 ft	SB4-9 SB4-9-110492-3.5-4 11/4/1992 3.5-4 ft	SB4-9 SB4-9-110492-7-7.5 11/4/1992 7-7.5 ft	SRI-SS-1 SRI-SS-1-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-1 SRI-SS-1-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-10 SRI-SS-10-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-10 SRI-SS-10-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-11 SRI-SS-11-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-11 SRI-SS-11-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-12 SRI-SS-12-0-0.5-7-8-09 7/8/2009 0-0.5 ft
TETRACHLOROETHYLENE	4 / 37	0 : 0.063	0.0032 - 0.07	0.01	0 U	0 U	0.0032 J	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
TOLUENE	3 / 37	0 : 0.063	0.002 - 0.077	0.01	0 U	0 U	0.0094	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
TRICHLOROETHYLENE	0 / 36	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
TRICHLOROFLUOROMETHANE	0 / 36	0 : 0.13		0.01		0 U	0 U	0 U			0.002 U	0.002 U	0.002 U	0.002 U	
VINYL CHLORIDE	0 / 37	0 : 0.063		0.01	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
XYLENES,TOTAL	1 / 25	0 : 0.061	2.6 - 2.6	0.13	0 U	0 U	0 U	0 U			0.001 U	0.001 U	0.001 U	0.001 U	
Semivolatile Organics (mg/Kg)															
1,2,4,5-TETRACHLOROBENZENE	0 / 12	0.018 : 0.2		0.04											
1,2,4-TRICHLOROBENZENE	0 / 1	0 : 0			0 U										
1,2-DICHLOROBENZENE	0 / 1	0 : 0			0 U										
1,2-DIPHENYLHYDRAZINE	0 / 24	0 : 0.2		0.02	0 U				0.04 U		0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
1,3-DICHLOROBENZENE	0 / 1	0 : 0			0 U										
1,4-DICHLOROBENZENE	0 / 1	0 : 0			0 U										
1,4-DIOXANE	0 / 12	0.11 : 1.2		0.19											
2,3,4,6-Tetrachlorophenol	0 / 12	0.071 : 0.8		0.13											
2,4,5-TRICHLOROPHENOL	0 / 44	0.018 : 0.39		0.04					0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
2,4,6-TRICHLOROPHENOL	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
2,4-DICHLOROPHENOL	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
2,4-DIMETHYLPHENOL	0 / 45	0 : 0.39		0.04	0 U				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
2,4-DINITROPHENOL	0 / 45	0 : 3.9		0.48	0 U				0.79 UJ	0.78 UJ	0.81 UJ	0.78 UJ	0.8 UJ	0.72 UJ	0.81 UJ
2,4-DINITROTOLUENE	0 / 45	0 : 0.8		0.07	0 U				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
2,6-DINITROTOLUENE	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
2-CHLORONAPHTHALENE	0 / 13	0 : 0.084		0.02	0 U										
2-CHLOROPHENOL	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
2-METHYL-4,6-DINITROPHENOL	0 / 44	0.18 : 2		0.17					0.2 UJ	0.19 UJ	0.2 UJ	0.19 UJ	0.2 UJ	0.18 UJ	0.2 UJ
2-METHYLNAPHTHALENE	4 / 44	0.004 : 0.043	0.019 - 91	2.10					0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
2-NITROANILINE	0 / 44	0.018 : 0.2		0.03					0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
2-NITROPHENOL	0 / 13	0 : 0.2		0.03	0 U										
3,3-DICHLOROBENZIDINE	0 / 45	0 : 1.2		0.10	0 U				0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.11 U	0.12 U
3-NITROANILINE	0 / 12	0.071 : 0.8		0.13											
4-BROMOPHENYL PHENYL ETHER	0 / 13	0 : 0.2		0.03	0 U										
4-CHLORO-3-METHYLPHENOL	0 / 45	0 : 0.39		0.04	0 U				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
4-CHLOROANILINE	0 / 12	0.018 : 0.2		0.04											
4-CHLOROPHENYL PHENYL ETHER	0 / 13	0 : 0.2		0.03	0 U										
4-NITROANILINE	0 / 12	0.071 : 0.8		0.13											
4-NITROPHENOL	0 / 13	0 : 2		0.32	0 U										
ACENAPHTHENE	2 / 45	0 : 0.2	0.007 - 3.6	0.10	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
ACENAPHTHYLENE	2 / 45	0 : 0.2	0.007 - 0.021	0.02	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
ACETOPHENONE	0 / 44	0.018 : 0.39		0.04					0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
ANTHRACENE	3 / 45	0 : 0.2	0.02 - 1	0.04	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
ATRAZINE	0 / 12	0.036 : 0.4		0.06											
BENZALDEHYDE	0 / 44	0.071 : 0.8		0.07					0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
BENZIDINE	0 / 45	0 : 8.4		0.94	0 U				1.4 UJ	1.4 UJ	1.4 UJ	1.4 UJ	1.4 UJ	1.3 UJ	1.4 UJ
BENZO(A)ANTHRACENE	8 / 45	0 : 0.2	0.008 - 0.091	0.03	0 U				0.091	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
BENZO(A)PYRENE	8 / 45	0 : 0.2	0.008 - 0.1	0.03	0 U				0.1	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
BENZO(B)FLUORANTHENE	10 / 45	0 : 0.2	0.007 - 0.15	0.03	0 U				0.15	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
BENZO(GHI)PERYLENE	9 / 45	0 : 0.2	0.006 - 0.097	0.03	0 U				0.082	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
BENZO(K)FLUORANTHENE	8 / 45	0 : 0.2	0.007 - 0.063	0.02	0 U				0.063	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
BENZYL BUTYL PHTHALATE	0 / 45	0 : 0.8		0.07	0 U				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
Biphenyl	4 / 44	0.018 : 0.17	0.066 - 45	1.32					0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
BIS(2-CHLOROETHOXY) METHANE	0 / 13	0 : 0.2		0.03	0 U										
BIS(2-CHLOROETHYL) ETHER	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
Bis(2-chloroisopropyl) ether	0 / 44	0.018 : 0.2		0.03					0.04 UJ	0.039 UJ	0.04 UJ	0.039 UJ	0.04 UJ	0.036 UJ	0.04 UJ

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	SB4-9 SB4-9-110492-1-1.5 11/4/1992 1-1.5 ft	SB4-9 SB4-9-110492-3.5-4 11/4/1992 3.5-4 ft	SB4-9 SB4-9-110492-7-7.5 11/4/1992 7-7.5 ft	SRI-SS-1 SRI-SS-1-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-1 SRI-SS-1-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-10 SRI-SS-10-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-10 SRI-SS-10-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-11 SRI-SS-11-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-11 SRI-SS-11-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-12 SRI-SS-12-0-0.5-7-8-09 7/8/2009 0-0.5 ft
BIS(2-CHLOROISOPROPYL)ETHER	0 / 13	0 : 0.2		0.03	0 U										
BIS(2-ETHYLHEXYL)PHTHALATE	4 / 45	0.071 : 0.8	0.11 - 6.5	0.22	0.41				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
CAPROLACTAM	0 / 44	0.036 : 0.4		0.03					0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
CARBAZOLE	0 / 44	0.018 : 0.2		0.03					0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
CHRYSENE	9 / 45	0 : 0.2	0.011 - 0.16	0.03	0 U				0.12	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
CRESOL,O	0 / 44	0.018 : 0.39		0.04					0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
CRESOL,P	0 / 44	0.018 : 0.39		0.04					0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
DIBENZO(A,H)ANTHRACENE	2 / 45	0 : 0.2	0.009 - 0.044	0.02	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
DIBENZOFURAN	1 / 12	0.018 : 0.17	2.9 - 2.9	0.27											
DIETHYL PHTHALATE	0 / 45	0 : 0.8		0.07	0 U				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
DIMETHYL PHTHALATE	0 / 44	0.071 : 0.8		0.07					0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
DI-N-BUTYL PHTHALATE	0 / 45	0 : 0.8		0.07	0 U				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
DI-N-OCTYL PHTHALATE	1 / 45	0.071 : 0.8	0.056 - 0.056	0.07	0.056				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
FLUORANTHENE	12 / 45	0 : 0.2	0.004 - 0.23	0.04	0 U				0.19	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
FLUORENE	2 / 45	0 : 0.2	0.008 - 6	0.15	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
HEXACHLOROBENZENE	0 / 45	0 : 0.2		0.02	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
HEXACHLOROBUTADIENE	0 / 45	0 : 0.39		0.04	0 U				0.079 U	0.078 U	0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
HEXACHLOROCYCLOPENTADIENE	0 / 45	0 : 2		0.17	0 U				0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U
HEXACHLOROETHANE	1 / 45	0 : 0.4	0.13 - 0.13	0.04	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
INDENO(1,2,3-CD)PYRENE	8 / 45	0 : 0.2	0.007 - 0.1	0.03	0 U				0.077	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
ISOPHORONE	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
NAPHTHALENE	3 / 45	0 : 0.043	0.004 - 15	0.37	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
NITROBENZENE	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
N-NITROSODIMETHYLAMINE	0 / 24	0 : 0.39		0.05	0 U				0.079 U		0.081 U	0.078 U	0.08 U	0.072 U	0.081 U
N-NITROSODI-N-PROPYLAMINE	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
N-NITROSODIPHENYLAMINE	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
PENTACHLOROPHENOL	0 / 45	0 : 0.98		0.10	0 U				0.2 U	0.19 U	0.2 U	0.19 U	0.2 U	0.18 U	0.2 U
PHENANTHRENE	8 / 45	0 : 0.2	0.004 - 12	0.30	0 U				0.093	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
PHENOL	0 / 45	0 : 0.2		0.03	0 U				0.04 U	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 U
PYRENE	10 / 45	0 : 0.2	0.012 - 0.45	0.04	0 U				0.18	0.039 U	0.04 U	0.039 U	0.04 U	0.036 U	0.04 UJ
Inorganics (mg/Kg)															
ALUMINUM	35 / 35		1.8 - 7930	3076.91	1.8				4380	2850	1830 J	3610 J	1180 J	7930 J	1350
ANTIMONY	2 / 35	0.0066 : 1.27	1.52 - 1.77	0.61	0.0066 U				1.15 U	1.12 U	1.19 U	1.14 U	1.2 U	1.77 J	1.2 U
ARSENIC	27 / 35	1.05 : 1.21	0.0072 - 15.9	2.99	0.0072				2.25	2.23	1.15 J	3.47	1.14 U	8.99	1.14 U
BARIUM	34 / 35	0.022 : 0.022	1.6 - 20.9	9.34	0.022 U				17	9.68	6.46 J	7.3 J	5.13 J	12.5	5.81
BERYLLIUM	8 / 35	0.00055 : 0.0863	0.0811 - 0.705	0.08	0.00055 U				0.107 J	0.0764 U	0.0807 U	0.0778 U	0.0818 U	0.705	0.0813 U
CADMIUM	6 / 35	0.00055 : 0.178	0.244 - 0.593	0.13	0.00055 U				0.593	0.157 U	0.166 U	0.16 U	0.168 U	0.151 U	0.167 U
CALCIUM	21 / 35	0.55 : 129	9.6 - 1060	130.13	0.55 U				1050	78.3 U	21.8 J	21.3 J	24.4	54.9	60.4
CHROMIUM	34 / 35	0.741 : 0.741	0.038 - 73.2	13.88	0.038				45.8	11.1	5.22	14.4	3.15	73.2	3.21 J
COBALT	18 / 35	0.0055 : 0.241	0.262 - 2.07	0.40	0.0055 U				0.801	0.262 J	0.226 U	0.316 J	0.229 U	0.878	0.227 U
COPPER	26 / 35	2.58 : 27.9	0.023 - 185	21.44	0.023				185	2.58 U	5.65	2.09	6.5	7.5	19.6
IRON	35 / 35		3.9 - 41700	8650.94	3.9				18900	7230	3870	10500	1560	41700	1490
LEAD	33 / 35	0.011 : 0.754	1.85 - 81	11.15	0.011 U				26.4	4.69	3.29	4.2	3.1	7.17	4.27
MAGNESIUM	32 / 33	0.55 : 0.55	40.1 - 643	183.82	0.55 U				411 J	146 J	90.4	105	49.3	218	
MANGANESE	35 / 35		0.019 - 44	17.77	0.019				33.9	17.4	11	19.6	12	23.5	5.96 J
MERCURY	7 / 35	0.0001 : 0.0145	0.0124 - 0.0362	0.01	0.0001 U				0.0134 U	0.0128 U	0.0136 U	0.0129 U	0.0136 U	0.012 U	0.0137 U
NICKEL	32 / 35	0.0044 : 1.2	0.367 - 15.3	2.33	0.0044 U				3.78	1.31	0.742 J	2.03	0.367 J	6.22	1.2 U
POTASSIUM	34 / 35	0.55 : 0.55	33.2 - 705	282.63	0.55 U				484	283	138	257	136	533	158 J
SELENIUM	0 / 35	0.011 : 1.24		0.54	0.011 U				1.13 U	1.1 U	1.16 U	1.12 U	1.18 U	1.05 U	1.17 U
SILVER	1 / 35	0.0011 : 0.228	0.399 - 0.399	0.11	0.0011 U				0.399 J	0.202 U	0.214 U	0.206 U	0.217 U	0.194 U	0.215 U
SODIUM	6 / 35	0.55 : 47.3	35.3 - 69.5	27.26	0.55 U				69.5 J	41.9 U	44.3 U	42.7 U	44.9 U	40.1 U	44.6 U
THALLIUM	0 / 35	0.0011 : 1.84		0.78	0.0011 U				1.67 U	1.63 U	1.72 U	1.66 U	1.74 U	1.56 U	1.73 U
VANADIUM	35 / 35		0.033 - 182	25.32	0.033				23.8 J	16.4 J	7.95	40.4	4.96	157	4.53

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average Excluding 0 ND	CPS2H CPS2H-082594-2-4 8/25/1994 2-4 ft	SB4-9 SB4-9-110492-1-1.5 11/4/1992 1-1.5 ft	SB4-9 SB4-9-110492-3.5-4 11/4/1992 3.5-4 ft	SB4-9 SB4-9-110492-7-7.5 11/4/1992 7-7.5 ft	SRI-SS-1 SRI-SS-1-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-1 SRI-SS-1-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-10 SRI-SS-10-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-10 SRI-SS-10-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-11 SRI-SS-11-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-11 SRI-SS-11-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-12 SRI-SS-12-0-0.5-7-8-09 7/8/2009 0-0.5 ft
ZINC	26 / 35	6.51 : 22.6	0.044 - 306	41.40	0.044				306	6.51 U	8.34	15.8	15.8	36.9	11.2 J
% Solid	1 / 1		91 - 91	91.00	91										
CYANIDE	0 / 1	0.001 : 0.001		0.00	0.001 U										
Moisture	46 / 46		3.4 - 22	13.76					15.9	14.4	17.4	14.3	16.9	7.9	17.2
PH	5 / 5		5.91 - 10	7.04		10	6.2	6.4							

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated
E = exceeds the calibration range

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-12 SRI-SS-12-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-13 SRI-SS-13-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-13 SRI-SS-13-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-14 SRI-SS-14-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-14 SRI-SS-14-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-15 SRI-SS-15-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-15 SRI-SS-15-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-16 SRI-SS-16-0.5-1.0-8-20-09 8/20/2009 0.5-1	SRI-SS-16 SRI-SS-16-0-0.5-8-20-09 8/20/2009 0-0.5 ft	SRI-SS-16 SRI-SS-16-3.5-4.0-8-20-09 8/20/2009 3.5-4	SRI-SS-2 SRI-SS-2-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-2 SRI-SS-2-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-3 SRI-SS-3-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-3 SRI-SS-3-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-37 SRI-SS-37-0-24-071211 7/12/2011 0-2 ft	SRI-SS-37 SRI-SS-37-0-6-071211 7/12/2011 0-0.5 ft
Volatile Organics (mg/Kg)																
1,1,1-TRICHLOROETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,1,2,2-TETRACHLOROETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE																0.002 U
1,1,2-TRICHLOROETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,1-DICHLOROETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U			0.057 U			0.001 U
1,1-DICHLOROETHYLENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,2,3-TRICHLOROBENZENE																0.001 U
1,2,4-TRICHLOROBENZENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,2-CIS-DICHLOROETHYLENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,2-DIBROMO-3-CHLOROPROPANE		0.092 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U			0.11 U			0.002 U
1,2-DIBROMOETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,2-DICHLOROBENZENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,2-DICHLOROETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U			0.057 U			0.001 U
1,2-TRANS-DICHLOROETHYLENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,3-CIS-DICHLOROPROPYLENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U			0.057 U			0.001 U
1,3-DICHLOROBENZENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,3-TRANS-DICHLOROPROPYLENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,4-DICHLOROBENZENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
1,4-DIOXANE																0.076 U
2-CHLOROETHYL VINYL ETHER																
2-HEXANONE																0.003 U
ACETONE		2.6 J	0.008 U	0.25 U	0.008 U	2			0.008 U	0.008 U			4 J	0.034 J		0.013
ACROLEIN		0.92 U	0.022 UJ	0.022 UJ	0.022 UJ	0.024 UJ	0.024 U		0.023 U	0.024 U			1.1 U			0.022 U
ACRYLONITRILE		0.18 U	0.004 U	0.004 U	0.004 U	0.005 U	0.005 U		0.005 U	0.005 U			0.23 U			0.004 U
BENZENE		0.023 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U			0.0006 U	0.0006 U			0.028 U			0.0007
BROMOCHLOROMETHANE																0.001 U
BROMOFORM		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
CARBON DISULFIDE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
CARBON TETRACHLORIDE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
CHLOROBENZENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
CHLORODIBROMOMETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
CHLOROETHANE		0.18 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U			0.23 U			0.002 U
CHLOROFORM		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
CYCLOHEXANE																0.001 U
CYCLOHEXANE, METHYL-																0.001 U
DICHLOROBROMOMETHANE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U			0.057 U			0.001 U
DICHLORODIFLUOROMETHANE		0.092 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U			0.11 U			0.002 U
ETHYLBENZENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
ISOPROPYLBENZENE																0.001 U
M+P-XYLENE																0.001 U
METHYL ACETATE		0.092 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U			0.11 U			0.002 U
METHYL BROMIDE		0.092 UJ	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U			0.11 U			0.002 U
METHYL CHLORIDE		0.092 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U			0.11 U			0.002 U
METHYL ETHYL KETONE		0.18 U	0.004 U	0.004 U	0.004 U	0.005 U	0.005 U		0.005 U	0.005 U			0.23 U			0.004 U
METHYL ISOBUTYL KETONE		0.14 U	0.003 UJ	0.003 U	0.003 UJ	0.004 U			0.004 U	0.004 U			0.17 U			0.003 U
METHYLENE CHLORIDE		0.092 U	0.002 U	0.003	0.003 U	0.002 U	0.002 U		0.002 U	0.002 U	0.003 J	0.002 J	0.11 U	0.002 J		0.002 U
METHYL-T-BUTYL ETHER		0.023 U	0.0006 UJ	0.0006 U	0.0006 UJ	0.0006 U	0.0006 U		0.0006 U	0.0006 U			0.028 U			0.0005 U
O-XYLENE																0.001 U
STYRENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
t-Butyl Alcohol		0.92 U	0.022 U	0.022 U	0.022 U	0.024 U	0.024 U		0.023 U	0.024 U			1.1 U			0.022 U

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-12 SRI-SS-12-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-13 SRI-SS-13-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-13 SRI-SS-13-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-14 SRI-SS-14-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-14 SRI-SS-14-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-15 SRI-SS-15-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-15 SRI-SS-15-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-16 SRI-SS-16-0.5-1.0-8-20-09 8/20/2009 0.5-1	SRI-SS-16 SRI-SS-16-0-0.5-8-20-09 8/20/2009 0-0.5 ft	SRI-SS-16 SRI-SS-16-3.5-4.0-8-20-09 8/20/2009 3.5-4	SRI-SS-2 SRI-SS-2-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-2 SRI-SS-2-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-3 SRI-SS-3-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-3 SRI-SS-3-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-37 SRI-SS-37-0-24-071211 7/12/2011 0-2 ft	SRI-SS-37 SRI-SS-37-0-6-071211 7/12/2011 0-0.5 ft
TETRACHLOROETHYLENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
TOLUENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
TRICHLOROETHYLENE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U			0.057 U			0.001 U
TRICHLOROFLUOROMETHANE		0.092 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U			0.11 U			0.002 U
VINYL CHLORIDE		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			0.001 U
XYLENES,TOTAL		0.046 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U			0.057 U			
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE															0.073 U	
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U				0.038 U		
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE															0.11 U	
2,3,4,6-Tetrachlorophenol															0.073 U	
2,4,5-TRICHLOROPHENOL	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
2,4,6-TRICHLOROPHENOL	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
2,4-DICHLOROPHENOL	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
2,4-DIMETHYLPHENOL	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
2,4-DINITROPHENOL	0.85 UJ	0.74 UJ	0.79 UJ	0.78 UJ	0.77 UJ	0.85 UJ	0.83 UJ	0.78 U		0.85 U	0.8 UJ	0.76 UJ	0.75 UJ	0.76 UJ	0.37 U	
2,4-DINITROTOLUENE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
2,6-DINITROTOLUENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
2-CHLORONAPHTHALENE															0.037 U	
2-CHLOROPHENOL	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
2-METHYL-4,6-DINITROPHENOL	0.21 UJ	0.19 UJ	0.2 UJ	0.19 UJ	0.19 UJ	0.21 UJ	0.21 UJ	0.19 U		0.21 U	0.2 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.18 U	
2-METHYLNAPHTHALENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
2-NITROANILINE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
2-NITROPHENOL															0.037 U	
3,3-DICHLOROBENZIDINE	0.13 U	0.11 U	0.12 U	0.12 U	0.12 U	0.13 U	0.12 U	0.12 U		0.13 U	0.12 U	0.11 U	0.11 U	0.11 U	0.11 U	
3-NITROANILINE															0.073 U	
4-BROMOPHENYL PHENYL ETHER															0.037 U	
4-CHLORO-3-METHYLPHENOL	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
4-CHLOROANILINE															0.073 U	
4-CHLOROPHENYL PHENYL ETHER															0.037 U	
4-NITROANILINE															0.073 U	
4-NITROPHENOL															0.18 U	
ACENAPHTHENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
ACENAPHTHYLENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
ACETOPHENONE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
ANTHRACENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
ATRAZINE															0.037 U	
BENZALDEHYDE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
BENZIDINE	1.5 UJ	1.3 UJ	1.4 UJ	1.4 UJ	1.4 UJ	1.5 UJ	1.4 UJ	1.4 UJ		1.5 UJ	1.4 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.3 U	
BENZO(A)ANTHRACENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.046	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
BENZO(A)PYRENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.063	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
BENZO(B)FLUORANTHENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.099	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
BENZO(GHI)PERYLENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.06	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
BENZO(K)FLUORANTHENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.054	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
BENZYL BUTYL PHTHALATE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
Biphenyl	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	7	
BIS(2-CHLOROETHOXY) METHANE															0.037 U	
BIS(2-CHLOROETHYL) ETHER	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
Bis(2-chloroisopropyl) ether	0.042 UJ	0.037 UJ	0.039 UJ	0.039 UJ	0.039 UJ	0.043 UJ	0.041 UJ	0.039 U		0.043 U	0.04 UJ	0.038 UJ	0.037 UJ	0.038 UJ	0.037 U	

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-12 SRI-SS-12-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-13 SRI-SS-13-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-13 SRI-SS-13-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-14 SRI-SS-14-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-14 SRI-SS-14-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-15 SRI-SS-15-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-15 SRI-SS-15-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-16 SRI-SS-16-0.5-1.0-8-20-09 8/20/2009 0.5-1	SRI-SS-16 SRI-SS-16-0-0.5-8-20-09 8/20/2009 0-0.5 ft	SRI-SS-16 SRI-SS-16-3.5-4.0-8-20-09 8/20/2009 3.5-4	SRI-SS-2 SRI-SS-2-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-2 SRI-SS-2-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-3 SRI-SS-3-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-3 SRI-SS-3-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-37 SRI-SS-37-0-24-071211 7/12/2011 0-2 ft	SRI-SS-37 SRI-SS-37-0-6-071211 7/12/2011 0-0.5 ft
BIS(2-CHLOROISOPROPYL)ETHER															0.037 U	
BIS(2-ETHYLHEXYL)PHTHALATE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.27	
CAPROLACTAM	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
CARBAZOLE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
CHRYSENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.075	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
CRESOL,O	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
CRESOL,P	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
DIBENZO(A,H)ANTHRACENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
DIBENZOFURAN															0.037 U	
DIETHYL PHTHALATE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
DIMETHYL PHTHALATE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
DI-N-BUTYL PHTHALATE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
DI-N-OCTYL PHTHALATE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
FLUORANTHENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.12	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
FLUORENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
HEXACHLOROBENZENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
HEXACHLOROBUTADIENE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U	0.08 U	0.076 U	0.075 U	0.076 U	0.073 U	
HEXACHLOROCYCLOPENTADIENE	0.21 U	0.19 U	0.2 U	0.19 U	0.19 U	0.21 U	0.21 U	0.19 UJ		0.21 UJ	0.2 U	0.19 U	0.19 U	0.19 U	0.18 U	
HEXACHLOROETHANE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
INDENO(1,2,3-CD)PYRENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.052	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
ISOPHORONE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
NAPHTHALENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
NITROBENZENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
N-NITROSODIMETHYLAMINE	0.085 U	0.074 U	0.079 U	0.078 U	0.077 U	0.085 U	0.083 U	0.078 U		0.085 U				0.076 U		
N-NITROSODI-N-PROPYLAMINE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
N-NITROSODIPHENYLAMINE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
PENTACHLOROPHENOL	0.21 U	0.19 U	0.2 U	0.19 U	0.19 U	0.21 U	0.21 U	0.19 U		0.21 U	0.2 U	0.19 U	0.19 U	0.19 U	0.18 U	
PHENANTHRENE	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.049	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
PHENOL	0.042 U	0.037 U	0.039 U	0.039 U	0.039 U	0.043 U	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
PYRENE	0.042 UJ	0.037 U	0.039 U	0.039 U	0.039 U	0.1	0.041 U	0.039 U		0.043 U	0.04 U	0.038 U	0.037 U	0.038 U	0.037 U	
Inorganics (mg/Kg)																
ALUMINUM	251	1490 J	2370 J	4730 J	1180 J	1360 J	1140 J	2480		669	2570	4870	4100	7920	3040	
ANTIMONY	1.26 U	1.11 U	1.13 U	1.15 U	1.15 U	1.27 U	1.23 U	1.16 UJ		1.25 UJ	1.2 U	1.11 J	1.11 U	1.09 U	0.721 U	
ARSENIC	1.19 U	1.05 U	1.62 J	2.52	1.09 U	1.21 U	1.16 U	2.35		1.19 U	1.55 J	15.9	7.91	2.85	2.75	
BARIUM	1.6	4.04 J	17.4 J	7.81 J	3.54 J	4.63 J	3.88 J	5.85 J		2.91 J	9.31	10.3	11.7	19.5	11	
BERYLLIUM	0.0854 U	0.0752 U	0.0771 U	0.0783 U	0.0782 U	0.0863 U	0.0833 U	0.179 J		0.085 U	0.0816 U	0.0811 J	0.0755 U	0.0742 U	0.157	
CADMIUM	0.176 U	0.155 U	0.159 U	0.161 U	0.161 U	0.178 U	0.172 U	0.244 J		0.175 U	0.168 U	0.155 U	0.155 U	0.153 U	0.327	
CALCIUM	23.8 U	25.6	43.3	27.7	9.6 J	26.2	17.6 J	45.2 J		25.51 U	49.9 U	30.5 U	23.9 U	129 U	868	
CHROMIUM	0.741 J	3.51	20.2	9.41	4.58	3.93	3.46	6.42 J		1.8 J	5.48	51.7	11.1	12.9	13.9	
COBALT	0.239 J	0.21 U	0.215 U	0.398 J	0.218 U	0.241 U	0.233 U	0.428		0.238 U	0.228 U	0.443 J	0.211 U	0.749	0.913	
COPPER	1.01 J	14.4	5.13	6.72	0.883 J	22.7	4.51	97.2 J		7.55 J	16.1 U	14.8 U	21.8 U	7.37 U	30.4	
IRON	329	2210	1560	11100	3190	6710	2280	11300		1400	3040	35900	13200	6790	6190	
LEAD	0.754 U	3.56	7.77	7.66	3.11	9.72	1.85	8.99		4.04	6.12	10.3	12.7	8	29.7	
MAGNESIUM		79.6	69.3	244	67.1	73.2	49.5	148		40.1	116 J	189 J	233 J	472 J	432	
MANGANESE	0.689 J	9.04	11.1	25.4	7.76	11.2	4.7	33.7 J		6.92 J	14.2	21.5	24.3	30.1	24.1	
MERCURY	0.0289	0.0159 J	0.0133 U	0.0128 J	0.0125 U	0.0283 J	0.0136 U	0.0132 U		0.0145 U	0.0132 U	0.0126 U	0.0125 U	0.013 U	0.0201	
NICKEL	1.2 U	0.934 J	0.55 J	2.15	0.503 J	0.638 J	0.392 J	1.67 J		0.386 J	0.91 J	2.56	1.18	3.53	2.58	
POTASSIUM	33.2 J	106	481	247	162	121	85.8	299		97.7	302	364	705	555	280	
SELENIUM	1.23 U	1.08 U	1.11 U	1.13 U	1.13 U	1.24 U	1.2 U	1.13 U		1.23 U	1.18 U	1.09 U	1.09 U	1.07 U	0.743 U	
SILVER	0.226 U	0.199 U	0.204 U	0.207 U	0.207 U	0.228 U	0.221 U	0.208 U		0.225 U	0.216 U	0.2 U	0.2 U	0.196 U	0.0907 U	
SODIUM	46.9 U	41.3 U	42.3 U	42.9 U	42.9 U	47.3 U	45.7 U	43.2 U		46.6 U	44.8 U	41.4 U	41.4 U	40.7 U	35.3	
THALLIUM	1.82 U	1.6 U	1.64 U	1.67 U	1.67 U	1.84 U	1.78 U	1.68 U		1.81 U	1.74 U	1.61 U	1.61 U	1.58 U	0.393 U	
VANADIUM	0.815	8.25	19.6	18.2	9.22	6.59	5.6	18.9 J		4.15 J	8.83 J	182 J	17 J	20.6 J	21	

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-12 SRI-SS-12-3.5-4.0-7-8-09 7/8/2009 3.5-4 ft	SRI-SS-13 SRI-SS-13-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-13 SRI-SS-13-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-14 SRI-SS-14-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-14 SRI-SS-14-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-15 SRI-SS-15-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-15 SRI-SS-15-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-16 SRI-SS-16-0.5-1.0-8-20-09 8/20/2009 0.5-1	SRI-SS-16 SRI-SS-16-0-0.5-8-20-09 8/20/2009 0-0.5 ft	SRI-SS-16 SRI-SS-16-3.5-4.0-8-20-09 8/20/2009 3.5-4	SRI-SS-2 SRI-SS-2-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-2 SRI-SS-2-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-3 SRI-SS-3-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-3 SRI-SS-3-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-37 SRI-SS-37-0-24-071211 7/12/2011 0-2 ft	SRI-SS-37 SRI-SS-37-0-6-071211 7/12/2011 0-0.5 ft
ZINC	1.77 J	12.3	14.2	30.5	7.01	11.5	7.14	24.3 J		4.07 J	7.69 U	20.5 U	11.2 U	25.6	193	
% Solid																
CYANIDE																
Moisture	21.2	10.5	15.2	14	13.9	22	19.2	14.5	14.9	21.6	16.7	11.7	10.8	11.9	9.4	
PH															5.91	

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated
E = exceeds the calibration range

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-38 SRI-SS-38-0-24-071211 7/12/2011 0-2 ft	SRI-SS-38 SRI-SS-38-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-4 SRI-SS-4-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-4 SRI-SS-4-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-48 SRI-SS-48-A-092412 9/24/2012 0-0.5 ft	SRI-SS-48 SRI-SS-48-H-092412 9/24/2012 3.5-4 ft	SRI-SS-49 SRI-SS-49-A-092412 9/24/2012 0-0.5 ft	SRI-SS-49 SRI-SS-49-H-092412 9/24/2012 3.5-4 ft	SRI-SS-5 SRI-SS-5-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-5 SRI-SS-5-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-50 SRI-SS-50-A-092412 9/24/2012 0-0.5 ft	SRI-SS-50 SRI-SS-50-H-092412 9/24/2012 3.5-4 ft	SRI-SS-51 SRI-SS-51-A-092412 9/24/2012 0-0.5 ft	SRI-SS-51 SRI-SS-51-H-092412 9/24/2012 3.5-4 ft	SRI-SS-52 SRI-SS-52-A-092412 9/24/2012 0-0.5 ft	SRI-SS-52 SRI-SS-52-G-092412 9/24/2012 3-3.5 ft
Volatile Organics (mg/Kg)																
1,1,1-TRICHLOROETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,1,2,2-TETRACHLOROETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 J	0.001 U	0.061 U		0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.063 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE		0.002 U			0.004 U	0.003 U	0.003 U	0.002 U			0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.13 U
1,1,2-TRICHLOROETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,1-DICHLOROETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,1-DICHLOROETHYLENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,2,3-TRICHLOROBENZENE		0.001 U			0.002 U	0.001 U	0.001 UJ	0.001 U			0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.063 U
1,2,4-TRICHLOROBENZENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 UJ	0.001 U	0.061 U		0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.063 U
1,2-CIS-DICHLOROETHYLENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,2-DIBROMO-3-CHLOROPROPANE		0.002 U	0.11 U		0.004 U	0.003 U	0.003 UJ	0.002 U	0.12 U		0.002 U	0.002 U	0.002 UJ	0.002 U	0.003 U	0.13 U
1,2-DIBROMOETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,2-DICHLOROBENZENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 UJ	0.001 U	0.061 U		0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.063 U
1,2-DICHLOROETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,2-DICHLOROETHYLENE																
1,2-DICHLOROPROPANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,2-TRANS-DICHLOROETHYLENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,3-CIS-DICHLOROPROPYLENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,3-DICHLOROBENZENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 UJ	0.001 U	0.061 U		0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.063 U
1,3-TRANS-DICHLOROPROPYLENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
1,4-DICHLOROBENZENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 UJ	0.001 U	0.061 U		0.001 U	0.001 U	0.001 UJ	0.001 U	0.001 U	0.063 U
1,4-DIOXANE		0.077 U			0.14 U	0.1 U	0.09 U	0.084 U			0.077 U	0.08 U	0.087 U	0.083 U	0.1 U	4.4 U
2-CHLOROETHYL VINYL ETHER																
2-HEXANONE		0.003 U			0.006 U	0.004 U	0.004 U	0.004 U			0.003 U	0.003 U	0.004 U	0.004 U	0.004 U	0.19 U
ACETONE		0.008 U	0.44 J	0.028 J	0.014 U	0.035	0.016	0.008 U	14 J	0.016 J	0.012	0.008 U	0.038	0.008 U	0.023	0.44 U
ACROLEIN		0.022 U	1.1 U		0.039 U	0.03 U	0.026 U	0.024 U	1.2 U		0.022 U	0.023 U	0.025 U	0.024 U	0.029 U	1.3 U
ACRYLONITRILE		0.004 U	0.21 U		0.008 U	0.006 U	0.005 U	0.005 U	0.25 U		0.004 U	0.005 U	0.005 U	0.005 U	0.006 U	0.25 U
BENZENE		0.0005 U	0.026 U		0.001 U	0.0007 U	0.0006 U	0.0006 U	0.031 U		0.0005 U	0.0006 U	0.0006 U	0.0006 U	0.0007 U	0.032 U
BROMOCHLOROMETHANE		0.001 U			0.002 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
BROMOFORM		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
CARBON DISULFIDE		0.001 U	0.053 U	0.003 J	0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
CARBON TETRACHLORIDE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
CHLOROBENZENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
CHLORODIBROMOMETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
CHLOROETHANE		0.002 U	0.21 U		0.004 U	0.003 U	0.003 U	0.002 U	0.25 U		0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.13 U
CHLOROFORM		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
CYCLOHEXANE		0.001 U			0.002 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.11
CYCLOHEXANE, METHYL-		0.001 U			0.002 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.59
DICHLOROBROMOMETHANE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
DICHLORODIFLUOROMETHANE		0.002 U	0.11 U		0.004 U	0.003 U	0.003 U	0.002 U	0.12 U		0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.13 U
ETHYLBENZENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.43
ISOPROPYLBENZENE		0.001 U			0.002 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.61
M+P-XYLENE		0.001 U			0.002 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.44
METHYL ACETATE		0.002 U	0.11 U		0.004 U	0.003 U	0.003 U	0.002 U	0.12 U		0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.17
METHYL BROMIDE		0.002 U	0.11 U		0.004 U	0.003 U	0.003 U	0.002 U	0.12 U		0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.13 U
METHYL CHLORIDE		0.002 U	0.11 U		0.004 U	0.003 U	0.003 U	0.002 U	0.12 U		0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.13 U
METHYL ETHYL KETONE		0.004 U	0.21 U		0.008 U	0.006 U	0.005 U	0.005 U	0.25 U		0.004 U	0.005 U	0.005 U	0.005 U	0.006 U	0.25 U
METHYL ISOBUTYL KETONE		0.003 U	0.16 U		0.006 U	0.004 U	0.004 U	0.004 U	0.18 U		0.003 U	0.003 U	0.004 U	0.004 U	0.004 U	0.19 U
METHYLENE CHLORIDE		0.002 U	0.11 U		0.004 U	0.003 U	0.003 U	0.002 U	0.12 U	0.004 J	0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.13 U
METHYL-T-BUTYL ETHER		0.0005 U	0.026 U		0.001 U	0.0007 U	0.0006 U	0.0006 U	0.031 U		0.0005 U	0.0006 U	0.0006 U	0.0006 U	0.0007 U	0.032 U
O-XYLENE		0.001 U			0.002 U	0.001 U	0.001 U	0.001 U			0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
STYRENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
t-Butyl Alcohol		0.022 U	1.1 U		0.039 U	0.03 U	0.026 U	0.024 U	1.2 U		0.022 U	0.023 U	0.025 U	0.024 U	0.029 U	1.3 U

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-38 SRI-SS-38-0-24-071211 7/12/2011 0-2 ft	SRI-SS-38 SRI-SS-38-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-4 SRI-SS-4-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-4 SRI-SS-4-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-48 SRI-SS-48-A-092412 9/24/2012 0-0.5 ft	SRI-SS-48 SRI-SS-48-H-092412 9/24/2012 3.5-4 ft	SRI-SS-49 SRI-SS-49-A-092412 9/24/2012 0-0.5 ft	SRI-SS-49 SRI-SS-49-H-092412 9/24/2012 3.5-4 ft	SRI-SS-5 SRI-SS-5-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-5 SRI-SS-5-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-50 SRI-SS-50-A-092412 9/24/2012 0-0.5 ft	SRI-SS-50 SRI-SS-50-H-092412 9/24/2012 3.5-4 ft	SRI-SS-51 SRI-SS-51-A-092412 9/24/2012 0-0.5 ft	SRI-SS-51 SRI-SS-51-H-092412 9/24/2012 3.5-4 ft	SRI-SS-52 SRI-SS-52-A-092412 9/24/2012 0-0.5 ft	SRI-SS-52 SRI-SS-52-G-092412 9/24/2012 3-3.5 ft
TETRACHLOROETHYLENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
TOLUENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.002	0.001 U	0.001 U	0.063 U
TRICHLOROETHYLENE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
TRICHLOROFLUOROMETHANE		0.002 U	0.11 U		0.004 U	0.003 U	0.003 U	0.002 U	0.12 U		0.002 U	0.002 U	0.002 U	0.002 U	0.003 U	0.13 U
VINYL CHLORIDE		0.001 U	0.053 U		0.002 U	0.001 U	0.001 U	0.001 U	0.061 U		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.063 U
XYLENES,TOTAL			0.053 U						0.061 U							
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE	0.072 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
1,2,4-TRICHLOROBENZENE																
1,2-DICHLOROBENZENE																
1,2-DIPHENYLHYDRAZINE																
1,3-DICHLOROBENZENE																
1,4-DICHLOROBENZENE																
1,4-DIOXANE	0.11 U				0.56 U	0.11 U	0.54 U	0.11 U			0.11 U	0.11 U	0.56 U	0.11 U	1 U	1.2 U
2,3,4,6-Tetrachlorophenol	0.072 U				0.37 U	0.072 U	0.36 U	0.073 U			0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
2,4,5-TRICHLOROPHENOL	0.072 U		0.078 U	0.083 U	0.093 U	0.018 U	0.09 U	0.018 U	0.08 U	0.078 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
2,4,6-TRICHLOROPHENOL	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
2,4-DICHLOROPHENOL	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
2,4-DIMETHYLPHENOL	0.072 U		0.078 U	0.083 U	0.093 U	0.018 U	0.09 U	0.018 U	0.08 U	0.078 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
2,4-DINITROPHENOL	0.36 U		0.78 UJ	0.83 UJ	1.7 U	0.33 U	1.6 U	0.33 U	0.8 UJ	0.78 UJ	0.32 U	0.32 U	1.7 U	0.32 U	3.1 U	3.6 U
2,4-DINITROTOLUENE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
2,6-DINITROTOLUENE	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
2-CHLORONAPHTHALENE	0.036 U				0.039 U	0.008 U	0.038 U	0.008 U			0.008 U	0.008 U	0.039 U	0.008 U	0.071 U	0.084 U
2-CHLOROPHENOL	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
2-METHYL-4,6-DINITROPHENOL	0.18 U		0.2 UJ	0.21 UJ	0.93 U	0.18 U	0.9 U	0.18 U	0.2 UJ	0.19 UJ	0.18 U	0.18 U	0.93 U	0.18 U	1.7 U	2 U
2-METHYLNAPHTHALENE	0.036 U		0.039 U	0.041 U	0.019	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.004 U	0.019 U	0.004 U	0.064	91
2-NITROANILINE	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
2-NITROPHENOL	0.036 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
3,3-DICHLOROBENZIDINE	0.11 U		0.12 U	0.12 U	0.56 U	0.11 U	0.54 U	0.11 U	0.12 U	0.12 U	0.11 U	0.11 U	0.56 U	0.11 U	1 U	1.2 U
3-NITROANILINE	0.072 U				0.37 U	0.072 U	0.36 U	0.073 U			0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
4-BROMOPHENYL PHENYL ETHER	0.036 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
4-CHLORO-3-METHYLPHENOL	0.072 U		0.078 U	0.083 U	0.093 U	0.018 U	0.09 U	0.018 U	0.08 U	0.078 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
4-CHLOROANILINE	0.072 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
4-CHLOROPHENYL PHENYL ETHER	0.036 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
4-NITROANILINE	0.072 U				0.37 U	0.072 U	0.36 U	0.073 U			0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
4-NITROPHENOL	0.18 U				0.93 U	0.18 U	0.9 U	0.18 U			0.18 U	0.18 U	0.93 U	0.18 U	1.7 U	2 U
ACENAPHTHENE	0.036 U		0.039 U	0.041 U	0.019 U	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.007	0.019 U	0.004 U	0.034 U	3.6
ACENAPHTHYLENE	0.036 U		0.039 U	0.041 U	0.019 U	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.007	0.021	0.004 U	0.034 U	0.04 U
ACETOPHENONE	0.072 U		0.078 U	0.083 U	0.093 U	0.018 U	0.09 U	0.018 U	0.08 U	0.078 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
ANTHRACENE	0.036 U		0.039 U	0.041 U	0.019 U	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.023	0.02	0.004 U	0.034 U	1
ATRAZINE	0.036 U				0.19 U	0.036 U	0.18 U	0.037 U			0.036 U	0.036 U	0.19 U	0.036 U	0.34 U	0.4 U
BENZALDEHYDE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
BENZIDINE	1.3 U		1.4 UJ	1.4 UJ	3.9 U	0.76 U	3.8 U	0.77 U	1.4 UJ	1.4 UJ	0.76 U	0.75 U	3.9 U	0.75 U	7.1 U	8.4 U
BENZO(A)ANTHRACENE	0.036 U		0.039 U	0.041 U	0.036	0.004 U	0.019	0.004 U	0.04 U	0.039 U	0.008	0.083	0.055	0.004 U	0.034 U	0.074
BENZO(A)PYRENE	0.036 U		0.039 U	0.041 U	0.047	0.004 U	0.029	0.004 U	0.04 U	0.039 U	0.008	0.073	0.091	0.004 U	0.034 U	0.081
BENZO(B)FLUORANTHENE	0.036 U		0.039 U	0.041 U	0.06	0.004 U	0.062	0.007	0.04 U	0.039 U	0.016	0.095	0.13	0.004 U	0.034 U	0.099
BENZO(GHI)PERYLENE	0.036 U		0.039 U	0.041 U	0.038	0.004 U	0.032	0.004 U	0.04 U	0.039 U	0.006	0.049	0.097	0.004 U	0.072	0.085
BENZO(K)FLUORANTHENE	0.036 U		0.039 U	0.041 U	0.046	0.004 U	0.027	0.004 U	0.04 U	0.039 U	0.007	0.04	0.046	0.004 U	0.034	0.04 U
BENZYL BUTYL PHTHALATE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
Biphenyl	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	5.3
BIS(2-CHLOROETHOXY) METHANE	0.036 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
BIS(2-CHLOROETHYL) ETHER	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
Bis(2-chloroisopropyl) ether	0.036 U		0.039 UJ	0.041 UJ	0.093 U	0.018 U	0.09 U	0.018 U	0.04 UJ	0.039 UJ	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-38 SRI-SS-38-0-24-071211 7/12/2011 0-2 ft	SRI-SS-38 SRI-SS-38-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-4 SRI-SS-4-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-4 SRI-SS-4-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-48 SRI-SS-48-A-092412 9/24/2012 0-0.5 ft	SRI-SS-48 SRI-SS-48-H-092412 9/24/2012 3.5-4 ft	SRI-SS-49 SRI-SS-49-A-092412 9/24/2012 0-0.5 ft	SRI-SS-49 SRI-SS-49-H-092412 9/24/2012 3.5-4 ft	SRI-SS-5 SRI-SS-5-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-5 SRI-SS-5-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-50 SRI-SS-50-A-092412 9/24/2012 0-0.5 ft	SRI-SS-50 SRI-SS-50-H-092412 9/24/2012 3.5-4 ft	SRI-SS-51 SRI-SS-51-A-092412 9/24/2012 0-0.5 ft	SRI-SS-51 SRI-SS-51-H-092412 9/24/2012 3.5-4 ft	SRI-SS-52 SRI-SS-52-A-092412 9/24/2012 0-0.5 ft	SRI-SS-52 SRI-SS-52-G-092412 9/24/2012 3-3.5 ft
BIS(2-CHLOROISOPROPYL)ETHER	0.036 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
BIS(2-ETHYLHEXYL)PHTHALATE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
CAPROLACTAM	0.036 U		0.039 U	0.041 U	0.19 U	0.036 U	0.18 U	0.037 U	0.04 U	0.039 U	0.036 U	0.036 U	0.19 U	0.036 U	0.34 U	0.4 U
CARBAZOLE	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
CHRYSENE	0.036 U		0.039 U	0.041 U	0.047	0.004 U	0.039	0.004 U	0.04 U	0.039 U	0.011	0.087	0.073	0.004 U	0.038	0.16
CRESOL,O	0.072 U		0.078 U	0.083 U	0.093 U	0.018 U	0.09 U	0.018 U	0.08 U	0.078 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
CRESOL,P	0.072 U		0.078 U	0.083 U	0.093 U	0.018 U	0.09 U	0.018 U	0.08 U	0.078 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
DIBENZO(A,H)ANTHRACENE	0.036 U		0.039 U	0.041 U	0.019 U	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.009	0.019 U	0.004 U	0.034 U	0.044
DIBENZOFURAN	0.036 U				0.093 U	0.018 U	0.09 U	0.018 U			0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	2.9
DIETHYL PHTHALATE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
DIMETHYL PHTHALATE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
DI-N-BUTYL PHTHALATE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
DI-N-OCTYL PHTHALATE	0.072 U		0.078 U	0.083 U	0.37 U	0.072 U	0.36 U	0.073 U	0.08 U	0.078 U	0.072 U	0.071 U	0.37 U	0.072 U	0.68 U	0.8 U
FLUORANTHENE	0.036 U		0.039 U	0.041 U	0.073	0.005	0.039	0.004	0.046	0.039 U	0.011	0.12	0.087	0.004 U	0.034 U	0.23
FLUORENE	0.036 U		0.039 U	0.041 U	0.019 U	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.008	0.019 U	0.004 U	0.034 U	6
HEXACHLOROBENZENE	0.036 U		0.039 U	0.041 U	0.019 U	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.004 U	0.019 U	0.004 U	0.034 U	0.04 U
HEXACHLOROBUTADIENE	0.072 U		0.078 U	0.083 U	0.093 U	0.018 U	0.09 U	0.018 U	0.08 U	0.078 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
HEXACHLOROCYCLOPENTADIENE	0.18 U		0.2 U	0.21 U	0.93 U	0.18 U	0.9 U	0.18 U	0.2 U	0.19 U	0.18 U	0.18 U	0.93 U	0.18 U	1.7 U	2 U
HEXACHLOROETHANE	0.036 U		0.039 U	0.041 U	0.19 U	0.036 U	0.18 U	0.037 U	0.04 U	0.039 U	0.036 U	0.036 U	0.19 U	0.036 U	0.34 U	0.4 U
INDENO(1,2,3-CD)PYRENE	0.036 U		0.039 U	0.041 U	0.033	0.004 U	0.02	0.004 U	0.04 U	0.039 U	0.007	0.04	0.061	0.004 U	0.034 U	0.1
ISOPHORONE	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
NAPHTHALENE	0.036 U		0.039 U	0.041 U	0.019 U	0.004 U	0.018 U	0.004 U	0.04 U	0.039 U	0.004 U	0.004	0.019 U	0.004 U	0.034 U	15
NITROBENZENE	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
N-NITROSODIMETHYLAMINE																
N-NITROSODI-N-PROPYLAMINE	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
N-NITROSODIPHENYLAMINE	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
PENTACHLOROPHENOL	0.18 U		0.2 U	0.21 U	0.19 U	0.036 U	0.18 U	0.037 U	0.2 U	0.19 U	0.036 U	0.036 U	0.19 U	0.036 U	0.34 U	0.4 U
PHENANTHRENE	0.036 U		0.039 U	0.041 U	0.04	0.004	0.018 U	0.004 U	0.04 U	0.039 U	0.005	0.083	0.034	0.004 U	0.034 U	12
PHENOL	0.036 U		0.039 U	0.041 U	0.093 U	0.018 U	0.09 U	0.018 U	0.04 U	0.039 U	0.018 U	0.018 U	0.093 U	0.018 U	0.17 U	0.2 U
PYRENE	0.036 U		0.039 U	0.041 U	0.068	0.004 U	0.037	0.004 U	0.041	0.039 U	0.012	0.14	0.1	0.004 U	0.034 U	0.45
Inorganics (mg/Kg)																
ALUMINUM	2550		2860	6810					2360	2660						
ANTIMONY	0.701 U		1.16 U	1.23 U					1.19 U	1.14 U						
ARSENIC	2.34		1.5 J	4.01					1.93 J	1.68 J						
BARIUM	10.1		9.15	19.1					7.71	11.1						
BERYLLIUM	0.125		0.0792 U	0.0835 U					0.0808 U	0.0775 U						
CADMIUM	0.362		0.163 U	0.172 U					0.166 U	0.16 U						
CALCIUM	548		23.53 U	59.9 U					25.6 U	24.2 U						
CHROMIUM	9.19		5.95	14					8.76	8.13						
COBALT	0.996		0.221 U	0.638					0.226 U	0.217 U						
COPPER	42.8		27.9 U	7.93 U					34.3	4.79 U						
IRON	7080		3670 J	3520					5810 J	3640						
LEAD	18.4		5.43	9.8					17.9	6.5						
MAGNESIUM	643		117 J	309 J					95.4 J	95 J						
MANGANESE	25.8		14.6	25					12.1	13.3						
MERCURY	0.0075 U		0.0134 U	0.0138 U					0.0131 U	0.0132 U						
NICKEL	2.48		1.01 J	3.43					1 J	0.987 J						
POTASSIUM	267		270	431					237	304						
SELENIUM	0.722 U		1.14 U	1.2 U					1.16 U	1.12 U						
SILVER	0.0882 U		0.21 U	0.221 U					0.214 U	0.205 U						
SODIUM	48.6		59 J	67.8 J					44.3 U	42.5 U						
THALLIUM	0.382 U		1.69 U	1.78 U					1.72 U	1.65 U						
VANADIUM	18.3		9.44 J	12.8 J					12 J	10.8 J						

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-38 SRI-SS-38-0-24-071211 7/12/2011 0-2 ft	SRI-SS-38 SRI-SS-38-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-4 SRI-SS-4-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-4 SRI-SS-4-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-48 SRI-SS-48-A-092412 9/24/2012 0-0.5 ft	SRI-SS-48 SRI-SS-48-H-092412 9/24/2012 3.5-4 ft	SRI-SS-49 SRI-SS-49-A-092412 9/24/2012 0-0.5 ft	SRI-SS-49 SRI-SS-49-H-092412 9/24/2012 3.5-4 ft	SRI-SS-5 SRI-SS-5-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-5 SRI-SS-5-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-50 SRI-SS-50-A-092412 9/24/2012 0-0.5 ft	SRI-SS-50 SRI-SS-50-H-092412 9/24/2012 3.5-4 ft	SRI-SS-51 SRI-SS-51-A-092412 9/24/2012 0-0.5 ft	SRI-SS-51 SRI-SS-51-H-092412 9/24/2012 3.5-4 ft	SRI-SS-52 SRI-SS-52-A-092412 9/24/2012 0-0.5 ft	SRI-SS-52 SRI-SS-52-G-092412 9/24/2012 3-3.5 ft
ZINC	157		11.7 U	70.8					12.7 U	22.6 U						
% Solid																
CYANIDE																
Moisture	8.6		15	19.4	11.6	9.5	9.1	10.4	16.7	14	8.9	8.2	11.5	8.4	3.4	18.1
PH	6.69															

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated
E = exceeds the calibration range

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-6 SRI-SS-6-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-7 SRI-SS-7-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-7 SRI-SS-7-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-8 SRI-SS-8-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-8 SRI-SS-8-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-9 SRI-SS-9-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-9 SRI-SS-9-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft
Volatile Organics (mg/Kg)								
1,1,1-TRICHLOROETHANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,1,2,2-TETRACHLOROETHANE			0.001 U	0.001 U	0.055 U	0.009	0.001 U	0.001 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE								
1,1,2-TRICHLOROETHANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,1-DICHLOROETHANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,1-DICHLOROETHYLENE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,2,3-TRICHLOROBENZENE								
1,2,4-TRICHLOROBENZENE			0.001 U	0.001 U	0.055 U	0.019	0.001 U	0.001 U
1,2-CIS-DICHLOROETHYLENE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,2-DIBROMO-3-CHLOROPROPANE			0.002 U	0.002 U	0.11 U	0.002 U	0.002 U	0.002 U
1,2-DIBROMOETHANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,2-DICHLOROBENZENE			0.001 U	0.001 U	0.055 U	0.027	0.001 U	0.001 U
1,2-DICHLOROETHANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,2-DICHLOROETHYLENE								
1,2-DICHLOROPROPANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,2-TRANS-DICHLOROETHYLENE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,3-CIS-DICHLOROPROPYLENE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,3-DICHLOROBENZENE			0.001 U	0.001 U	0.055 U	0.036	0.001 U	0.001 U
1,3-TRANS-DICHLOROPROPYLENE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
1,4-DICHLOROBENZENE			0.001 U	0.001 U	0.055 U	0.22	0.001 U	0.001 U
1,4-DIOXANE								
2-CHLOROETHYL VINYL ETHER								
2-HEXANONE								
ACETONE		0.032 J	0.008 U	0.11 U	7 J	0.2 U	0.036 U	0.007 U
ACROLEIN			0.023 UJ	0.023 UJ	1.1 U	0.024 UJ	0.023 UJ	0.021 UJ
ACRYLONITRILE			0.005 U	0.005 U	0.22 U	0.005 U	0.005 U	0.004 U
BENZENE			0.0006 U	0.0006 U	0.027 U	0.009	0.0006 U	0.0005 U
BROMOCHLOROMETHANE								
BROMOFORM			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
CARBON DISULFIDE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
CARBON TETRACHLORIDE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
CHLOROBENZENE			0.001 U	0.001 U	0.055 U	3.2	0.001 U	0.001 U
CHLORODIBROMOMETHANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
CHLOROETHANE			0.002 U	0.002 U	0.22 UJ	0.002 U	0.002 U	0.002 U
CHLOROFORM			0.001 U	0.001 U	0.055 U	0.001	0.001 U	0.001 U
CYCLOHEXANE								
CYCLOHEXANE, METHYL-								
DICHLOROBROMOMETHANE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
DICHLORODIFLUOROMETHANE			0.002 U	0.002 U	0.11 UJ	0.002 U	0.002 U	0.002 U
ETHYLBENZENE			0.001 U	0.001 U	0.055 U	0.3	0.001 U	0.001 U
ISOPROPYLBENZENE								
M+P-XYLENE								
METHYL ACETATE			0.002 U	0.002 U	0.11 U	0.002 U	0.002 U	0.002 U
METHYL BROMIDE			0.002 U	0.002 U	0.11 UJ	0.002 U	0.002 U	0.002 U
METHYL CHLORIDE			0.002 U	0.002 U	0.11 U	0.002 U	0.002 U	0.002 U
METHYL ETHYL KETONE			0.005 U	0.005 U	0.22 U	0.005 U	0.005 U	0.004 U
METHYL ISOBUTYL KETONE			0.004 UJ	0.003 UJ	0.16 U	0.004 UJ	0.003 U	0.003 U
METHYLENE CHLORIDE	0.003 J	0.002 J	0.27	0.27	0.11 U	0.44 E	0.002 U	0.002 U
METHYL-T-BUTYL ETHER			0.0006 UJ	0.0006 UJ	0.027 U	0.0006 UJ	0.0006 U	0.0005 U
O-XYLENE								
STYRENE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
t-Butyl Alcohol			0.023 U	0.023 U	1.1 U	0.024 U	0.023 U	0.021 U

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-6 SRI-SS-6-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-7 SRI-SS-7-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-7 SRI-SS-7-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-8 SRI-SS-8-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-8 SRI-SS-8-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-9 SRI-SS-9-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-9 SRI-SS-9-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft
TETRACHLOROETHYLENE			0.033	0.07	0.055 U	0.055	0.001 U	0.001 U
TOLUENE			0.001 U	0.001 U	0.055 U	0.077	0.001 U	0.001 U
TRICHLOROETHYLENE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
TRICHLOROFLUOROMETHANE			0.002 U	0.002 U	0.11 U	0.002 U	0.002 U	0.002 U
VINYL CHLORIDE			0.001 U	0.001 U	0.055 U	0.001 U	0.001 U	0.001 U
XYLENES,TOTAL			0.001 U	0.001 U	0.055 U	2.6	0.001 U	0.001 U
Semivolatile Organics (mg/Kg)								
1,2,4,5-TETRACHLOROBENZENE								
1,2,4-TRICHLOROBENZENE								
1,2-DICHLOROBENZENE								
1,2-DIPHENYLHYDRAZINE		0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
1,3-DICHLOROBENZENE								
1,4-DICHLOROBENZENE								
1,4-DIOXANE								
2,3,4,6-Tetrachlorophenol								
2,4,5-TRICHLOROPHENOL	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
2,4,6-TRICHLOROPHENOL	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
2,4-DICHLOROPHENOL	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
2,4-DIMETHYLPHENOL	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
2,4-DINITROPHENOL	0.8 UJ	0.77 UJ	0.76 UJ	0.75 UJ	0.79 UJ	3.9 UJ	0.79 UJ	0.75 UJ
2,4-DINITROTOLUENE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
2,6-DINITROTOLUENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
2-CHLORONAPHTHALENE								
2-CHLOROPHENOL	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
2-METHYL-4,6-DINITROPHENOL	0.2 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.2 UJ	0.98 UJ	0.2 UJ	0.19 UJ
2-METHYLNAPHTHALENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.45	0.04 U	0.037 U
2-NITROANILINE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
2-NITROPHENOL								
3,3-DICHLOROBENZIDINE	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.59 U	0.12 U	0.11 U
3-NITROANILINE								
4-BROMOPHENYL PHENYL ETHER								
4-CHLORO-3-METHYLPHENOL	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
4-CHLOROANILINE								
4-CHLOROPHENYL PHENYL ETHER								
4-NITROANILINE								
4-NITROPHENOL								
ACENAPHTHENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
ACENAPHTHYLENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
ACETOPHENONE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
ANTHRACENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
ATRAZINE								
BENZALDEHYDE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
BENZIDINE	1.4 UJ	1.3 UJ	1.3 UJ	1.3 UJ	1.4 UJ	6.8 UJ	1.4 UJ	1.3 UJ
BENZO(A)ANTHRACENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
BENZO(A)PYRENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
BENZO(B)FLUORANTHENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.048	0.037 U
BENZO(GHI)PERYLENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
BENZO(K)FLUORANTHENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
BENZYL BUTYL PHTHALATE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
Biphenyl	0.04 U	0.038 U	0.038 U	0.037 U	0.066	45	0.04 U	0.037 U
BIS(2-CHLOROETHOXY) METHANE								
BIS(2-CHLOROETHYL) ETHER	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
Bis(2-chloroisopropyl) ether	0.04 UJ	0.038 UJ	0.038 UJ	0.037 UJ	0.039 UJ	0.2 UJ	0.04 UJ	0.037 UJ

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-6 SRI-SS-6-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-7 SRI-SS-7-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-7 SRI-SS-7-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-8 SRI-SS-8-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-8 SRI-SS-8-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-9 SRI-SS-9-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-9 SRI-SS-9-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft
BIS(2-CHLOROISOPROPYL)ETHER								
BIS(2-ETHYLHEXYL)PHTHALATE	0.08 U	0.077 U	0.076 U	0.075 U	0.11	6.5	0.079 U	0.075 U
CAPROLACTAM	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
CARBAZOLE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
CHRYSENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
CRESOL,O	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
CRESOL,P	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
DIBENZO(A,H)ANTHRACENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
DIBENZOFURAN								
DIETHYL PHTHALATE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
DIMETHYL PHTHALATE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
DI-N-BUTYL PHTHALATE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
DI-N-OCTYL PHTHALATE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
FLUORANTHENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.042	0.037 U
FLUORENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
HEXACHLOROBENZENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
HEXACHLOROBUTADIENE	0.08 U	0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
HEXACHLOROCYCLOPENTADIENE	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.98 U	0.2 U	0.19 U
HEXACHLOROETHANE	0.04 U	0.038 U	0.038 U	0.13	0.039 U	0.2 U	0.04 U	0.037 U
INDENO(1,2,3-CD)PYRENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
ISOPHORONE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
NAPHTHALENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.57	0.04 U	0.037 U
NITROBENZENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
N-NITROSODIMETHYLAMINE		0.077 U	0.076 U	0.075 U	0.079 U	0.39 U	0.079 U	0.075 U
N-NITROSODI-N-PROPYLAMINE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
N-NITROSODIPHENYLAMINE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
PENTACHLOROPHENOL	0.2 U	0.19 U	0.19 U	0.19 U	0.2 U	0.98 U	0.2 U	0.19 U
PHENANTHRENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
PHENOL	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.04 U	0.037 U
PYRENE	0.04 U	0.038 U	0.038 U	0.037 U	0.039 U	0.2 U	0.043	0.037 U
Inorganics (mg/Kg)								
ALUMINUM	2530	3670	2760 J	3060 J	2200 J	5380 J	4440 J	5110 J
ANTIMONY	1.18 U	1.15 U	1.14 U	1.11 U	1.18 U	1.52 J	1.17 U	1.11 U
ARSENIC	1.84 J	2.01 J	1.73 J	2 J	9.36	4.44	7.54	4
BARIUM	9.01	11.5	9.46 J	11.9 J	7.48 J	20.9 J	12.4 J	9.77 J
BERYLLIUM	0.0801 U	0.0783 U	0.0777 U	0.0757 U	0.0804 U	0.0789 U	0.127 J	0.217 J
CADMIUM	0.165 U	0.161 U	0.16 U	0.156 U	0.165 U	0.327 J	0.346 J	0.155 U
CALCIUM	47 U	34.9 U	17.2 J	133	46.8	1060	142	23.2
CHROMIUM	5.78	10.5	8.24	11.2	19.3	28.3	15.6	35.9
COBALT	0.224 U	0.72	0.322 J	0.326 J	1.04	2.07	0.578	0.456 J
COPPER	36.3	3.18 U	9.56 J	6.39	36.4	36.5	72.9	5
IRON	3810	7120	6360	6830	8490	17800	19700	18500
LEAD	9.28	5.3	5.79	10.3	28.6	81	19.4	5.5
MAGNESIUM	106 J	138 J	101 J	136	104	624	188	177
MANGANESE	16.6	20.5	21.5 J	19.4	17	44	22.1	21.9
MERCURY	0.0137 U	0.0129 U	0.0129 U	0.0128 U	0.0136 U	0.0362 J	0.0132 U	0.0124 J
NICKEL	0.89 J	2.07	0.986 J	1.44	13.8	15.3	2.25	2.4
POTASSIUM	288	332	309 J	252	179	368	359	468
SELENIUM	1.15 U	1.13 U	1.12 U	1.09 U	1.16 U	1.14 U	1.14 U	1.09 U
SILVER	0.212 U	0.207 U	0.206 U	0.2 U	0.213 U	0.209 U	0.21 U	0.199 U
SODIUM	44 U	42.9 U	42.6 U	41.5 U	44.1 U	67.3 J	43.5 U	41.3 U
THALLIUM	1.71 U	1.67 U	1.66 U	1.61 U	1.71 U	1.68 U	1.69 U	1.61 U
VANADIUM	11.3 J	19.4 J	13.9	18.6	10.4	42.8	40	70.8

Attachment A
Table A-5
Summary of Analytical Results in Area 3 Soil (0-10 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-6 SRI-SS-6-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft	SRI-SS-7 SRI-SS-7-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-7 SRI-SS-7-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-8 SRI-SS-8-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-8 SRI-SS-8-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft	SRI-SS-9 SRI-SS-9-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-9 SRI-SS-9-3.5-4.0-7-7-09 7/7/2009 3.5-4 ft
ZINC	12.5 U	20.2 U	8.32	28	61	180	116	39.6
% Solid								
CYANIDE								
Moisture	16.8	13.1	12.5	11.1	15.4	14.7	15.9	10.6
PH								

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated
E = exceeds the calibration range

Prepared by / Date: KJC 05/01/14
Checked by / Date: KMW 05/12/2014

Table A-6
Summary of Analytical Results in Area 3 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	SRI-SS-1 SRI-SS-1-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-10 SRI-SS-10-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-11 SRI-SS-11-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-12 SRI-SS-12-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-13 SRI-SS-13-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-14 SRI-SS-14-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-15 SRI-SS-15-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-16 SRI-SS-16-0.5-1.0-8-20-09 8/20/2009 0.5-1	SRI-SS-16 SRI-SS-16-0-0.5-8-20-09 8/20/2009 0-0.5 ft	SRI-SS-2 SRI-SS-2-0-0.5-7-6-09 7/6/2009 0-0.5 ft
Volatile Organics (mg/Kg)															
1,1,1-TRICHLOROETHANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,1,2,2-TETRACHLOROETHANE	1 / 19	0.001 : 0.061	0.001 - 0.001	0.007578947	0.007578947		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0 / 7	0.002 : 0.004		0.001285714	0.001285714										
1,1,2-TRICHLOROETHANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,1-DICHLOROETHANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,1-DICHLOROETHYLENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,2,3-TRICHLOROBENZENE	0 / 7	0.001 : 0.002		0.000571429	0.000571429										
1,2,4-TRICHLOROBENZENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,2-CIS-DICHLOROETHYLENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,2-DIBROMO-3-CHLOROPROPANE	0 / 19	0.002 : 0.12		0.015105263	0.015105263		0.002 U	0.002 U		0.092 U	0.002 U	0.002 U		0.002 U	
1,2-DIBROMOETHANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,2-DICHLOROBENZENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,2-DICHLOROETHANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,2-DICHLOROPROPANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,2-TRANS-DICHLOROETHYLENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,3-CIS-DICHLOROPROPYLENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,3-DICHLOROBENZENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,3-TRANS-DICHLOROPROPYLENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,4-DICHLOROBENZENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
1,4-DIOXANE	0 / 7	0.076 : 0.14		0.046214286	0.046214286										
2-HEXANONE	0 / 7	0.003 : 0.006		0.001928571	0.001928571										
ACETONE	11 / 19	0.008 : 0.25	0.012 - 14	1.595657895	1.595657895		0.019 U	0.008 U		2.6 J	0.25 U	2		0.008 U	
ACROLEIN	0 / 19	0.022 : 1.2		0.151736842	0.151736842		0.023 UJ	0.023 UJ		0.92 U	0.022 UJ	0.024 UJ		0.023 U	
ACRYLONITRILE	0 / 19	0.004 : 0.25		0.030526316	0.030526316		0.005 U	0.005 U		0.18 U	0.004 U	0.005 U		0.005 U	
BENZENE	1 / 19	0.0005 : 0.031	0.0007 - 0.0007	0.003802632	0.003802632		0.0006 U	0.0006 U		0.023 U	0.0006 U	0.0006 U		0.0006 U	
BROMOCHLOROMETHANE	0 / 7	0.001 : 0.002		0.000571429	0.000571429										
BROMOFORM	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
CARBON DISULFIDE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
CARBON TETRACHLORIDE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
CHLOROBENZENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
CHLORODIBROMOMETHANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
CHLOROETHANE	0 / 19	0.002 : 0.25		0.029526316	0.029526316		0.002 U	0.002 U		0.18 UJ	0.002 U	0.002 U		0.002 U	
CHLOROFORM	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
CYCLOHEXANE	0 / 7	0.001 : 0.002		0.000571429	0.000571429										
CYCLOHEXANE, METHYL-	0 / 7	0.001 : 0.002		0.000571429	0.000571429										
DICHLOROBROMOMETHANE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
DICHLORODIFLUOROMETHANE	0 / 19	0.002 : 0.12		0.015105263	0.015105263		0.002 U	0.002 U		0.092 UJ	0.002 U	0.002 U		0.002 U	
ETHYLBENZENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
ISOPROPYLBENZENE	0 / 7	0.001 : 0.002		0.000571429	0.000571429										
M+P-XYLENE	0 / 7	0.001 : 0.002		0.000571429	0.000571429										
METHYL ACETATE	0 / 19	0.002 : 0.12		0.015105263	0.015105263		0.002 U	0.002 U		0.092 U	0.002 U	0.002 U		0.002 U	
METHYL BROMIDE	0 / 19	0.002 : 0.12		0.015105263	0.015105263		0.002 U	0.002 U		0.092 UJ	0.002 U	0.002 U		0.002 U	
METHYL CHLORIDE	0 / 19	0.002 : 0.12		0.015105263	0.015105263		0.002 U	0.002 U		0.092 U	0.002 U	0.002 U		0.002 U	
METHYL ETHYL KETONE	0 / 19	0.004 : 0.25		0.030526316	0.030526316		0.005 U	0.005 U		0.18 U	0.004 U	0.005 U		0.005 U	
METHYL ISOBUTYL KETONE	0 / 19	0.003 : 0.18		0.022657895	0.022657895		0.003 U	0.003 U		0.14 U	0.003 U	0.004 U		0.004 U	
METHYLENE CHLORIDE	4 / 21	0.002 : 0.12	0.003 - 0.27	0.026857143	0.026857143		0.002 U	0.002 U		0.092 U	0.003	0.002 U		0.002 U	0.003 J
METHYL-T-BUTYL ETHER	0 / 19	0.0005 : 0.031		0.003778947	0.003778947		0.0006 U	0.0006 U		0.023 U	0.0006 U	0.0006 U		0.0006 U	
O-XYLENE	0 / 7	0.001 : 0.002		0.000571429	0.000571429										
STYRENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
t-Butyl Alcohol	0 / 19	0.022 : 1.2		0.151736842	0.151736842		0.023 U	0.023 U		0.92 U	0.022 U	0.024 U		0.023 U	
TETRACHLOROETHYLENE	1 / 19	0.001 : 0.061	0.033 - 0.033	0.009263158	0.009263158		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
TOLUENE	1 / 19	0.001 : 0.061	0.002 - 0.002	0.007631579	0.007631579		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
TRICHLOROETHYLENE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
TRICHLOROFLUOROMETHANE	0 / 19	0.002 : 0.12		0.015105263	0.015105263		0.002 U	0.002 U		0.092 U	0.002 U	0.002 U		0.002 U	

Table A-6
Summary of Analytical Results in Area 3 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	SRI-SS-1 SRI-SS-1-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-10 SRI-SS-10-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-11 SRI-SS-11-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-12 SRI-SS-12-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-13 SRI-SS-13-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-14 SRI-SS-14-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-15 SRI-SS-15-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-16 SRI-SS-16-0.5-1.0-8-20-09 8/20/2009 0.5-1	SRI-SS-16 SRI-SS-16-0-0.5-8-20-09 8/20/2009 0-0.5 ft	SRI-SS-2 SRI-SS-2-0-0.5-7-6-09 7/6/2009 0-0.5 ft
VINYL CHLORIDE	0 / 19	0.001 : 0.061		0.007552632	0.007552632		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
XYLENES,TOTAL	0 / 12	0.001 : 0.061		0.011625	0.011625		0.001 U	0.001 U		0.046 U	0.001 U	0.001 U		0.001 U	
Semivolatile Organics (mg/Kg)															
1,2,4,5-TETRACHLOROBENZENE	0 / 7	0.018 : 0.17		0.0435	0.0435										
1,2-DIPHENYLHYDRAZINE	0 / 11	0.037 : 0.043		0.019772727	0.019772727	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		
1,4-DIOXANE	0 / 7	0.11 : 1		0.213571429	0.213571429										
2,3,4,6-Tetrachlorophenol	0 / 7	0.072 : 0.68		0.142642857	0.142642857										
2,4,5-TRICHLOROPHENOL	0 / 23	0.018 : 0.17		0.040695652	0.040695652	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
2,4,6-TRICHLOROPHENOL	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
2,4-DICHLOROPHENOL	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
2,4-DIMETHYLPHENOL	0 / 23	0.018 : 0.17		0.040695652	0.040695652	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
2,4-DINITROPHENOL	0 / 23	0.32 : 3.1		0.473478261	0.473478261	0.79 UJ	0.81 UJ	0.8 UJ	0.81 UJ	0.74 UJ	0.78 UJ	0.85 UJ	0.78 U		0.8 UJ
2,4-DINITROTOLUENE	0 / 23	0.072 : 0.68		0.070869565	0.070869565	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
2,6-DINITROTOLUENE	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
2-CHLORONAPHTHALENE	0 / 7	0.008 : 0.071		0.019142857	0.019142857										
2-CHLOROPHENOL	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
2-METHYL-4,6-DINITROPHENOL	0 / 23	0.18 : 1.7		0.177391304	0.177391304	0.2 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.19 UJ	0.19 UJ	0.21 UJ	0.19 U		0.2 UJ
2-METHYLNAPHTHALENE	2 / 23	0.004 : 0.043	0.019 - 0.064	0.019804348	0.019804348	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
2-NITROANILINE	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
2-NITROPHENOL	0 / 7	0.018 : 0.17		0.038357143	0.038357143										
3,3-DICHLOROBENZIDINE	0 / 23	0.11 : 1		0.106304348	0.106304348	0.12 U	0.12 U	0.12 U	0.12 U	0.11 U	0.12 U	0.13 U	0.12 U		0.12 U
3-NITROANILINE	0 / 7	0.072 : 0.68		0.142642857	0.142642857										
4-BROMOPHENYL PHENYL ETHER	0 / 7	0.018 : 0.17		0.038357143	0.038357143										
4-CHLORO-3-METHYLPHENOL	0 / 23	0.018 : 0.17		0.040695652	0.040695652	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
4-CHLOROANILINE	0 / 7	0.018 : 0.17		0.0435	0.0435										
4-CHLOROPHENYL PHENYL ETHER	0 / 7	0.018 : 0.17		0.038357143	0.038357143										
4-NITROANILINE	0 / 7	0.072 : 0.68		0.142642857	0.142642857										
4-NITROPHENOL	0 / 7	0.18 : 1.7		0.357142857	0.357142857										
ACENAPHTHENE	0 / 23	0.004 : 0.043		0.017347826	0.017347826	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
ACENAPHTHYLENE	1 / 23	0.004 : 0.043	0.021 - 0.021	0.017847826	0.017847826	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
ACETOPHENONE	0 / 23	0.018 : 0.17		0.040695652	0.040695652	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
ANTHRACENE	1 / 23	0.004 : 0.043	0.02 - 0.02	0.017804348	0.017804348	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
ATRAZINE	0 / 7	0.036 : 0.34		0.072071429	0.072071429										
BENZALDEHYDE	0 / 23	0.072 : 0.68		0.070869565	0.070869565	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
BENZIDINE	0 / 23	0.76 : 7.1		0.962173913	0.962173913	1.4 UJ	1.4 UJ	1.4 UJ	1.4 UJ	1.3 UJ	1.4 UJ	1.5 UJ	1.4 UJ		1.4 UJ
BENZO(A)ANTHRACENE	6 / 23	0.034 : 0.04	0.008 - 0.091	0.025326087	0.025326087	0.091	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.046	0.039 U		0.04 U
BENZO(A)PYRENE	6 / 23	0.034 : 0.04	0.008 - 0.1	0.028934783	0.028934783	0.1	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.063	0.039 U		0.04 U
BENZO(B)FLUORANTHENE	7 / 23	0.034 : 0.04	0.016 - 0.15	0.037934783	0.037934783	0.15	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.099	0.039 U		0.04 U
BENZO(GHI)PERYLENE	7 / 23	0.036 : 0.04	0.006 - 0.097	0.030326087	0.030326087	0.082	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.06	0.039 U		0.04 U
BENZO(K)FLUORANTHENE	7 / 23	0.036 : 0.04	0.007 - 0.063	0.025543478	0.025543478	0.063	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.054	0.039 U		0.04 U
BENZYL BUTYL PHTHALATE	0 / 23	0.072 : 0.68		0.070869565	0.070869565	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
Biphenyl	2 / 23	0.018 : 0.17	0.066 - 7	0.330956522	0.330956522	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
BIS(2-CHLOROETHOXY) METHANE	0 / 7	0.018 : 0.17		0.038357143	0.038357143										
BIS(2-CHLOROETHYL) ETHER	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
Bis(2-chloroisopropyl) ether	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 UJ	0.04 UJ	0.04 UJ	0.04 UJ	0.037 UJ	0.039 UJ	0.043 UJ	0.039 U		0.04 UJ
BIS(2-CHLOROISOPROPYL)ETHER	0 / 7	0.018 : 0.17		0.038357143	0.038357143										
BIS(2-ETHYLHEXYL)PHTHALATE	2 / 23	0.072 : 0.68	0.11 - 0.27	0.084086957	0.084086957	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
CAPROLACTAM	0 / 23	0.036 : 0.34		0.035652174	0.035652174	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
CARBAZOLE	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
CHRYSENE	7 / 23	0.036 : 0.04	0.011 - 0.12	0.031021739	0.031021739	0.12	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.075	0.039 U		0.04 U
CRESOL,O	0 / 23	0.018 : 0.17		0.040695652	0.040695652	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
CRESOL,P	0 / 23	0.018 : 0.17		0.040695652	0.040695652	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
DIBENZO(A,H)ANTHRACENE	0 / 23	0.004 : 0.043		0.017347826	0.017347826	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U

Table A-6
Summary of Analytical Results in Area 3 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	Average Excluding 0 ND	SRI-SS-1 SRI-SS-1-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-10 SRI-SS-10-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-11 SRI-SS-11-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-12 SRI-SS-12-0-0.5-7-8-09 7/8/2009 0-0.5 ft	SRI-SS-13 SRI-SS-13-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-14 SRI-SS-14-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-15 SRI-SS-15-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-16 SRI-SS-16-0.5-1.0-8-20-09 8/20/2009 0.5-1	SRI-SS-16 SRI-SS-16-0-0.5-8-20-09 8/20/2009 0-0.5 ft	SRI-SS-2 SRI-SS-2-0-0.5-7-6-09 7/6/2009 0-0.5 ft
DIBENZOFURAN	0 / 7	0.018 : 0.17		0.038357143	0.038357143										
DIETHYL PHTHALATE	0 / 23	0.072 : 0.68		0.070869565	0.070869565	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
DIMETHYL PHTHALATE	0 / 23	0.072 : 0.68		0.070869565	0.070869565	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
DI-N-BUTYL PHTHALATE	0 / 23	0.072 : 0.68		0.070869565	0.070869565	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
DI-N-OCTYL PHTHALATE	0 / 23	0.072 : 0.68		0.070869565	0.070869565	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
FLUORANTHENE	8 / 23	0.034 : 0.04	0.011 - 0.19	0.038934783	0.038934783	0.19	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.12	0.039 U		0.04 U
FLUORENE	0 / 23	0.004 : 0.043		0.017347826	0.017347826	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
HEXACHLOROBENZENE	0 / 23	0.004 : 0.043		0.017347826	0.017347826	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
HEXACHLOROBUTADIENE	0 / 23	0.018 : 0.17		0.040695652	0.040695652	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		0.08 U
HEXACHLOROCYCLOPENTADIENE	0 / 23	0.18 : 1.7		0.177391304	0.177391304	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.21 U	0.19 UJ		0.2 U
HEXACHLOROETHANE	0 / 23	0.036 : 0.34		0.035652174	0.035652174	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
INDENO(1,2,3-CD)PYRENE	6 / 23	0.034 : 0.04	0.007 - 0.077	0.025108696	0.025108696	0.077	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.052	0.039 U		0.04 U
ISOPHORONE	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
NAPHTHALENE	0 / 23	0.004 : 0.043		0.017347826	0.017347826	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
NITROBENZENE	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
N-NITROSODIMETHYLAMINE	0 / 11	0.074 : 0.085		0.039545455	0.039545455	0.079 U	0.081 U	0.08 U	0.081 U	0.074 U	0.078 U	0.085 U	0.078 U		
N-NITROSODI-N-PROPYLAMINE	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
N-NITROSODIPHENYLAMINE	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
PENTACHLOROPHENOL	0 / 23	0.036 : 0.34		0.096869565	0.096869565	0.2 U	0.2 U	0.2 U	0.2 U	0.19 U	0.19 U	0.21 U	0.19 U		0.2 U
PHENANTHRENE	5 / 23	0.018 : 0.04	0.005 - 0.093	0.02423913	0.02423913	0.093	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.049	0.039 U		0.04 U
PHENOL	0 / 23	0.018 : 0.17		0.025391304	0.025391304	0.04 U	0.04 U	0.04 U	0.04 U	0.037 U	0.039 U	0.043 U	0.039 U		0.04 U
PYRENE	8 / 23	0.034 : 0.04	0.012 - 0.18	0.03776087	0.03776087	0.18	0.04 U	0.04 U	0.04 UJ	0.037 U	0.039 U	0.1	0.039 U		0.04 U
Inorganics (mg/Kg)															
ALUMINUM	18 / 18		1180 - 4730	2678.333333	2678.333333	4380	1830 J	1180 J	1350	1490 J	4730 J	1360 J	2480		2570
ANTIMONY	0 / 18	0.701 : 1.27		0.560611111	0.560611111	1.15 U	1.19 U	1.2 U	1.2 U	1.11 U	1.15 U	1.27 U	1.16 UJ		1.2 U
ARSENIC	14 / 18	1.05 : 1.21	1.15 - 9.36	2.721666667	2.721666667	2.25	1.15 J	1.14 U	1.14 U	1.05 U	2.52	1.21 U	2.35		1.55 J
BARIUM	18 / 18		4.04 - 17	8.558333333	8.558333333	17	6.46 J	5.13 J	5.81	4.04 J	7.81 J	4.63 J	5.85 J		9.31
BERYLLIUM	5 / 18	0.0752 : 0.0863	0.107 - 0.179	0.067469444	0.067469444	0.107 J	0.0807 U	0.0818 U	0.0813 U	0.0752 U	0.0783 U	0.0863 U	0.179 J		0.0816 U
CADMIUM	5 / 18	0.155 : 0.178	0.244 - 0.593	0.163361111	0.163361111	0.593	0.166 U	0.168 U	0.167 U	0.155 U	0.161 U	0.178 U	0.244 J		0.168 U
CALCIUM	13 / 18	23.53 : 49.9	17.2 - 1050	166.0147222	166.0147222	1050	21.8 J	24.4	60.4	25.6	27.7	26.2	45.2 J		49.9 U
CHROMIUM	18 / 18		3.15 - 45.8	10.21944444	10.21944444	45.8	5.22	3.15	3.21 J	3.51	9.41	3.93	6.42 J		5.48
COBALT	8 / 18	0.21 : 0.241	0.322 - 1.04	0.366527778	0.366527778	0.801	0.226 U	0.229 U	0.227 U	0.21 U	0.398 J	0.241 U	0.428		0.228 U
COPPER	15 / 18	16.1 : 27.9	5.65 - 185	36.29611111	36.29611111	185	5.65	6.5	19.6	14.4	6.72	22.7	97.2 J		16.1 U
IRON	18 / 18		1490 - 19700	7471.666667	7471.666667	18900	3870	1560	1490	2210	11100	6710	11300		3040
LEAD	18 / 18		3.1 - 29.7	12.23944444	12.23944444	26.4	3.29	3.1	4.27	3.56	7.66	9.72	8.99		6.12
MAGNESIUM	17 / 17		49.3 - 643	190.0529412	190.0529412	411 J	90.4	49.3		79.6	244	73.2	148		116 J
MANGANESE	18 / 18		5.96 - 33.9	18.58333333	18.58333333	33.9	11	12	5.96 J	9.04	25.4	11.2	33.7 J		14.2
MERCURY	4 / 18	0.0075 : 0.0137	0.0128 - 0.0283	0.0093	0.0093	0.0134 U	0.0136 U	0.0136 U	0.0137 U	0.0159 J	0.0128 J	0.0283 J	0.0132 U		0.0132 U
NICKEL	17 / 18	1.2 : 1.2	0.367 - 13.8	2.109277778	2.109277778	3.78	0.742 J	0.367 J	1.2 U	0.934 J	2.15	0.638 J	1.67 J		0.91 J
POTASSIUM	18 / 18		106 - 705	271.3888889	271.3888889	484	138	136	158 J	106	247	121	299		302
SELENIUM	0 / 18	0.722 : 1.24		0.550694444	0.550694444	1.13 U	1.16 U	1.18 U	1.17 U	1.08 U	1.13 U	1.24 U	1.13 U		1.18 U
SILVER	1 / 18	0.0882 : 0.228	0.399 - 0.399	0.115163889	0.115163889	0.399 J	0.214 U	0.217 U	0.215 U	0.199 U	0.207 U	0.228 U	0.208 U		0.216 U
SODIUM	4 / 18	41.3 : 47.3	35.3 - 69.5	28.83333333	28.83333333	69.5 J	44.3 U	44.9 U	44.6 U	41.3 U	42.9 U	47.3 U	43.2 U		44.8 U
THALLIUM	0 / 18	0.382 : 1.84		0.776527778	0.776527778	1.67 U	1.72 U	1.74 U	1.73 U	1.6 U	1.67 U	1.84 U	1.68 U		1.74 U
VANADIUM	18 / 18		4.53 - 40	14.18611111	14.18611111	23.8 J	7.95	4.96	4.53	8.25	18.2	6.59	18.9 J		8.83 J
ZINC	13 / 18	7.69 : 12.7	8.32 - 306	54.61972222	54.61972222	306	8.34	15.8	11.2 J	12.3	30.5	11.5	24.3 J		7.69 U
Moisture **(%)**	24 / 24		3.4 - 22	13.56666667	13.56666667	15.9	17.4	16.9	17.2	10.5	14	22	14.5	14.9	16.7
PH **(pH units)**	2 / 2		5.91 - 6.69	6.3	6.3										

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated
E = exceeds the calibration range

Table A-6
Summary of Analytical Results in Area 3 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-3 SRI-SS-3-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-37 SRI-SS-37-0-24-071211 7/12/2011 0-2 ft	SRI-SS-37 SRI-SS-37-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-38 SRI-SS-38-0-24-071211 7/12/2011 0-2 ft	SRI-SS-38 SRI-SS-38-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-4 SRI-SS-4-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-48 SRI-SS-48-A-092412 9/24/2012 0-0.5 ft	SRI-SS-49 SRI-SS-49-A-092412 9/24/2012 0-0.5 ft	SRI-SS-5 SRI-SS-5-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-50 SRI-SS-50-A-092412 9/24/2012 0-0.5 ft	SRI-SS-51 SRI-SS-51-A-092412 9/24/2012 0-0.5 ft	SRI-SS-52 SRI-SS-52-A-092412 9/24/2012 0-0.5 ft	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-7 SRI-SS-7-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-8 SRI-SS-8-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-9 SRI-SS-9-0-0.5-7-7-09 7/7/2009 0-0.5 ft
Volatile Organics (mg/Kg)																
1,1,1-TRICHLOROETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,1,2,2-TETRACHLOROETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 J	0.061 U	0.001 U	0.001 UJ	0.001 U		0.001 U	0.055 U	0.001 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE			0.002 U		0.002 U		0.004 U	0.003 U		0.002 U	0.002 U	0.003 U				
1,1,2-TRICHLOROETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,1-DICHLOROETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,1-DICHLOROETHYLENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,2,3-TRICHLOROBENZENE			0.001 U		0.001 U		0.002 U	0.001 UJ		0.001 U	0.001 UJ	0.001 U				
1,2,4-TRICHLOROBENZENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 UJ	0.061 U	0.001 U	0.001 UJ	0.001 U		0.001 U	0.055 U	0.001 U
1,2-CIS-DICHLOROETHYLENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,2-DIBROMO-3-CHLOROPROPANE	0.11 U		0.002 U		0.002 U	0.11 U	0.004 U	0.003 UJ	0.12 U	0.002 U	0.002 UJ	0.003 U		0.002 U	0.11 U	0.002 U
1,2-DIBROMOETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,2-DICHLOROBENZENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 UJ	0.061 U	0.001 U	0.001 UJ	0.001 U		0.001 U	0.055 U	0.001 U
1,2-DICHLOROETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,2-DICHLOROPROPANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,2-TRANS-DICHLOROETHYLENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,3-CIS-DICHLOROPROPYLENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,3-DICHLOROBENZENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 UJ	0.061 U	0.001 U	0.001 UJ	0.001 U		0.001 U	0.055 U	0.001 U
1,3-TRANS-DICHLOROPROPYLENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
1,4-DICHLOROBENZENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 UJ	0.061 U	0.001 U	0.001 UJ	0.001 U		0.001 U	0.055 U	0.001 U
1,4-DIOXANE			0.076 U		0.077 U		0.14 U	0.09 U		0.077 U	0.087 U	0.1 U				
2-HEXANONE			0.003 U		0.003 U		0.006 U	0.004 U		0.003 U	0.004 U	0.004 U				
ACETONE	4 J		0.013		0.008 U	0.44 J	0.014 U	0.016	14 J	0.012	0.038	0.023		0.008 U	7 J	0.036 U
ACROLEIN	1.1 U		0.022 U		0.022 U	1.1 U	0.039 U	0.026 U	1.2 U	0.022 U	0.025 U	0.029 U		0.023 UJ	1.1 U	0.023 UJ
ACRYLONITRILE	0.23 U		0.004 U		0.004 U	0.21 U	0.008 U	0.005 U	0.25 U	0.004 U	0.005 U	0.006 U		0.005 U	0.22 U	0.005 U
BENZENE	0.028 U		0.0007		0.0005 U	0.026 U	0.001 U	0.0006 U	0.031 U	0.0005 U	0.0006 U	0.0007 U		0.0006 U	0.027 U	0.0006 U
BROMOCHLOROMETHANE			0.001 U		0.001 U		0.002 U	0.001 U		0.001 U	0.001 U	0.001 U				
BROMOFORM	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
CARBON DISULFIDE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
CARBON TETRACHLORIDE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
CHLOROBENZENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
CHLORODIBROMOMETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
CHLOROETHANE	0.23 U		0.002 U		0.002 U	0.21 U	0.004 U	0.003 U	0.25 U	0.002 U	0.002 U	0.003 U		0.002 U	0.22 UJ	0.002 U
CHLOROFORM	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
CYCLOHEXANE			0.001 U		0.001 U		0.002 U	0.001 U		0.001 U	0.001 U	0.001 U				
CYCLOHEXANE, METHYL-			0.001 U		0.001 U		0.002 U	0.001 U		0.001 U	0.001 U	0.001 U				
DICHLOROBROMOMETHANE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
DICHLORODIFLUOROMETHANE	0.11 U		0.002 U		0.002 U	0.11 U	0.004 U	0.003 U	0.12 U	0.002 U	0.002 U	0.003 U		0.002 U	0.11 UJ	0.002 U
ETHYLBENZENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
ISOPROPYLBENZENE			0.001 U		0.001 U		0.002 U	0.001 U		0.001 U	0.001 U	0.001 U				
M+P-XYLENE			0.001 U		0.001 U		0.002 U	0.001 U		0.001 U	0.001 U	0.001 U				
METHYL ACETATE	0.11 U		0.002 U		0.002 U	0.11 U	0.004 U	0.003 U	0.12 U	0.002 U	0.002 U	0.003 U		0.002 U	0.11 U	0.002 U
METHYL BROMIDE	0.11 U		0.002 U		0.002 U	0.11 U	0.004 U	0.003 U	0.12 U	0.002 U	0.002 U	0.003 U		0.002 U	0.11 UJ	0.002 U
METHYL CHLORIDE	0.11 U		0.002 U		0.002 U	0.11 U	0.004 U	0.003 U	0.12 U	0.002 U	0.002 U	0.003 U		0.002 U	0.11 U	0.002 U
METHYL ETHYL KETONE	0.23 U		0.004 U		0.004 U	0.21 U	0.008 U	0.005 U	0.25 U	0.004 U	0.005 U	0.006 U		0.005 U	0.22 U	0.005 U
METHYL ISOBUTYL KETONE	0.17 U		0.003 U		0.003 U	0.16 U	0.006 U	0.004 U	0.18 U	0.003 U	0.004 U	0.004 U		0.004 UJ	0.16 U	0.003 U
METHYLENE CHLORIDE	0.11 U		0.002 U		0.002 U	0.11 U	0.004 U	0.003 U	0.12 U	0.002 U	0.002 U	0.003 U	0.003 J	0.27	0.11 U	0.002 U
METHYL-T-BUTYL ETHER	0.028 U		0.0005 U		0.0005 U	0.026 U	0.001 U	0.0006 U	0.031 U	0.0005 U	0.0006 U	0.0007 U		0.0006 UJ	0.027 U	0.0006 U
O-XYLENE			0.001 U		0.001 U		0.002 U	0.001 U		0.001 U	0.001 U	0.001 U				
STYRENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
t-Butyl Alcohol	1.1 U		0.022 U		0.022 U	1.1 U	0.039 U	0.026 U	1.2 U	0.022 U	0.025 U	0.029 U		0.023 U	1.1 U	0.023 U
TETRACHLOROETHYLENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.033	0.055 U	0.001 U
TOLUENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.002	0.001 U		0.001 U	0.055 U	0.001 U
TRICHLOROETHYLENE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
TRICHLOROFLUOROMETHANE	0.11 U		0.002 U		0.002 U	0.11 U	0.004 U	0.003 U	0.12 U	0.002 U	0.002 U	0.003 U		0.002 U	0.11 U	0.002 U

Table A-6
Summary of Analytical Results in Area 3 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-3 SRI-SS-3-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-37 SRI-SS-37-0-24-071211 7/12/2011 0-2 ft	SRI-SS-37 SRI-SS-37-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-38 SRI-SS-38-0-24-071211 7/12/2011 0-2 ft	SRI-SS-38 SRI-SS-38-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-4 SRI-SS-4-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-48 SRI-SS-48-A-092412 9/24/2012 0-0.5 ft	SRI-SS-49 SRI-SS-49-A-092412 9/24/2012 0-0.5 ft	SRI-SS-5 SRI-SS-5-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-50 SRI-SS-50-A-092412 9/24/2012 0-0.5 ft	SRI-SS-51 SRI-SS-51-A-092412 9/24/2012 0-0.5 ft	SRI-SS-52 SRI-SS-52-A-092412 9/24/2012 0-0.5 ft	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-7 SRI-SS-7-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-8 SRI-SS-8-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-9 SRI-SS-9-0-0.5-7-7-09 7/7/2009 0-0.5 ft
VINYL CHLORIDE	0.057 U		0.001 U		0.001 U	0.053 U	0.002 U	0.001 U	0.061 U	0.001 U	0.001 U	0.001 U		0.001 U	0.055 U	0.001 U
XYLENES,TOTAL	0.057 U					0.053 U			0.061 U					0.001 U	0.055 U	0.001 U
Semivolatile Organics (mg/Kg)																
1,2,4,5-TETRACHLOROBENZENE		0.073 U		0.072 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
1,2-DIPHENYLHYDRAZINE														0.038 U	0.039 U	0.04 U
1,4-DIOXANE		0.11 U		0.11 U			0.56 U	0.54 U		0.11 U	0.56 U	1 U				
2,3,4,6-Tetrachlorophenol		0.073 U		0.072 U			0.37 U	0.36 U		0.072 U	0.37 U	0.68 U				
2,4,5-TRICHLOROPHENOL	0.075 U	0.073 U		0.072 U		0.078 U	0.093 U	0.09 U	0.08 U	0.018 U	0.093 U	0.17 U	0.08 U	0.076 U	0.079 U	0.079 U
2,4,6-TRICHLOROPHENOL	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
2,4-DICHLOROPHENOL	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
2,4-DIMETHYLPHENOL	0.075 U	0.073 U		0.072 U		0.078 U	0.093 U	0.09 U	0.08 U	0.018 U	0.093 U	0.17 U	0.08 U	0.076 U	0.079 U	0.079 U
2,4-DINITROPHENOL	0.75 UJ	0.37 U		0.36 U		0.78 UJ	1.7 U	1.6 U	0.8 UJ	0.32 U	1.7 U	3.1 U	0.8 UJ	0.76 UJ	0.79 UJ	0.79 UJ
2,4-DINITROTOLUENE	0.075 U	0.073 U		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.079 U	0.079 U
2,6-DINITROTOLUENE	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
2-CHLORONAPHTHALENE		0.037 U		0.036 U			0.039 U	0.038 U		0.008 U	0.039 U	0.071 U				
2-CHLOROPHENOL	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
2-METHYL-4,6-DINITROPHENOL	0.19 UJ	0.18 U		0.18 U		0.2 UJ	0.93 U	0.9 U	0.2 UJ	0.18 U	0.93 U	1.7 U	0.2 UJ	0.19 UJ	0.2 UJ	0.2 UJ
2-METHYLNAPHTHALENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019	0.018 U	0.04 U	0.004 U	0.019 U	0.064	0.04 U	0.038 U	0.039 U	0.04 U
2-NITROANILINE	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
2-NITROPHENOL		0.037 U		0.036 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
3,3-DICHLOROBENZIDINE	0.11 U	0.11 U		0.11 U		0.12 U	0.56 U	0.54 U	0.12 U	0.11 U	0.56 U	1 U	0.12 U	0.11 U	0.12 U	0.12 U
3-NITROANILINE		0.073 U		0.072 U			0.37 U	0.36 U		0.072 U	0.37 U	0.68 U				
4-BROMOPHENYL PHENYL ETHER		0.037 U		0.036 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
4-CHLORO-3-METHYLPHENOL	0.075 U	0.073 U		0.072 U		0.078 U	0.093 U	0.09 U	0.08 U	0.018 U	0.093 U	0.17 U	0.08 U	0.076 U	0.079 U	0.079 U
4-CHLOROANILINE		0.073 U		0.072 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
4-CHLOROPHENYL PHENYL ETHER		0.037 U		0.036 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
4-NITROANILINE		0.073 U		0.072 U			0.37 U	0.36 U		0.072 U	0.37 U	0.68 U				
4-NITROPHENOL		0.18 U		0.18 U			0.93 U	0.9 U		0.18 U	0.93 U	1.7 U				
ACENAPHTHENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019 U	0.018 U	0.04 U	0.004 U	0.019 U	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
ACENAPHTHYLENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019 U	0.018 U	0.04 U	0.004 U	0.021	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
ACETOPHENONE	0.075 U	0.073 U		0.072 U		0.078 U	0.093 U	0.09 U	0.08 U	0.018 U	0.093 U	0.17 U	0.08 U	0.076 U	0.079 U	0.079 U
ANTHRACENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019 U	0.018 U	0.04 U	0.004 U	0.02	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
ATRAZINE		0.037 U		0.036 U			0.19 U	0.18 U		0.036 U	0.19 U	0.34 U				
BENZALDEHYDE	0.075 U	0.073 U		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.079 U	0.079 U
BENZIDINE	1.3 UJ	1.3 U		1.3 U		1.4 UJ	3.9 U	3.8 U	1.4 UJ	0.76 U	3.9 U	7.1 U	1.4 UJ	1.3 UJ	1.4 UJ	1.4 UJ
BENZO(A)ANTHRACENE	0.037 U	0.037 U		0.036 U		0.039 U	0.036	0.019	0.04 U	0.008	0.055	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
BENZO(A)PYRENE	0.037 U	0.037 U		0.036 U		0.039 U	0.047	0.029	0.04 U	0.008	0.091	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
BENZO(B)FLUORANTHENE	0.037 U	0.037 U		0.036 U		0.039 U	0.06	0.062	0.04 U	0.016	0.13	0.034 U	0.04 U	0.038 U	0.039 U	0.048
BENZO(GHI)PERYLENE	0.037 U	0.037 U		0.036 U		0.039 U	0.038	0.032	0.04 U	0.006	0.097	0.072	0.04 U	0.038 U	0.039 U	0.04 U
BENZO(K)FLUORANTHENE	0.037 U	0.037 U		0.036 U		0.039 U	0.046	0.027	0.04 U	0.007	0.046	0.034	0.04 U	0.038 U	0.039 U	0.04 U
BENZYL BUTYL PHTHALATE	0.075 U	0.073 U		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.079 U	0.079 U
Biphenyl	0.037 U	7		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.066	0.04 U
BIS(2-CHLOROETHOXY) METHANE		0.037 U		0.036 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
BIS(2-CHLOROETHYL) ETHER	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
Bis(2-chloroisopropyl) ether	0.037 UJ	0.037 U		0.036 U		0.039 UJ	0.093 U	0.09 U	0.04 UJ	0.018 U	0.093 U	0.17 U	0.04 UJ	0.038 UJ	0.039 UJ	0.04 UJ
BIS(2-CHLOROISOPROPYL)ETHER		0.037 U		0.036 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
BIS(2-ETHYLHEXYL)PHTHALATE	0.075 U	0.27		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.11	0.079 U
CAPROLACTAM	0.037 U	0.037 U		0.036 U		0.039 U	0.19 U	0.18 U	0.04 U	0.036 U	0.19 U	0.34 U	0.04 U	0.038 U	0.039 U	0.04 U
CARBAZOLE	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
CHRYSENE	0.037 U	0.037 U		0.036 U		0.039 U	0.047	0.039	0.04 U	0.011	0.073	0.038	0.04 U	0.038 U	0.039 U	0.04 U
CRESOL,O	0.075 U	0.073 U		0.072 U		0.078 U	0.093 U	0.09 U	0.08 U	0.018 U	0.093 U	0.17 U	0.08 U	0.076 U	0.079 U	0.079 U
CRESOL,P	0.075 U	0.073 U		0.072 U		0.078 U	0.093 U	0.09 U	0.08 U	0.018 U	0.093 U	0.17 U	0.08 U	0.076 U	0.079 U	0.079 U
DIBENZO(A,H)ANTHRACENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019 U	0.018 U	0.04 U	0.004 U	0.019 U	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U

Table A-6
Summary of Analytical Results in Area 3 Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

chemical_name	SRI-SS-3 SRI-SS-3-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-37 SRI-SS-37-0-24-071211 7/12/2011 0-2 ft	SRI-SS-37 SRI-SS-37-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-38 SRI-SS-38-0-24-071211 7/12/2011 0-2 ft	SRI-SS-38 SRI-SS-38-0-6-071211 7/12/2011 0-0.5 ft	SRI-SS-4 SRI-SS-4-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-48 SRI-SS-48-A-092412 9/24/2012 0-0.5 ft	SRI-SS-49 SRI-SS-49-A-092412 9/24/2012 0-0.5 ft	SRI-SS-5 SRI-SS-5-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-50 SRI-SS-50-A-092412 9/24/2012 0-0.5 ft	SRI-SS-51 SRI-SS-51-A-092412 9/24/2012 0-0.5 ft	SRI-SS-52 SRI-SS-52-A-092412 9/24/2012 0-0.5 ft	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-7 SRI-SS-7-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-8 SRI-SS-8-0-0.5-7-7-09 7/7/2009 0-0.5 ft	SRI-SS-9 SRI-SS-9-0-0.5-7-7-09 7/7/2009 0-0.5 ft
DIBENZOFURAN		0.037 U		0.036 U			0.093 U	0.09 U		0.018 U	0.093 U	0.17 U				
DIETHYL PHTHALATE	0.075 U	0.073 U		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.079 U	0.079 U
DIMETHYL PHTHALATE	0.075 U	0.073 U		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.079 U	0.079 U
DI-N-BUTYL PHTHALATE	0.075 U	0.073 U		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.079 U	0.079 U
DI-N-OCTYL PHTHALATE	0.075 U	0.073 U		0.072 U		0.078 U	0.37 U	0.36 U	0.08 U	0.072 U	0.37 U	0.68 U	0.08 U	0.076 U	0.079 U	0.079 U
FLUORANTHENE	0.037 U	0.037 U		0.036 U		0.039 U	0.073	0.039	0.046	0.011	0.087	0.034 U	0.04 U	0.038 U	0.039 U	0.042
FLUORENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019 U	0.018 U	0.04 U	0.004 U	0.019 U	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
HEXACHLOROBENZENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019 U	0.018 U	0.04 U	0.004 U	0.019 U	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
HEXACHLOROBUTADIENE	0.075 U	0.073 U		0.072 U		0.078 U	0.093 U	0.09 U	0.08 U	0.018 U	0.093 U	0.17 U	0.08 U	0.076 U	0.079 U	0.079 U
HEXACHLOROCYCLOPENTADIENE	0.19 U	0.18 U		0.18 U		0.2 U	0.93 U	0.9 U	0.2 U	0.18 U	0.93 U	1.7 U	0.2 U	0.19 U	0.2 U	0.2 U
HEXACHLOROETHANE	0.037 U	0.037 U		0.036 U		0.039 U	0.19 U	0.18 U	0.04 U	0.036 U	0.19 U	0.34 U	0.04 U	0.038 U	0.039 U	0.04 U
INDENO(1,2,3-CD)PYRENE	0.037 U	0.037 U		0.036 U		0.039 U	0.033	0.02	0.04 U	0.007	0.061	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
ISOPHORONE	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
NAPHTHALENE	0.037 U	0.037 U		0.036 U		0.039 U	0.019 U	0.018 U	0.04 U	0.004 U	0.019 U	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
NITROBENZENE	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
N-NITROSODIMETHYLAMINE														0.076 U	0.079 U	0.079 U
N-NITROSODI-N-PROPYLAMINE	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
N-NITROSODIPHENYLAMINE	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
PENTACHLOROPHENOL	0.19 U	0.18 U		0.18 U		0.2 U	0.19 U	0.18 U	0.2 U	0.036 U	0.19 U	0.34 U	0.2 U	0.19 U	0.2 U	0.2 U
PHENANTHRENE	0.037 U	0.037 U		0.036 U		0.039 U	0.04	0.018 U	0.04 U	0.005	0.034	0.034 U	0.04 U	0.038 U	0.039 U	0.04 U
PHENOL	0.037 U	0.037 U		0.036 U		0.039 U	0.093 U	0.09 U	0.04 U	0.018 U	0.093 U	0.17 U	0.04 U	0.038 U	0.039 U	0.04 U
PYRENE	0.037 U	0.037 U		0.036 U		0.039 U	0.068	0.037	0.041	0.012	0.1	0.034 U	0.04 U	0.038 U	0.039 U	0.043
Inorganics (mg/Kg)																
ALUMINUM	4100	3040		2550		2860			2360				2530	2760 J	2200 J	4440 J
ANTIMONY	1.11 U	0.721 U		0.701 U		1.16 U			1.19 U				1.18 U	1.14 U	1.18 U	1.17 U
ARSENIC	7.91	2.75		2.34		1.5 J			1.93 J				1.84 J	1.73 J	9.36	7.54
BARIUM	11.7	11		10.1		9.15			7.71				9.01	9.46 J	7.48 J	12.4 J
BERYLLIUM	0.0755 U	0.157		0.125		0.0792 U			0.0808 U				0.0801 U	0.0777 U	0.0804 U	0.127 J
CADMIUM	0.155 U	0.327		0.362		0.163 U			0.166 U				0.165 U	0.16 U	0.165 U	0.346 J
CALCIUM	23.9 U	868		548		23.53 U			25.6 U				47 U	17.2 J	46.8	142
CHROMIUM	11.1	13.9		9.19		5.95			8.76				5.78	8.24	19.3	15.6
COBALT	0.211 U	0.913		0.996		0.221 U			0.226 U				0.224 U	0.322 J	1.04	0.578
COPPER	21.8 U	30.4		42.8		27.9 U			34.3				36.3	9.56 J	36.4	72.9
IRON	13200	6190		7080		3670 J			5810 J				3810	6360	8490	19700
LEAD	12.7	29.7		18.4		5.43			17.9				9.28	5.79	28.6	19.4
MAGNESIUM	233 J	432		643		117 J			95.4 J				106 J	101 J	104	188
MANGANESE	24.3	24.1		25.8		14.6			12.1				16.6	21.5 J	17	22.1
MERCURY	0.0125 U	0.0201		0.0075 U		0.0134 U			0.0131 U				0.0137 U	0.0129 U	0.0136 U	0.0132 U
NICKEL	1.18	2.58		2.48		1.01 J			1 J				0.89 J	0.986 J	13.8	2.25
POTASSIUM	705	280		267		270			237				288	309 J	179	359
SELENIUM	1.09 U	0.743 U		0.722 U		1.14 U			1.16 U				1.15 U	1.12 U	1.16 U	1.14 U
SILVER	0.2 U	0.0907 U		0.0882 U		0.21 U			0.214 U				0.212 U	0.206 U	0.213 U	0.21 U
SODIUM	41.4 U	35.3		48.6		59 J			44.3 U				44 U	42.6 U	44.1 U	43.5 U
THALLIUM	1.61 U	0.393 U		0.382 U		1.69 U			1.72 U				1.71 U	1.66 U	1.71 U	1.69 U
VANADIUM	17 J	21		18.3		9.44 J			12 J				11.3 J	13.9	10.4	40
ZINC	11.2 U	193		157		11.7 U			12.7 U				12.5 U	8.32	61	116
Moisture **(%)**	10.8	9.4		8.6		15	11.6	9.1	16.7	8.9	11.5	3.4	16.8	12.5	15.4	15.9
PH **(pH units)**		5.91		6.69												

mg/Kg = milligram per kilogram

U = not detected, value is the reporting limit
J = value is estimated
E = exceeds the calibration range

Prepared by / Date: KJC 05/01/14
Checked by / Date: MJM 8/15/14

Table A-7
Summary of Analytical Results in Soil (0-10 ft) - Sewer Line Area
CPS / Madison Superfund Site
Old Bridge, NJ

Chemical Name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB22 RDSB22-120403-3.8 12/4/2003 3-5 ft	RDSB22 RDSB22-120403-5.3 12/4/2003 4-6 ft	RDSB22 RDSB22-120403-7.3 12/4/2003 6-8 ft	RDSB22 RDSB22-120403-9.5 12/4/2003 8.5-10.5 ft	SRI-21 CPS-SRI-21-4-7-27-09 7/27/2009 3-5 ft	SRI-21 CPS-SRI-21-8-7-27-09 7/27/2009 7-9 ft	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-H-092612 9/26/2012 3.5-4 ft	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-6 SRI-SS-6-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft
Volatile Organics (mg/Kg)																	
1,1,1,2-TETRACHLOROETHANE	0 / 5	0.14 : 0.69		0.127	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U								
1,1,1-TRICHLOROETHANE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,1,2,2-TETRACHLOROETHANE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0 / 1	0.003 : 0.003		0.0015									0.003 U				
1,1,2-TRICHLOROETHANE	1 / 8	0.001 : 0.69	0.29 - 0.29	0.1131875	0.14 U	0.14 U	0.69 U	0.15 U	0.29	0.057 U	0.053 U		0.001 U				
1,1-DICHLOROETHANE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,1-DICHLOROETHYLENE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,2,3-TRICHLOROBENZENE	0 / 1	0.001 : 0.001		0.0005									0.001 U				
1,2,4-TRICHLOROBENZENE	1 / 3	0.001 : 0.057	0.078 - 0.078	0.035666667						0.057 U	0.078		0.001 U				
1,2-CIS-DICHLOROETHYLENE	3 / 8	0.001 : 0.69	0.27 - 1.3	0.3305	0.14 U	0.14 U	0.69 U	0.27	0.56	0.057 U	1.3		0.001 U				
1,2-DIBROMO-3-CHLOROPROPANE	0 / 3	0.003 : 0.11		0.037166667						0.11 U	0.11 U		0.003 U				
1,2-DIBROMOETHANE	0 / 3	0.001 : 0.057		0.0185						0.057 U	0.053 U		0.001 U				
1,2-DICHLOROBENZENE	7 / 8	0.001 : 0.001	0.061 - 26	4.0301875	0.54	0.46	3.2	1.4	26	0.061	0.58		0.001 U				
1,2-DICHLOROETHANE	2 / 8	0.001 : 0.69	1.8 - 4.1	0.8050625	0.14 U	0.14 U	0.69 U	1.8	4.1	0.057 U	0.053 U		0.001 U				
1,2-DICHLOROPROPANE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,2-TRANS-DICHLOROETHYLENE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,3-CIS-DICHLOROPROPYLENE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,3-DICHLOROBENZENE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,3-TRANS-DICHLOROPROPYLENE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
1,4-DICHLOROBENZENE	4 / 8	0.001 : 0.69	0.08 - 0.89	0.2600625	0.22	0.14 U	0.69 U	0.15 U	0.89	0.4	0.08		0.001 U				
1,4-DIOXANE	0 / 1	0.094 : 0.094		0.047									0.094 U				
2-HEXANONE	0 / 1	0.004 : 0.004		0.002									0.004 U				
ACETONE	2 / 9	0.37 : 4.8	0.032 - 0.032	0.544333333	1 U	1 U	4.8 U	1 U	1.1 U	0.4 U	0.37 U		0.032				0.032 J
ACROLEIN	0 / 3	0.027 : 1.1		0.371166667						1.1 U	1.1 U		0.027 U				
ACRYLONITRILE	0 / 8	0.005 : 2.8		0.3496875	0.58 U	0.57 U	2.8 U	0.6 U	0.6 U	0.23 U	0.21 U		0.005 U				
BENZENE	8 / 8		0.001 - 12	3.845125	0.4	0.71	6.7	4	6.3	0.65	12		0.001				
BROMOCHLOROMETHANE	0 / 6	0.001 : 0.69		0.105916667	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U				0.001 U				
BROMOFORM	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
CARBON DISULFIDE	0 / 3	0.001 : 0.057		0.0185						0.057 U	0.053 U		0.001 U				
CARBON TETRACHLORIDE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
CHLOROBENZENE	5 / 8	0.001 : 0.69	0.38 - 6.7	1.2144375	0.51	0.14 U	0.69 U	1	6.7	0.71	0.38		0.001 U				
CHLORODIBROMOMETHANE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
CHLOROETHANE	0 / 8	0.003 : 1.4		0.1751875	0.29 U	0.29 U	1.4 U	0.3 U	0.3 U	0.11 U	0.11 U		0.003 U				
CHLOROFORM	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
CYCLOHEXANE	0 / 1	0.001 : 0.001		0.0005									0.001 U				
CYCLOHEXANE, METHYL-	0 / 1	0.001 : 0.001		0.0005									0.001 U				
DICHLOROBROMOMETHANE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
DICHLORODIFLUOROMETHANE	0 / 3	0.003 : 0.11		0.037166667						0.11 U	0.11 U		0.003 U				
ETHYLBENZENE	7 / 8	0.001 : 0.001	0.71 - 39	6.8138125	3.2	2.9	39	2.1	4.9	1.7	0.71		0.001 U				
ISOPROPYLBENZENE	0 / 1	0.001 : 0.001		0.0005									0.001 U				
M+P-XYLENE	0 / 1	0.001 : 0.001		0.0005									0.001 U				
METHYL ACETATE	0 / 3	0.003 : 0.11		0.037166667						0.11 U	0.11 U		0.003 U				
METHYL BROMIDE	0 / 8	0.003 : 1.4		0.1751875	0.29 U	0.29 U	1.4 U	0.3 U	0.3 U	0.11 U	0.11 U		0.003 U				
METHYL CHLORIDE	0 / 8	0.003 : 1.4		0.1751875	0.29 U	0.29 U	1.4 U	0.3 U	0.3 U	0.11 U	0.11 U		0.003 U				
METHYL ETHYL KETONE	0 / 3	0.005 : 0.23		0.074166667						0.23 U	0.21 U		0.005 U				
METHYL ISOBUTYL KETONE	0 / 3	0.004 : 0.17		0.055666667						0.17 U	0.16 U		0.004 U				
METHYLENE CHLORIDE	6 / 10	0.003 : 0.29	0.002 - 32	5.32015	0.29 U	0.94	5	15	32	0.11 U	0.11 U		0.003 U			0.003 J	0.002 J
METHYL-T-BUTYL ETHER	0 / 3	0.0007 : 0.029		0.009283333						0.029 U	0.026 U		0.0007 U				
O-XYLENE	5 / 6	0.001 : 0.001	3.1 - 54	12.26675	3.5	4.1	54	3.1	8.9				0.001 U				
STYRENE	0 / 3	0.001 : 0.057		0.0185						0.057 U	0.053 U		0.001 U				
t-Butyl Alcohol	0 / 3	0.027 : 1.1		0.371166667						1.1 U	1.1 U		0.027 U				
TETRACHLOROETHYLENE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
TOLUENE	7 / 8	0.001 : 0.001	5.1 - 270	50.2250625	20	28	270	27	43	8.7	5.1		0.001 U				
TRICHLOROETHYLENE	4 / 8	0.001 : 0.14	0.15 - 2.7	0.6369375	0.14 U	0.15	2.7	0.62	1.5	0.057 U	0.053 U		0.001 U				
TRICHLOROFLUOROMETHANE	0 / 3	0.003 : 0.11		0.037166667						0.11 U	0.11 U		0.003 U				
VINYL CHLORIDE	0 / 8	0.001 : 0.69		0.0863125	0.14 U	0.14 U	0.69 U	0.15 U	0.15 U	0.057 U	0.053 U		0.001 U				
XYLENES,TOTAL	7 / 7		3 - 170	34.71428571	14	13	170	9.5	24	9.5	3						
Semivolatile Organics (mg/Kg)																	
1,2,4,5-TETRACHLOROBENZENE	0 / 1	0.079 : 0.079		0.0395								0.079 U					
1,2-DIPHENYLHYDRAZINE	0 / 1	0.038 : 0.038		0.019													0.038 U
1,4-DIOXANE	0 / 1	0.12 : 0.12		0.06								0.12 U					
2,3,4,6-Tetrachlorophenol	0 / 1	0.079 : 0.079		0.0395								0.079 U					
2,4,5-TRICHLOROPHENOL	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U

Table A-7
Summary of Analytical Results in Soil (0-10 ft) - Sewer Line Area
CPS / Madison Superfund Site
Old Bridge, NJ

Chemical Name	Frequency of Detection	Range or Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	RDSB22 RDSB22-120403-2.0 12/4/2003 1-3 ft	RDSB22 RDSB22-120403-3.8 12/4/2003 3-5 ft	RDSB22 RDSB22-120403-5.3 12/4/2003 4-6 ft	RDSB22 RDSB22-120403-7.3 12/4/2003 6-8 ft	RDSB22 RDSB22-120403-9.5 12/4/2003 8.5-10.5 ft	SRI-21 CPS-SRI-21-4-7-27-09 7/27/2009 3-5 ft	SRI-21 CPS-SRI-21-8-7-27-09 7/27/2009 7-9 ft	SRI-SS-29 SRI-SS-29-0-24-071111 7/11/2011 0-2 ft	SRI-SS-29 SRI-SS-29-18-24-071111 7/11/2011 1.5-2 ft	SRI-SS-54 SRI-SS-54-A-092612 9/26/2012 0-0.5 ft	SRI-SS-54 SRI-SS-54-H-092612 9/26/2012 3.5-4 ft	SRI-SS-6 SRI-SS-6-0-0.5-7-6-09 7/6/2009 0-0.5 ft	SRI-SS-6 SRI-SS-6-3.5-4.0-7-6-09 7/6/2009 3.5-4 ft
2,4,6-TRICHLOROPHENOL	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
2,4-DICHLOROPHENOL	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
2,4-DIMETHYLPHENOL	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
2,4-DINITROPHENOL	1 / 3	0.77 : 0.8	0.42 - 0.42	0.401666667								0.42				0.8 UJ	0.77 UJ
2,4-DINITROTOLUENE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
2,6-DINITROTOLUENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
2-CHLORONAPHTHALENE	0 / 1	0.04 : 0.04		0.02								0.04 U					
2-CHLOROPHENOL	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
2-METHYL-4,6-DINITROPHENOL	0 / 3	0.19 : 0.2		0.098333333								0.2 U				0.2 UJ	0.19 UJ
2-METHYLNAPHTHALENE	1 / 3	0.038 : 0.04	0.37 - 0.37	0.136333333								0.37				0.04 U	0.038 U
2-NITROANILINE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
2-NITROPHENOL	0 / 1	0.04 : 0.04		0.02								0.04 U					
3,3-DICHLOROBENZIDINE	0 / 3	0.12 : 0.12		0.06								0.12 U				0.12 U	0.12 U
3-NITROANILINE	0 / 1	0.079 : 0.079		0.0395								0.079 U					
4-BROMOPHENYL PHENYL ETHER	0 / 1	0.04 : 0.04		0.02								0.04 U					
4-CHLORO-3-METHYLPHENOL	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
4-CHLOROANILINE	0 / 1	0.079 : 0.079		0.0395								0.079 U					
4-CHLOROPHENYL PHENYL ETHER	0 / 1	0.04 : 0.04		0.02								0.04 U					
4-NITROANILINE	0 / 1	0.079 : 0.079		0.0395								0.079 U					
4-NITROPHENOL	0 / 1	0.2 : 0.2		0.1								0.2 U					
ACENAPHTHENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
ACENAPHTHYLENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
ACETOPHENONE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
ANTHRACENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
ATRAZINE	0 / 1	0.04 : 0.04		0.02								0.04 U					
BENZALDEHYDE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
BENZIDINE	0 / 3	1.3 : 1.4		0.683333333								1.4 U				1.4 UJ	1.3 UJ
BENZO(A)ANTHRACENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
BENZO(A)PYRENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
BENZO(B)FLUORANTHENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
BENZO(GHI)PERYLENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
BENZO(K)FLUORANTHENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
BENZYL BUTYL PHTHALATE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
Biphenyl	1 / 3	0.038 : 0.04	0.83 - 0.83	0.289666667								0.83				0.04 U	0.038 U
BIS(2-CHLOROETHOXY) METHANE	0 / 1	0.04 : 0.04		0.02								0.04 U					
BIS(2-CHLOROETHYL) ETHER	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
Bis(2-chloroisopropyl) ether	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 UJ	0.038 UJ
BIS(2-CHLOROISOPROPYL)ETHER	0 / 1	0.04 : 0.04		0.02								0.04 U					
BIS(2-ETHYLHEXYL)PHTHALATE	1 / 3	0.077 : 0.08	14 - 14	4.692833333								14				0.08 U	0.077 U
CAPROLACTAM	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
CARBAZOLE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
CHRYSENE	1 / 3	0.038 : 0.04	0.14 - 0.14	0.059666667								0.14				0.04 U	0.038 U
CRESOL,O	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
CRESOL,P	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U

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CPS / Madison Superfund Site
Old Bridge, NJ

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DIBENZO(A,H)ANTHRACENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
DIBENZOFURAN	1 / 1		0.12 - 0.12	0.12								0.12					
DIETHYL PHTHALATE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
DIMETHYL PHTHALATE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
DI-N-BUTYL PHTHALATE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
DI-N-OCTYL PHTHALATE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
FLUORANTHENE	1 / 3	0.038 : 0.04	0.04 - 0.04	0.026333333								0.04				0.04 U	0.038 U
FLUORENE	1 / 3	0.038 : 0.04	0.051 - 0.051	0.03								0.051				0.04 U	0.038 U
HEXACHLOROBENZENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
HEXACHLOROBUTADIENE	0 / 3	0.077 : 0.08		0.039333333								0.079 U				0.08 U	0.077 U
HEXACHLOROCYCLOPENTADIENE	0 / 3	0.19 : 0.2		0.098333333								0.2 U				0.2 U	0.19 U
HEXACHLOROETHANE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
INDENO(1,2,3-CD)PYRENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
ISOPHORONE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
NAPHTHALENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
NITROBENZENE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
N-NITROSODIMETHYLAMINE	0 / 1	0.077 : 0.077		0.0385													0.077 U
N-NITROSODI-N-PROPYLAMINE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
N-NITROSODIPHENYLAMINE	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
PENTACHLOROPHENOL	0 / 3	0.19 : 0.2		0.098333333								0.2 U				0.2 U	0.19 U
PHENANTHRENE	1 / 3	0.038 : 0.04	0.16 - 0.16	0.066333333								0.16				0.04 U	0.038 U
PHENOL	0 / 3	0.038 : 0.04		0.019666667								0.04 U				0.04 U	0.038 U
PYRENE	1 / 3	0.038 : 0.04	0.098 - 0.098	0.045666667								0.098				0.04 U	0.038 U
PCBs (mg/Kg)																	
PCB-1016 (AROCLOR 1016)	0 / 1	0.0045 : 0.0045		0.00225										0.0045 U			
PCB-1221 (AROCLOR 1221)	0 / 1	0.0057 : 0.0057		0.00285										0.0057 U			
PCB-1232 (AROCLOR 1232)	0 / 1	0.0099 : 0.0099		0.00495										0.0099 U			
PCB-1242 (AROCLOR 1242)	0 / 1	0.0041 : 0.0041		0.00205										0.0041 U			
PCB-1248 (AROCLOR 1248)	0 / 1	0.0041 : 0.0041		0.00205										0.0041 U			
PCB-1254 (AROCLOR 1254)	0 / 1	0.0041 : 0.0041		0.00205										0.0041 U			
PCB-1260 (AROCLOR 1260)	1 / 1		0.0094 - 0.0094	0.0094										0.0094			
Inorganics (mg/Kg)																	
ALUMINUM	3 / 3		2530 - 7800	4666.666667								7800				2530	3670
ANTIMONY	0 / 3	0.767 : 1.18		0.516166667								0.767 U				1.18 U	1.15 U
ARSENIC	3 / 3		1.84 - 7.39	3.746666667								7.39				1.84 J	2.01 J
BARIUM	3 / 3		9.01 - 23.5	14.67								23.5				9.01	11.5
BERYLLIUM	1 / 3	0.0783 : 0.0801	0.628 - 0.628	0.235733333								0.628				0.0801 U	0.0783 U
CADMIUM	1 / 3	0.161 : 0.165	0.651 - 0.651	0.271333333								0.651				0.165 U	0.161 U
CALCIUM	1 / 3	34.9 : 47	9070 - 9070	3036.983333								9070				47 U	34.9 U
CHROMIUM	3 / 3		5.78 - 20.7	12.32666667								20.7				5.78	10.5
COBALT	2 / 3	0.224 : 0.224	0.72 - 2.18	1.004								2.18				0.224 U	0.72
COPPER	2 / 3	3.18 : 3.18	36.3 - 92.4	43.43								92.4				36.3	3.18 U
IRON	3 / 3		3810 - 20400	10443.33333								20400				3810	7120
LEAD	3 / 3		5.3 - 28.2	14.26								28.2				9.28	5.3
MAGNESIUM	3 / 3		106 - 1420	554.6666667								1420				106 J	138 J
MANGANESE	3 / 3		16.6 - 69.8	35.63333333								69.8				16.6	20.5
MERCURY	1 / 3	0.0129 : 0.0137	0.0407 - 0.0407	0.018								0.0407				0.0137 U	0.0129 U
NICKEL	3 / 3		0.89 - 11.2	4.72								11.2				0.89 J	2.07
POTASSIUM	3 / 3		288 - 1080	566.6666667								1080				288	332
SELENIUM	0 / 3	0.791 : 1.15		0.511833333								0.791 U				1.15 U	1.13 U
SILVER	0 / 3	0.0965 : 0.212		0.085916667								0.0965 U				0.212 U	0.207 U
SODIUM	1 / 3	42.9 : 44	113 - 113	52.15								113				44 U	42.9 U
THALLIUM	1 / 3	1.67 : 1.71	1.68 - 1.68	1.123333333								1.68				1.71 U	1.67 U
VANADIUM	3 / 3		11.3 - 29.1	19.93333333								29.1				11.3 J	19.4 J
ZINC	1 / 3	12.5 : 20.2	126 - 126	47.45								126				12.5 U	20.2 U
Moisture **(%)**	12 / 12		12.3 - 20.7	15.41666667	15.3	12.4	15.3	16.2	16.5	15.4	14.5	16.5		20.7	12.3	16.8	13.1
PH **(pH units)**	1 / 1		7.79 - 7.79	7.79								7.79					

mg/Kg = milligram per kilogram
U = not detected, value is the reporting limit
J = value is estimated

Prepared by / Date: KJC 11/12/13
Checked by / Date: KMW 12/9/2013

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-01 CPS-01-020305 2/3/2005	CPS-01 CPS-01-030708 3/7/2008	CPS-01 CPS-01-032411 3/24/2011	CPS-01 CPS-01-071305 7/13/2005	CPS-01 CPS-01-121605 12/16/2005	CPS-01 CPS-1-071305 7/13/2005	CPS-01 CPS-1-072612 7/26/2012	CPS-01 CPS-1-091994 9/19/1994	CPS-02 CPS-2-091994 9/19/1994	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-09 CPS-9-072512 7/25/2012
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE			0.0001 U						0 U			
1,1,1-TRICHLOROETHANE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE							0.0009			0.005 U	0.0002	0.0006
1,1,2-TRICHLOROETHANE							0.0005 U		0 U	0.005 U	0.0001 U	0.0002
1,1-DICHLOROETHANE							0.0005 U		0 U	0.005 U	0.0001	0.0001 U
1,1-DICHLOROETHYLENE							0.0005 U		0 U	0.005 U	0.0023	0.0001 U
1,1-DICHLOROPROPYLENE				0.0006 U		0.0006 U						
1,2,3-TRICHLOROBENZENE				0.01144		0.01144						
1,2,3-TRICHLOROPROPANE				0.00101 U		0.00101 U						
1,2,4-TRICHLOROBENZENE							0.029			0.011	0.019	0.016
1,2,4-TRIMETHYLBENZENE				0.0047		0.0047						
1,2-CIS-DICHLOROETHYLENE							0.0025			0.005 U	0.0026	0.0008
1,2-DIBROMO-3-CHLOROPROPANE			0.0002 U									
1,2-DIBROMOETHANE			0.0001 U									
1,2-DICHLOROBENZENE							0.034			0.023	0.0036	0.0018
1,2-DICHLOROETHANE							0.0043		0 U	0.005 U	0.0052	0.0021
1,2-DICHLOROETHYLENE												
1,2-DICHLOROPROPANE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE							0.0016		0 U	0.005 U	0.0002	0.0003
1,3,5-TRIMETHYLBENZENE				0.00129		0.00129						
1,3-CIS-DICHLOROPROPYLENE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE							0.032			0.019	0.0005	0.0015
1,3-DICHLOROPROPANE				0.00057 U		0.00057 U						
1,3-TRANS-DICHLOROPROPYLENE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE							0.084			0.043	0.0018	0.0027
1,4-DIOXANE							0.1 U			1 U	0.02 U	0.02 U
1-CHLOROBUTANE				0.01531		0.01531						
2,2-DICHLOROPROPANE				0.00056 U		0.00056 U						
2-CHLOROETHYL VINYL ETHER								0 U	0 U			
2-CHLOROTOLUENE				0.07011		0.07011						
2-HEXANONE				0.00062 U		0.00062 U						
3-CHLOROPROPENE				0.00148 U		0.00148 U						
ACETONE							0.015 U		0 U	0.15 U	0.003 U	0.003 U
ACETONITRILE												
ACROLEIN							0.02 U		0 U	0.2 U	0.004 U	0.004 U
ACRYLONITRILE							0.005 U		0 U	0.05 U	0.001 U	0.001 U
BENZENE							0.034		0 U	1.8	0.0017	0.0007
BROMOBENZENE				0.00082 U		0.00082 U						
BROMOCHLOROMETHANE			0.0001 U									
BROMOFORM							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
CARBON DISULFIDE							0.002 U			0.02 U	0.0004 U	0.0004 U
CARBON TETRACHLORIDE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
CHLOROBENZENE							0.72		0 U	8.1	0.0017	0.0026
CHLORODIBROMOMETHANE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
CHLOROETHANE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
CHLOROFORM							0.0005 U		0 U	0.005 U	0.0003	0.0001 U
DICHLOROBROMOMETHANE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U

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Laboratory Analytical Data - Groundwater within CPS Plume
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CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-01 CPS-01-020305 2/3/2005	CPS-01 CPS-01-030708 3/7/2008	CPS-01 CPS-01-032411 3/24/2011	CPS-01 CPS-01-071305 7/13/2005	CPS-01 CPS-01-121605 12/16/2005	CPS-01 CPS-1-071305 7/13/2005	CPS-01 CPS-1-072612 7/26/2012	CPS-01 CPS-1-091994 9/19/1994	CPS-02 CPS-2-091994 9/19/1994	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-09 CPS-9-072512 7/25/2012
DICHLORODIFLUOROMETHANE							0.0005 U			0.005 U	0.0001 U	0.0001 U
DIETHYL ETHER				0.02545		0.02545						
ETHYL METHACRYLATE				0.00058 U		0.00058 U						
ETHYLBENZENE							0.038		0 U	0.28	0.0004	0.0001 U
HEXACHLOROBUTADIENE				0.00055 U		0.00055 U						
HEXACHLOROETHANE				0.00116 U		0.00116 U						
ISOPROPYLBENZENE				0.00126		0.00126						
M+P-XYLENE			0.0002 U									
METHACRYLONITRILE				0.00213 U		0.00213 U						
METHYL ACETATE							0.0015 U			0.015 U	0.0003 U	0.0003 U
METHYL ACRYLATE				0.00078 U		0.00078 U						
METHYL BROMIDE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
METHYL CHLORIDE							0.001 U		0 U	0.01 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE							0.005 U			0.05 U	0.001 U	0.001 U
METHYL IODIDE				0.00247 U		0.00247 U						
METHYL ISOBUTYL KETONE							0.005 U			0.05 U	0.001 U	0.001 U
METHYL METHACRYLATE				0.0009 U		0.0009 U						
METHYLENE BROMIDE				0.00071 U		0.00071 U						
METHYLENE CHLORIDE							0.001 U		0 U	0.01 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER							0.0005			0.005 U	0.0003	0.015
NAPHTHALENE							0.0031			0.036	0.0001 U	0.0001 U
N-BUTYLBENZENE				0.00022 U		0.00022 U						
N-PROPYLBENZENE				0.00035 U		0.00035 U						
O-XYLENE			0.0001 U									
P-CHLOROTOLUENE				0.07577		0.07577						
PENTACHLOROETHANE				0.00178 U		0.00178 U						
P-ISOPROPYLTOLUENE				0.00033 U		0.00033 U						
PROPANENITRILE				0.00541 U		0.00541 U						
SEC-BUTYLBENZENE				0.00043 U		0.00043 U						
STYRENE							0.0005 U			0.005 U	0.0001 U	0.0001 U
t-Butyl Alcohol							0.02 U			0.2 U	0.004 U	0.004 U
TERT-BUTYLBENZENE				0.00043 U		0.00043 U						
TETRACHLOROETHYLENE							0.0005 U		0 U	0.005 U	0.0001	0.0001 U
TETRAHYDROFURAN				0.02241		0.02241						
TOLUENE							0.06		0 U	4	0.0001 U	0.0001 U
TRANS-1,4-DICHLORO-2-BUTENE				0.00117 U		0.00117 U						
TRICHLOROETHYLENE							0.0008		0 U	0.005 U	0.0015	0.0002
TRICHLOROFLUOROMETHANE							0.0005 U		0 U	0.005 U	0.0001 U	0.0001 U
TVOC												
VINYL CHLORIDE							0.0029		0 U	0.004 U	0.0015	0.0003
XYLENES,TOTAL							0.17		0 U	1.2	0.0012	0.0001 U
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE										0.0005 U	0.0005 U	0.0005 U
1,2-DICHLOROBENZENE									0 U			
1,3-DICHLOROBENZENE									0 U			
1,4-DICHLOROBENZENE									0 U			
1,4-DIOXANE										0.039	0.005	0.002
2,3,4,6-Tetrachlorophenol										0.0005 U	0.0005 U	0.0005 U

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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Old Bridge, NJ

chemical_name	CPS-01 CPS-01-020305 2/3/2005	CPS-01 CPS-01-030708 3/7/2008	CPS-01 CPS-01-032411 3/24/2011	CPS-01 CPS-01-071305 7/13/2005	CPS-01 CPS-01-121605 12/16/2005	CPS-01 CPS-1-071305 7/13/2005	CPS-01 CPS-1-072612 7/26/2012	CPS-01 CPS-1-091994 9/19/1994	CPS-02 CPS-2-091994 9/19/1994	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-09 CPS-9-072512 7/25/2012
2,4,5-TRICHLOROPHENOL	0.00151 U									0.0005 U	0.0005 U	0.0005 U
2,4,6-TRICHLOROPHENOL	0.00119 U									0.0005 U	0.0005 U	0.0005 U
2,4-DICHLOROPHENOL	0.00127 U									0.0005 U	0.0005 U	0.0005 U
2,4-DIMETHYLPHENOL	0.0082									0.1	0.0005 U	0.0005 U
2,4-DINITROPHENOL	0.00176 U									0.009 U	0.009 U	0.009 U
2,4-DINITROTOLUENE	0.00148 U									0.0009 U	0.0009 U	0.0009 U
2,6-DINITROTOLUENE	0.00069 J									0.0005 U	0.0005 U	0.0005 U
2-CHLORONAPHTHALENE	0.00105 U									0.0004 U	0.0004 U	0.0004 U
2-CHLOROPHENOL	0.00104 U									0.006	0.0005 U	0.0005 U
2-METHYL-4,6-DINITROPHENOL	0.00118 U									0.005 U	0.005 U	0.005 U
2-METHYLNAPHTHALENE	0.00056 J									0.005	0.00009 U	0.00009 U
2-NITROANILINE	0.0013 U									0.0005 U	0.0005 U	0.0005 U
2-NITROPHENOL	0.00091 U									0.0005 U	0.0005 U	0.0005 U
3,3-DICHLOROBENZIDINE	0.00142 U									0.002 U	0.002 U	0.002 U
3-NITROANILINE	0.00346 J									0.0005 U	0.0005 U	0.0005 U
4-BROMOPHENYL PHENYL ETHER	0.00063 U									0.0005 U	0.0005 U	0.0005 U
4-CHLORO-3-METHYLPHENOL	0.00182 U									0.0005 U	0.0005 U	0.0005 U
4-CHLOROANILINE	0.00146 U									0.0005 U	0.0005 U	0.0005 U
4-CHLOROPHENYL PHENYL ETHER	0.0006 U									0.0005 U	0.0005 U	0.0005 U
4-NITROANILINE	0.00194 U									0.0005 U	0.0005 U	0.0005 U
4-NITROPHENOL	0.00346 U									0.009 U	0.009 U	0.009 U
ACENAPHTHENE	0.0004 J									0.00009 U	0.00009 U	0.00009 U
ACENAPHTHYLENE	0.00091 U									0.00009 U	0.00009 U	0.00009 U
ACETOPHENONE										0.006	0.0005 U	0.0005 U
ANILINE	0.4701											
ANTHRACENE	0.00046 U									0.00009 U	0.00009 U	0.00009 U
ATRAZINE										0.002 U	0.002 U	0.002 U
AZOBENZENE	0.00064 U											
BENZALDEHYDE										0.0009 U	0.0009 U	0.0009 U
BENZIDINE	0.02 U									0.019 U	0.019 U	0.019 U
BENZO(A)ANTHRACENE	0.00039 U									0.00009 U	0.00009 U	0.00009 U
BENZO(A)PYRENE	0.00078 U									0.00009 U	0.00009 U	0.00009 U
BENZO(B)FLUORANTHENE										0.00009 U	0.00009 U	0.00009 U
Benzo(b+k)Fluoranthene	0.00069 U											
BENZO(GHI)PERYLENE	0.00101 U									0.00009 U	0.00009 U	0.00009 U
BENZO(K)FLUORANTHENE										0.00009 U	0.00009 U	0.00009 U
BENZOIC ACID	0.00149 U											
BENZYL ALCOHOL	0.00136											
BENZYL BUTYL PHTHALATE	0.00037 U									0.002 U	0.002 U	0.002 U
Biphenyl										0.024	0.001	0.0005 U
BIS(2-CHLOROETHOXY) METHANE	0.00093 U									0.0005 U	0.0005 U	0.0005 U
BIS(2-CHLOROETHYL) ETHER	0.00109 U									0.0005 U	0.0005 U	0.0005 U
Bis(2-chloroisopropyl) ether	0.00164 U									0.0005 U	0.0005 U	0.0005 U
BIS(2-CHLOROISOPROPYL)ETHER										0.0005 U	0.0005 U	0.0005 U
BIS(2-ETHYLHEXYL)PHTHALATE	0.00557									0.002 U	0.002 U	0.002 U
CAPROLACTAM										0.005 U	0.005 U	0.005 U
CARBAZOLE	0.00055 U									0.0005 U	0.0005 U	0.0005 U
CHRYSENE	0.00066 U									0.00009 U	0.00009 U	0.00009 U

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Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	CPS-01 CPS-01-020305 2/3/2005	CPS-01 CPS-01-030708 3/7/2008	CPS-01 CPS-01-032411 3/24/2011	CPS-01 CPS-01-071305 7/13/2005	CPS-01 CPS-01-121605 12/16/2005	CPS-01 CPS-1-071305 7/13/2005	CPS-01 CPS-1-072612 7/26/2012	CPS-01 CPS-1-091994 9/19/1994	CPS-02 CPS-2-091994 9/19/1994	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-09 CPS-9-072512 7/25/2012
CRESOL,O	0.02304									0.023	0.0005 U	0.0005 U
CRESOL,P	0.00146 U									0.02	0.0005 U	0.0005 U
DIBENZO(A,H)ANTHRACENE	0.00073 U									0.00009 U	0.00009 U	0.00009 U
DIBENZOFURAN	0.00079 U									0.0005 U	0.0005 U	0.0005 U
DIETHYL PHTHALATE	0.0003 U									0.002 U	0.002 U	0.002 U
DIMETHYL PHTHALATE	0.00044 U									0.002 U	0.002 U	0.002 U
DI-N-BUTYL PHTHALATE	0.00625									0.002 U	0.002 U	0.002 U
DI-N-OCTYL PHTHALATE	0.00083 U									0.002 U	0.002 U	0.002 U
FLUORANTHENE	0.00039 U									0.00009 U	0.00009 U	0.00009 U
FLUORENE	0.00078 U									0.0005	0.00009 U	0.00009 U
HEXACHLOROBENZENE	0.00064 U									0.00009 U	0.00009 U	0.00009 U
HEXACHLOROBUTADIENE										0.0005 U	0.0005 U	0.0005 U
HEXACHLOROCYCLOPENTADIENE	0.00119 U									0.005 U	0.005 U	0.005 U
HEXACHLOROETHANE										0.0009 U	0.0009 U	0.0009 U
INDENO(1,2,3-CD)PYRENE	0.00073 U									0.00009 U	0.00009 U	0.00009 U
ISOPHORONE	0.00093 U									0.0005 U	0.0005 U	0.0005 U
NAPHTHALENE										0.018	0.0001	0.00009 U
NITROBENZENE	0.00132 U									0.0005 U	0.0005 U	0.0005 U
N-NITROSODIMETHYLAMINE	0.01 U											
N-NITROSODI-N-PROPYLAMINE	0.00077 U									0.0005 U	0.0005 U	0.0005 U
N-NITROSODIPHENYLAMINE	0.0004 U									0.0005 U	0.0005 U	0.0005 U
PENTACHLOROPHENOL	0.00194 U									0.0009 U	0.0009 U	0.0009 U
PHENANTHRENE	0.00052 U									0.00009 U	0.00009 U	0.00009 U
PHENOL	0.00114 U									0.0005 U	0.0005 U	0.0005 U
PYRENE	0.00048 U									0.00009 U	0.00009 U	0.00009 U
PYRIDINE	0.01 U											
Metals, Total (mg/L)												
ALUMINUM			13						160			
ANTIMONY			0.01 U						0.005 U			
ARSENIC			0.0141						0.077			
BARIUM			0.0418						0.61			
BERYLLIUM			0.003						0.0086			
CADMIUM			0.002 U						0.0085			
CALCIUM			10.4						28			
CHROMIUM			0.0034 U						1.4			
COBALT			0.0697						0.05 U			
COPPER			0.0973						38			
IRON			0.103						220			
LEAD			0.0069 U						0.83			
MAGNESIUM			5.67						12			
MANGANESE			0.828						0.43			
MERCURY			0.00005 U						0.0015			
NICKEL			0.0443						0.12			
POTASSIUM			2.37						12			
SELENIUM			0.0089 U						0.014			
SILVER			0.0023 U						0.021			
SODIUM			9.43						5.8			
THALLIUM			0.014 U						0.011			

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CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-01 CPS-01-020305 2/3/2005	CPS-01 CPS-01-030708 3/7/2008	CPS-01 CPS-01-032411 3/24/2011	CPS-01 CPS-01-071305 7/13/2005	CPS-01 CPS-01-121605 12/16/2005	CPS-01 CPS-1-071305 7/13/2005	CPS-01 CPS-1-072612 7/26/2012	CPS-01 CPS-1-091994 9/19/1994	CPS-02 CPS-2-091994 9/19/1994	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-09 CPS-9-072512 7/25/2012
VANADIUM			0.0025 U						1.5			
ZINC			0.233						6.4			
Metals, Filtered (mg/L)												
ALUMINUM			12.8						3.2			
ANTIMONY			0.01 U						0.011			
ARSENIC			0.0126						0.005 U			
BARIUM			0.0411						0.2 U			
BERYLLIUM			0.0031						0.005 U			
CADMIUM			0.002 U						0.0043			
CALCIUM			10.2						5 U			
CHROMIUM			0.0034 U						0.011			
COBALT			0.0681						0.05 U			
COPPER			0.0998						5.1			
IRON			0.0522 U						11			
LEAD			0.0069 U						0.02			
MAGNESIUM			5.53						5 U			
MANGANESE			0.819						0.16			
MERCURY			0.00005 U						0.0002 U			
NICKEL			0.0431						0.046			
POTASSIUM			2.33						5 U			
SELENIUM			0.0089 U						0.005 U			
SILVER			0.0023 U						0.01 U			
SODIUM			9.29						6.4			
THALLIUM			0.014 U						0.005 U			
VANADIUM			0.0025 U						0.067			
ZINC			0.232						3.3			
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon		53.7										
CHEMICAL OXYGEN DEMAND												
CHLORIDE		60										
FERROUS IRON		12.3										
FREE CARBON DIOXIDE		188										
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1		47.2										
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1		0.46 U										
Nitrate (as N), Nitrogen, Nitrite		0.015 U										
Nitrate, Nitrogen NO2, NO3		0.04 U										
PH		5.7										
SULFATE		50.7										
Sulfide		0.93										
TOTAL DISSOLVED SOLIDS		222										
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON		22.9										
TOTAL SUSPENDED SOLIDS		16										

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	CPS-01 CPS-01-020305 2/3/2005	CPS-01 CPS-01-030708 3/7/2008	CPS-01 CPS-01-032411 3/24/2011	CPS-01 CPS-01-071305 7/13/2005	CPS-01 CPS-01-121605 12/16/2005	CPS-01 CPS-1-071305 7/13/2005	CPS-01 CPS-1-072612 7/26/2012	CPS-01 CPS-1-091994 9/19/1994	CPS-02 CPS-2-091994 9/19/1994	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-09 CPS-9-072512 7/25/2012
Field Parameters (mg/L)												
CONDUCTIVITY					452							
DISSOLVED OXYGEN					1.6							
PH												
TEMPERATURE					14							
Dissolved Gases (mg/L)												
ETHANE		0.1										
ETHYLENE		0.032										
ETHYLENIMINE												
METHANE		11										
PROPANE		0.09										

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Prepared by / Date: KJC 11/12/13
Checked by / Date: KMW 12/9/2013

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	DEP-1 DEP-1-032311 3/23/2011	DEP-1 DEP-1-072412 7/24/2012	DEP-2 DEP-2-030103 3/1/2003	DEP-2 DEP-2-031308 3/13/2008	DEP-2 DEP-2-032411 3/24/2011	DEP-2 DEP-2-072412 7/24/2012	DEP-2 DEP-2-090805 9/8/2005	DEP-2 DEP-2-121505 12/15/2005	DEP-3 DEP-3-032311 3/23/2011	DEP-3 DEP-3-072412 7/24/2012	DW-10D DW-10D- 032311 3/23/2011	DW-10D DW-10D- 072312 7/23/2012
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE					0.0001 U						0.0001 U	
1,1,1-TRICHLOROETHANE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
1,1,2,2-TETRACHLOROETHANE	0.0004					0.0017			0.0001 U			0.0003
1,1,2-TRICHLOROETHANE	0.0001 U					0.0002			0.0001 U			0.0001 U
1,1-DICHLOROETHANE	0.0001 U					0.0002			0.0001 U			0.0001 U
1,1-DICHLOROETHYLENE	0.0017					0.0001 U			0.0001 U			0.0006
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE	0.0014					0.0002			0.0001 U			0.0006
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE	0.0003					0.001			0.0001 U			0.0002
1,2-DIBROMO-3-CHLOROPROPANE	0.0002 U				0.0002 U				0.0002 U		0.0002 U	
1,2-DIBROMOETHANE	0.0001 U				0.0001 U				0.0001 U		0.0001 U	
1,2-DICHLOROBENZENE	0.0002					0.0049			0.0001 U			0.0002
1,2-DICHLOROETHANE	0.0007					0.0012			0.0001 U			0.0001
1,2-DICHLOROETHYLENE			0.0015									
1,2-DICHLOROPROPANE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
1,2-TRANS-DICHLOROETHYLENE	0.0001 U					0.0004			0.0001 U			0.0001 U
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
1,3-DICHLOROBENZENE	0.0001 U					0.0008			0.0001 U			0.0003
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
1,4-DICHLOROBENZENE	0.0001 U					0.0038			0.0001 U			0.001
1,4-DIOXANE						0.02 U						0.02 U
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE	0.003 U					0.003 U			0.003 U			0.003 U
ACETONITRILE												
ACROLEIN	0.004 U					0.004 U			0.004 U			0.004 U
ACRYLONITRILE	0.001 U					0.001 U			0.001 U			0.001 U
BENZENE	0.0007					0.0036			0.0001 U			0.0006
BROMOBENZENE												
BROMOCHLOROMETHANE					0.0001 U						0.0001 U	
BROMOFORM	0.0001 U					0.0001 U			0.0001 U			0.0001 U
CARBON DISULFIDE	0.0004 U					0.0004 U			0.0004 U			0.0004 U
CARBON TETRACHLORIDE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
CHLOROBENZENE	0.0001					0.01			0.0001 U			0.0018
CHLORODIBROMOMETHANE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
CHLOROETHANE	0.0001 U					0.0001			0.0001 U			0.0001 U
CHLOROFORM	0.0001					0.0001 U			0.0001 U			0.0001 U
DICHLOROBROMOMETHANE	0.0001 U					0.0001 U			0.0001 U			0.0001 U

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chemical_name	DEP-1 DEP-1-032311 3/23/2011	DEP-1 DEP-1-072412 7/24/2012	DEP-2 DEP-2-030103 3/1/2003	DEP-2 DEP-2-031308 3/13/2008	DEP-2 DEP-2-032411 3/24/2011	DEP-2 DEP-2-072412 7/24/2012	DEP-2 DEP-2-090805 9/8/2005	DEP-2 DEP-2-121505 12/15/2005	DEP-3 DEP-3-032311 3/23/2011	DEP-3 DEP-3-072412 7/24/2012	DW-10D DW-10D- 032311 3/23/2011	DW-10D DW-10D- 072312 7/23/2012
DICHLORODIFLUOROMETHANE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE	0.0001 U					0.0001			0.0001 U			0.0001 U
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE					0.0002 U						0.0002 U	
METHACRYLONITRILE												
METHYL ACETATE	0.0003 U					0.0003 U			0.0003 U			0.0003 U
METHYL ACRYLATE												
METHYL BROMIDE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
METHYL CHLORIDE	0.0002 U					0.0002 U			0.0002 U			0.0002 U
METHYL ETHYL KETONE	0.001 U					0.001 U			0.001 U			0.001 U
METHYL IODIDE												
METHYL ISOBUTYL KETONE	0.001 U					0.001 U			0.001 U			0.001 U
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE	0.0002 U					0.0002 U			0.0002 U			0.0002 U
METHYL-T-BUTYL ETHER	0.0008					0.028			0.0011			0.016
NAPHTHALENE						0.0001 U						0.0001 U
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE					0.0001 U						0.0001 U	
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
t-Butyl Alcohol	0.004 U					0.0086			0.004 U			0.004 U
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
TETRAHYDROFURAN												
TOLUENE	0.0001 U					0.0001			0.0001 U			0.0001 U
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE	0.0007					0.0001 U			0.0001 U			0.0004
TRICHLOROFLUOROMETHANE	0.0001 U					0.0001 U			0.0001 U			0.0001 U
TVOC												
VINYL CHLORIDE	0.0007					0.0011			0.00008 U			0.0006
XYLENES,TOTAL	0.0001 U					0.0001 U			0.0001 U			0.0001 U
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE		0.0005 U				0.0005 U				0.0005 U		
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE		0.004				0.002				0.0009 U		
2,3,4,6-Tetrachlorophenol		0.0005 U				0.0005 U				0.0005 U		

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chemical_name	DEP-1 DEP-1-032311 3/23/2011	DEP-1 DEP-1-072412 7/24/2012	DEP-2 DEP-2-030103 3/1/2003	DEP-2 DEP-2-031308 3/13/2008	DEP-2 DEP-2-032411 3/24/2011	DEP-2 DEP-2-072412 7/24/2012	DEP-2 DEP-2-090805 9/8/2005	DEP-2 DEP-2-121505 12/15/2005	DEP-3 DEP-3-032311 3/23/2011	DEP-3 DEP-3-072412 7/24/2012	DW-10D DW-10D- 032311 3/23/2011	DW-10D DW-10D- 072312 7/23/2012
2,4,5-TRICHLOROPHENOL		0.0005 U				0.0005 U				0.0005 U		
2,4,6-TRICHLOROPHENOL		0.0005 U				0.0005 U				0.0005 U		
2,4-DICHLOROPHENOL		0.0005 U				0.0005 U				0.0005 U		
2,4-DIMETHYLPHENOL		0.0005 U				0.0005 U				0.0005 U		
2,4-DINITROPHENOL		0.009 U				0.009 U				0.009 U		
2,4-DINITROTOLUENE		0.0009 U				0.0009 U				0.0009 U		
2,6-DINITROTOLUENE		0.0005 U				0.0005 U				0.0005 U		
2-CHLORONAPHTHALENE		0.0004 U				0.0004 U				0.0004 U		
2-CHLOROPHENOL		0.0005 U				0.0005 U				0.0005 U		
2-METHYL-4,6-DINITROPHENOL		0.005 U				0.005 U				0.005 U		
2-METHYLNAPHTHALENE		0.00009 U				0.00009 U				0.00009 U		
2-NITROANILINE		0.0005 U				0.0005 U				0.0005 U		
2-NITROPHENOL		0.0005 U				0.0005 U				0.0005 U		
3,3-DICHLOROBENZIDINE		0.002 U				0.002 U				0.002 U		
3-NITROANILINE		0.0005 U				0.0005 U				0.0005 U		
4-BROMOPHENYL PHENYL ETHER		0.0005 U				0.0005 U				0.0005 U		
4-CHLORO-3-METHYLPHENOL		0.0005 U				0.0005 U				0.0005 U		
4-CHLOROANILINE		0.0005 U				0.0005 U				0.0005 U		
4-CHLOROPHENYL PHENYL ETHER		0.0005 U				0.0005 U				0.0005 U		
4-NITROANILINE		0.0005 U				0.0005 U				0.0005 U		
4-NITROPHENOL		0.009 U				0.009 U				0.009 U		
ACENAPHTHENE		0.00009 U				0.00009 U				0.00009 U		
ACENAPHTHYLENE		0.00009 U				0.0002				0.00009 U		
ACETOPHENONE		0.0005 U				0.0005 U				0.0005 U		
ANILINE												
ANTHRACENE		0.00009 U				0.00009 U				0.00009 U		
ATRAZINE		0.002 U				0.002 U				0.002 U		
AZOBENZENE												
BENZALDEHYDE		0.0009 U				0.0009 U				0.0009 U		
BENZIDINE		0.019 U				0.019 U				0.019 U		
BENZO(A)ANTHRACENE		0.00009 U				0.00009 U				0.00009 U		
BENZO(A)PYRENE		0.00009 U				0.00009 U				0.00009 U		
BENZO(B)FLUORANTHENE		0.00009 U				0.00009 U				0.00009 U		
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE		0.00009 U				0.00009 U				0.00009 U		
BENZO(K)FLUORANTHENE		0.00009 U				0.00009 U				0.00009 U		
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE		0.002 U				0.002 U				0.002 U		
Biphenyl		0.0005 U				0.0005 U				0.0005 U		
BIS(2-CHLOROETHOXY) METHANE		0.0005 U				0.0005 U				0.0005 U		
BIS(2-CHLOROETHYL) ETHER		0.0005 U				0.0005 U				0.0005 U		
Bis(2-chloroisopropyl) ether		0.0005 U				0.0005 U				0.0005 U		
BIS(2-CHLOROISOPROPYL)ETHER		0.0005 U				0.0005 U				0.0005 U		
BIS(2-ETHYLHEXYL)PHTHALATE		0.002 U				0.002 U				0.002 U		
CAPROLACTAM		0.005 U				0.005 U				0.005 U		
CARBAZOLE		0.0005 U				0.0005 U				0.0005 U		
CHRYSENE		0.00009 U				0.00009 U				0.00009 U		

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chemical_name	DEP-1 DEP-1-032311 3/23/2011	DEP-1 DEP-1-072412 7/24/2012	DEP-2 DEP-2-030103 3/1/2003	DEP-2 DEP-2-031308 3/13/2008	DEP-2 DEP-2-032411 3/24/2011	DEP-2 DEP-2-072412 7/24/2012	DEP-2 DEP-2-090805 9/8/2005	DEP-2 DEP-2-121505 12/15/2005	DEP-3 DEP-3-032311 3/23/2011	DEP-3 DEP-3-072412 7/24/2012	DW-10D DW-10D- 032311 3/23/2011	DW-10D DW-10D- 072312 7/23/2012
CRESOL,O		0.0005 U				0.0005 U				0.0005 U		
CRESOL,P		0.0005 U				0.0005 U				0.0005 U		
DIBENZO(A,H)ANTHRACENE		0.00009 U				0.00009 U				0.00009 U		
DIBENZOFURAN		0.0005 U				0.0005 U				0.0005 U		
DIETHYL PHTHALATE		0.002 U				0.002 U				0.002 U		
DIMETHYL PHTHALATE		0.002 U				0.002 U				0.002 U		
DI-N-BUTYL PHTHALATE		0.002 U				0.002 U				0.002 U		
DI-N-OCTYL PHTHALATE		0.002 U				0.002 U				0.002 U		
FLUORANTHENE		0.00009 U				0.00009 U				0.00009 U		
FLUORENE		0.00009 U				0.0001				0.00009 U		
HEXACHLOROBENZENE		0.00009 U				0.00009 U				0.00009 U		
HEXACHLOROBUTADIENE		0.0005 U				0.0005 U				0.0005 U		
HEXACHLOROCYCLOPENTADIENE		0.005 U				0.005 U				0.005 U		
HEXACHLOROETHANE		0.0009 U				0.0009 U				0.0009 U		
INDENO(1,2,3-CD)PYRENE		0.00009 U				0.00009 U				0.00009 U		
ISOPHORONE		0.0005 U				0.0005 U				0.0005 U		
NAPHTHALENE		0.00009 U				0.00009 U				0.00009 U		
NITROBENZENE		0.0005 U				0.0005 U				0.0005 U		
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE		0.0005 U				0.0005 U				0.0005 U		
N-NITROSODIPHENYLAMINE		0.0005 U				0.0005 U				0.0005 U		
PENTACHLOROPHENOL		0.0009 U				0.0009 U				0.0009 U		
PHENANTHRENE		0.00009 U				0.0002				0.00009 U		
PHENOL		0.0005 U				0.0005 U				0.0005 U		
PYRENE		0.00009 U				0.00009 U				0.00009 U		
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM	13.1				2.19				3.94		3.68	
ANTIMONY	0.01 U				0.01 U				0.01 U		0.01 U	
ARSENIC	0.0107				0.0098 U				0.0528		0.0098 U	
BARIUM	0.0512				0.0595				0.0684		0.061	
BERYLLIUM	0.0056				0.0014				0.0014 U		0.0018	
CADMIUM	0.002 U				0.0172				0.0094		0.002 U	
CALCIUM	12.8				3.27				3.22 J		10.6	
CHROMIUM	0.0125				0.0034 U				0.0235		0.0034 U	
COBALT	0.0745				0.0093				0.0075		0.0331	
COPPER					0.0051 J						0.0027 U	
IRON	9.22				0.402				27.5		6.11	
LEAD	0.02				0.0069 U				0.0181		0.0069 U	
MAGNESIUM	6.07				0.781				1.07		3.74	
MANGANESE	0.833				0.126				0.134		0.377	
MERCURY	0.00005 U				0.00005 U				0.00005 U		0.00005 U	
NICKEL	0.0562				0.0703				0.0557		0.0406	
POTASSIUM	3.53				0.728				1.25		3.24	
SELENIUM	0.0089 U				0.0089 U				0.0089 U		0.0089 U	
SILVER	0.0023 U				0.0023 U				0.0023 U		0.0023 U	
SODIUM	13.1				4.15				3.87		20.5	
THALLIUM	0.014 U				0.014 U				0.014 U		0.014 U	

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chemical_name	DEP-1 DEP-1-032311 3/23/2011	DEP-1 DEP-1-072412 7/24/2012	DEP-2 DEP-2-030103 3/1/2003	DEP-2 DEP-2-031308 3/13/2008	DEP-2 DEP-2-032411 3/24/2011	DEP-2 DEP-2-072412 7/24/2012	DEP-2 DEP-2-090805 9/8/2005	DEP-2 DEP-2-121505 12/15/2005	DEP-3 DEP-3-032311 3/23/2011	DEP-3 DEP-3-072412 7/24/2012	DW-10D DW-10D- 032311 3/23/2011	DW-10D DW-10D- 072312 7/23/2012
VANADIUM	0.0182				0.0025 U				0.593		0.0211	
ZINC	0.732				4.59				3.82		0.578	
Metals, Filtered (mg/L)												
ALUMINUM	7.57				2.18				1.05		3.61	
ANTIMONY	0.01 U				0.01 U				0.01 U		0.01 U	
ARSENIC	0.0098 U				0.0098 U				0.0098 U		0.0098 U	
BARIUM	0.0385				0.0582				0.0603		0.0584	
BERYLLIUM	0.005				0.0014 U				0.0014 U		0.0017	
CADMIUM	0.002 U				0.0169				0.0096		0.002 U	
CALCIUM	12.7				3.14				3.15		9.61	
CHROMIUM	0.0034 U				0.0034 U				0.0034 U		0.0034 U	
COBALT	0.0748				0.0085				0.0076		0.0325	
COPPER					0.0108 J				0.0027 U		0.005	
IRON	5.78				0.362				8.03		5.2	
LEAD	0.0097				0.0069 U				0.0069 U		0.0069 U	
MAGNESIUM	5.89				0.744				0.943		3.36	
MANGANESE	0.83				0.12				0.134		0.365	
MERCURY	0.00005 U				0.00005 U				0.00005 U		0.00005 U	
NICKEL	0.0562				0.0679				0.0501		0.0392	
POTASSIUM	2.98				0.616				0.806		2.72	
SELENIUM	0.0089 U				0.0089 U				0.0089 U		0.0089 U	
SILVER	0.0023 U				0.0023 U				0.0023 U		0.0023 U	
SODIUM	12.9				4.09				3.76		18.8	
THALLIUM	0.014 U				0.014 U				0.014 U		0.014 U	
VANADIUM	0.003				0.0025 U				0.004		0.0025 U	
ZINC	0.751				4.54				3.91		0.59	
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon				23.7								
CHEMICAL OXYGEN DEMAND												
CHLORIDE				39.6								
FERROUS IRON				17								
FREE CARBON DIOXIDE				41.3								
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1				2.6								
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1				0.46 U								
Nitrate (as N), Nitrogen, Nitrite				0.032								
Nitrate, Nitrogen NO2, NO3				0.04 U								
PH				5.1								
SULFATE				87.5								
Sulfide				0.53 U								
TOTAL DISSOLVED SOLIDS				190								
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON				1.8								
TOTAL SUSPENDED SOLIDS				7.6								

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	DEP-1 DEP-1-032311 3/23/2011	DEP-1 DEP-1-072412 7/24/2012	DEP-2 DEP-2-030103 3/1/2003	DEP-2 DEP-2-031308 3/13/2008	DEP-2 DEP-2-032411 3/24/2011	DEP-2 DEP-2-072412 7/24/2012	DEP-2 DEP-2-090805 9/8/2005	DEP-2 DEP-2-121505 12/15/2005	DEP-3 DEP-3-032311 3/23/2011	DEP-3 DEP-3-072412 7/24/2012	DW-10D DW-10D- 032311 3/23/2011	DW-10D DW-10D- 072312 7/23/2012
Field Parameters (mg/L)												
CONDUCTIVITY								207				
DISSOLVED OXYGEN							2.65					
PH												
TEMPERATURE								12				
Dissolved Gases (mg/L)												
ETHANE				0.018								
ETHYLENE				0.001 U								
ETHYLENIMINE												
METHANE				0.1								
PROPANE				0.001 U								

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-10D DW-10D- 090805 9/8/2005	DW-10S DW-10S- 031805 3/18/2005	DW-10S DW-10S- 031811 3/18/2011	DW-13D DW-13D- 031208 3/12/2008	DW-13D DW-13D- 032311 3/23/2011	DW-13D DW-13D- 072312 7/23/2012	DW-13D DW-13D- 090805 9/8/2005	DW-13D DW-13D- 120100 12/1/2000	DW-13D DW-13D- 121505 12/15/2005	DW-13S DW-13S- 031805 3/18/2005	DW-13S DW-13S- 031811 3/18/2011	DW-14 DW-14- 031208 3/12/2008
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE		0.0001 U			0.0001 U					0.0001 U		
1,1,1-TRICHLOROETHANE			0.0001 U			0.0001 U					0.0001 U	
1,1,2,2-TETRACHLOROETHANE			0.0001 U			0.0001 U					0.0001 U	
1,1,2-TRICHLOROETHANE			0.0001 U			0.0001 U					0.0001 U	
1,1-DICHLOROETHANE			0.0001 U			0.0001 U					0.0001 U	
1,1-DICHLOROETHYLENE			0.0001 U			0.0001 U					0.0001 U	
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE			0.0001 U			0.0001 U					0.0001 U	
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE			0.0001 U			0.0001 U					0.0001 U	
1,2-DIBROMO-3-CHLOROPROPANE			0.0002 U		0.0002 U						0.0002 U	
1,2-DIBROMOETHANE			0.0001 U		0.0001 U						0.0001 U	
1,2-DICHLOROBENZENE			0.0001 U			0.0001					0.0001 U	
1,2-DICHLOROETHANE			0.0001 U			0.0002					0.0001 U	
1,2-DICHLOROETHYLENE								0.0001				
1,2-DICHLOROPROPANE			0.0001 U			0.0001 U					0.0001 U	
1,2-TRANS-DICHLOROETHYLENE			0.0001 U			0.0001 U					0.0001 U	
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE			0.0001 U			0.0001 U					0.0001 U	
1,3-DICHLOROBENZENE			0.0001 U			0.0001					0.0001 U	
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE			0.0001 U			0.0001 U					0.0001 U	
1,4-DICHLOROBENZENE			0.0001 U			0.0009					0.0001 U	
1,4-DIOXANE			0.02 U			0.02 U					0.02 U	
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE			0.003 U			0.003 U					0.0085	
ACETONITRILE												
ACROLEIN			0.004 U			0.004 U					0.004 U	
ACRYLONITRILE			0.001 U			0.001 U					0.001 U	
BENZENE			0.0001 U			0.0003					0.0001 U	
BROMOBENZENE												
BROMOCHLOROMETHANE		0.0001 U			0.0001 U					0.0001 U		
BROMOFORM			0.0001 U			0.0001 U					0.0001 U	
CARBON DISULFIDE			0.0004 U			0.0004 U					0.0004 U	
CARBON TETRACHLORIDE			0.0001 U			0.0001 U					0.0001 U	
CHLOROBENZENE			0.0001 U			0.0043					0.0001 U	
CHLORODIBROMOMETHANE			0.0001 U			0.0001 U					0.0001 U	
CHLOROETHANE			0.0001 U			0.0001 U					0.0001 U	
CHLOROFORM			0.0001 U			0.0001 U					0.0001 U	
DICHLOROBROMOMETHANE			0.0001 U			0.0001 U					0.0001 U	

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chemical_name	DW-10D DW-10D- 090805 9/8/2005	DW-10S DW-10S- 031805 3/18/2005	DW-10S DW-10S- 031811 3/18/2011	DW-13D DW-13D- 031208 3/12/2008	DW-13D DW-13D- 032311 3/23/2011	DW-13D DW-13D- 072312 7/23/2012	DW-13D DW-13D- 090805 9/8/2005	DW-13D DW-13D- 120100 12/1/2000	DW-13D DW-13D- 121505 12/15/2005	DW-13S DW-13S- 031805 3/18/2005	DW-13S DW-13S- 031811 3/18/2011	DW-14 DW-14- 031208 3/12/2008
DICHLORODIFLUOROMETHANE			0.0001 U			0.0001 U					0.0001 U	
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE			0.0001 U			0.0001 U					0.0001 U	
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE					0.0002 U							
METHACRYLONITRILE												
METHYL ACETATE			0.0003 U			0.0003 U					0.0003 U	
METHYL ACRYLATE												
METHYL BROMIDE			0.0001 U			0.0001 U					0.0001 U	
METHYL CHLORIDE			0.0002 U			0.0002 U					0.0002 U	
METHYL ETHYL KETONE			0.001 U			0.001 U					0.001 U	
METHYL IODIDE												
METHYL ISOBUTYL KETONE			0.001 U			0.001 U					0.001 U	
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE			0.0002 U			0.0002 U					0.0002 U	
METHYL-T-BUTYL ETHER			0.0001 U			0.012					0.0012	
NAPHTHALENE			0.0001 U			0.0001 U					0.0001 U	
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE		0.0001 U			0.0001 U					0.0001 U		
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE			0.0001 U			0.0001 U					0.0001 U	
t-Butyl Alcohol			0.004 U			0.004 U					0.004 U	
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE			0.0001 U			0.0001 U					0.0001 U	
TETRAHYDROFURAN												
TOLUENE			0.0001 U			0.0001 U					0.0001 U	
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE			0.0001 U			0.0001 U					0.0001 U	
TRICHLOROFLUOROMETHANE			0.0001 U			0.0001 U					0.0001 U	
TVOC												
VINYL CHLORIDE			0.00008 U			0.00008 U					0.00008 U	
XYLENES,TOTAL			0.0001 U			0.0001 U					0.0001 U	
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE						0.0005 U						
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE						0.001 U						
2,3,4,6-Tetrachlorophenol						0.0005 U						

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chemical_name	DW-10D DW-10D- 090805 9/8/2005	DW-10S DW-10S- 031805 3/18/2005	DW-10S DW-10S- 031811 3/18/2011	DW-13D DW-13D- 031208 3/12/2008	DW-13D DW-13D- 032311 3/23/2011	DW-13D DW-13D- 072312 7/23/2012	DW-13D DW-13D- 090805 9/8/2005	DW-13D DW-13D- 120100 12/1/2000	DW-13D DW-13D- 121505 12/15/2005	DW-13S DW-13S- 031805 3/18/2005	DW-13S DW-13S- 031811 3/18/2011	DW-14 DW-14- 031208 3/12/2008
2,4,5-TRICHLOROPHENOL						0.0005 U						
2,4,6-TRICHLOROPHENOL						0.0005 U						
2,4-DICHLOROPHENOL						0.0005 U						
2,4-DIMETHYLPHENOL						0.0005 U						
2,4-DINITROPHENOL						0.01 U						
2,4-DINITROTOLUENE						0.001 U						
2,6-DINITROTOLUENE						0.0005 U						
2-CHLORONAPHTHALENE						0.0004 U						
2-CHLOROPHENOL						0.0005 U						
2-METHYL-4,6-DINITROPHENOL						0.005 U						
2-METHYLNAPHTHALENE						0.0001 U						
2-NITROANILINE						0.0005 U						
2-NITROPHENOL						0.0005 U						
3,3-DICHLOROBENZIDINE						0.002 U						
3-NITROANILINE						0.0005 U						
4-BROMOPHENYL PHENYL ETHER						0.0005 U						
4-CHLORO-3-METHYLPHENOL						0.0005 U						
4-CHLOROANILINE						0.0005 U						
4-CHLOROPHENYL PHENYL ETHER						0.0005 U						
4-NITROANILINE						0.0005 U						
4-NITROPHENOL						0.01 U						
ACENAPHTHENE						0.0001 U						
ACENAPHTHYLENE						0.0001 U						
ACETOPHENONE						0.0005 U						
ANILINE												
ANTHRACENE						0.0001 U						
ATRAZINE						0.002 U						
AZOBENZENE												
BENZALDEHYDE						0.001 U						
BENZIDINE						0.019 U						
BENZO(A)ANTHRACENE						0.0001 U						
BENZO(A)PYRENE						0.0001 U						
BENZO(B)FLUORANTHENE						0.0001 U						
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE						0.0001 U						
BENZO(K)FLUORANTHENE						0.0001 U						
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE						0.002 U						
Biphenyl						0.0005 U						
BIS(2-CHLOROETHOXY) METHANE						0.0005 U						
BIS(2-CHLOROETHYL) ETHER						0.0005 U						
Bis(2-chloroisopropyl) ether						0.0005 U						
BIS(2-CHLOROISOPROPYL)ETHER						0.0005 U						
BIS(2-ETHYLHEXYL)PHTHALATE						0.002 U						
CAPROLACTAM						0.005 U						
CARBAZOLE						0.0005 U						
CHRYSENE						0.0001 U						

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chemical_name	DW-10D DW-10D- 090805 9/8/2005	DW-10S DW-10S- 031805 3/18/2005	DW-10S DW-10S- 031811 3/18/2011	DW-13D DW-13D- 031208 3/12/2008	DW-13D DW-13D- 032311 3/23/2011	DW-13D DW-13D- 072312 7/23/2012	DW-13D DW-13D- 090805 9/8/2005	DW-13D DW-13D- 120100 12/1/2000	DW-13D DW-13D- 121505 12/15/2005	DW-13S DW-13S- 031805 3/18/2005	DW-13S DW-13S- 031811 3/18/2011	DW-14 DW-14- 031208 3/12/2008
CRESOL,O						0.0005 U						
CRESOL,P						0.0005 U						
DIBENZO(A,H)ANTHRACENE						0.0001 U						
DIBENZOFURAN						0.0005 U						
DIETHYL PHTHALATE						0.002 U						
DIMETHYL PHTHALATE						0.002 U						
DI-N-BUTYL PHTHALATE						0.002 U						
DI-N-OCTYL PHTHALATE						0.002 U						
FLUORANTHENE						0.0001 U						
FLUORENE						0.0001 U						
HEXACHLOROBENZENE						0.0001 U						
HEXACHLOROBUTADIENE						0.0005 U						
HEXACHLOROCYCLOPENTADIENE						0.005 U						
HEXACHLOROETHANE						0.001 U						
INDENO(1,2,3-CD)PYRENE						0.0001 U						
ISOPHORONE						0.0005 U						
NAPHTHALENE						0.0001 U						
NITROBENZENE						0.0005 U						
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE						0.0005 U						
N-NITROSODIPHENYLAMINE						0.0005 U						
PENTACHLOROPHENOL						0.001 U						
PHENANTHRENE						0.0001 U						
PHENOL						0.0005 U						
PYRENE						0.0001 U						
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM			0.504		0.436						0.25	
ANTIMONY			0.01 U		0.01 U						0.01 U	
ARSENIC			0.0098 U		0.0098 U						0.0098 U	
BARIUM			0.0407		0.0487						0.0335	
BERYLLIUM			0.0014 U		0.0014 U						0.0014 U	
CADMIUM			0.002 U		0.002 U						0.002 U	
CALCIUM			1.32		3.14						1.8	
CHROMIUM			0.0034 U		0.0034 U						0.0034 U	
COBALT			0.0023 U		0.0114						0.0023 U	
COPPER					0.0027 U							
IRON			1.22		7.78						0.118	
LEAD			0.0069 U		0.0069 U						0.0069 U	
MAGNESIUM			0.499		1.08						1.42	
MANGANESE			0.106		0.118						0.0246	
MERCURY			0.00005 U		0.00005 U						0.00005 U	
NICKEL			0.0052		0.0117						0.003 U	
POTASSIUM			0.707		0.967						0.751	
SELENIUM			0.0089 U		0.0089 U						0.0089 U	
SILVER			0.0023 U		0.0023 U						0.0023 U	
SODIUM			2.68		4.58						3.01	
THALLIUM			0.014 U		0.014 U						0.014 U	

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chemical_name	DW-10D DW-10D- 090805 9/8/2005	DW-10S DW-10S- 031805 3/18/2005	DW-10S DW-10S- 031811 3/18/2011	DW-13D DW-13D- 031208 3/12/2008	DW-13D DW-13D- 032311 3/23/2011	DW-13D DW-13D- 072312 7/23/2012	DW-13D DW-13D- 090805 9/8/2005	DW-13D DW-13D- 120100 12/1/2000	DW-13D DW-13D- 121505 12/15/2005	DW-13S DW-13S- 031805 3/18/2005	DW-13S DW-13S- 031811 3/18/2011	DW-14 DW-14- 031208 3/12/2008
VANADIUM			0.0025 U		0.0025 U						0.0025 U	
ZINC					0.43							
Metals, Filtered (mg/L)												
ALUMINUM			0.42		0.439						0.229	
ANTIMONY			0.01 U		0.01 U						0.01 U	
ARSENIC			0.0098 U		0.0098 U						0.0098 U	
BARIUM			0.0402		0.0484						0.0334	
BERYLLIUM			0.0014 U		0.0014 U						0.0014 U	
CADMIUM			0.002 U		0.002 U						0.002 U	
CALCIUM			1.3		3.04						1.77	
CHROMIUM			0.0034 U		0.0034 U						0.0034 U	
COBALT			0.0023 U		0.0112						0.0024	
COPPER					0.0046						0.0027 U	
IRON			0.0613		7.6						0.0996	
LEAD			0.0069 U		0.0069 U						0.0069 U	
MAGNESIUM			0.492		1.07						1.43	
MANGANESE			0.104		0.116						0.0244	
MERCURY			0.00005 U		0.00005 U						0.00005 U	
NICKEL			0.0042		0.0103						0.003 U	
POTASSIUM			0.647		0.938						0.755	
SELENIUM			0.0089 U		0.0089 U						0.0089 U	
SILVER			0.0023 U		0.0023 U						0.0023 U	
SODIUM			2.69		4.68						2.96	
THALLIUM			0.014 U		0.014 U						0.014 U	
VANADIUM			0.0025 U		0.0025 U						0.0025 U	
ZINC					0.44							
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon				10								15.4
CHEMICAL OXYGEN DEMAND												
CHLORIDE				12.5								24.4
FERROUS IRON				10.7								14.1
FREE CARBON DIOXIDE				0.46 U								0.46 U
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1				0.46 U								0.46 U
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1				0.46 U								0.46 U
Nitrate (as N), Nitrogen, Nitrite				0.027								0.033
Nitrate, Nitrogen NO2, NO3				0.04 U								0.04 U
PH				4.6								4.3
SULFATE				40.5								53.5
Sulfide				0.53 U								0.53 U
TOTAL DISSOLVED SOLIDS				79.5								103
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON				1 U								1 U
TOTAL SUSPENDED SOLIDS				4.4								3 U

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chemical_name	DW-10D DW-10D- 090805 9/8/2005	DW-10S DW-10S- 031805 3/18/2005	DW-10S DW-10S- 031811 3/18/2011	DW-13D DW-13D- 031208 3/12/2008	DW-13D DW-13D- 032311 3/23/2011	DW-13D DW-13D- 072312 7/23/2012	DW-13D DW-13D- 090805 9/8/2005	DW-13D DW-13D- 120100 12/1/2000	DW-13D DW-13D- 121505 12/15/2005	DW-13S DW-13S- 031805 3/18/2005	DW-13S DW-13S- 031811 3/18/2011	DW-14 DW-14- 031208 3/12/2008
Field Parameters (mg/L)												
CONDUCTIVITY	92	58							210	71		
DISSOLVED OXYGEN	4.95	5.26					4.62			4.11		
PH	4.91	4.35								4.31		
TEMPERATURE	14	10							9	10		
Dissolved Gases (mg/L)												
ETHANE				0.001 U								0.0018
ETHYLENE				0.001 U								0.001 U
ETHYLENIMINE												
METHANE				0.0075								0.028
PROPANE				0.001 U								0.001 U

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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chemical_name	DW-14 DW-14-032311 3/23/2011	DW-14 DW-14-090805 9/8/2005	DW-14 DW-14-092211 9/22/2011	DW-14 DW-14-121505 12/15/2005	DW-1D DW-1D-032411 3/24/2011	DW-1D DW-1D-072312 7/23/2012	DW-1D DW-1D-090705 9/7/2005	DW-1D DW-1D-092211 9/22/2011	DW-1S DW-1S-032411 3/24/2011	DW-1S DW-1S-072312 7/23/2012	DW-1S DW-1S-090102 9/1/2002	DW-1S DW-1S-090705 9/7/2005
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE	0.0001 U				0.0001 U				0.0001 U			
1,1,1-TRICHLOROETHANE			0.0001 U					0.0001 U				
1,1,2,2-TETRACHLOROETHANE			0.0001 U					0.0005				
1,1,2-TRICHLOROETHANE			0.0001 U					0.0001 U				
1,1-DICHLOROETHANE			0.0001 U					0.0001 U				
1,1-DICHLOROETHYLENE			0.0001 U					0.0003				
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE			0.0001 U					0.0005				
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE			0.0001					0.0001				
1,2-DIBROMO-3-CHLOROPROPANE	0.0002 U				0.0002 U				0.0002 U			
1,2-DIBROMOETHANE	0.0001 U				0.0001 U				0.0001 U			
1,2-DICHLOROBENZENE			0.0001 U					0.0001				
1,2-DICHLOROETHANE			0.0003					0.0006				
1,2-DICHLOROETHYLENE											0.0002	
1,2-DICHLOROPROPANE			0.0001 U					0.0001 U				
1,2-TRANS-DICHLOROETHYLENE			0.0001 U					0.0001 U				
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE			0.0001 U					0.0001 U				
1,3-DICHLOROBENZENE			0.0001 U					0.0001 U				
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE			0.0001 U					0.0001 U				
1,4-DICHLOROBENZENE			0.0001					0.0003				
1,4-DIOXANE			0.02 U									
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE			0.012					0.003 U				
ACETONITRILE												
ACROLEIN			0.004 U					0.004 U				
ACRYLONITRILE			0.001 U					0.001 U				
BENZENE			0.0006					0.0001				
BROMOBENZENE												
BROMOCHLOROMETHANE	0.0001 U				0.0001 U				0.0001 U			
BROMOFORM			0.0001 U					0.0001 U				
CARBON DISULFIDE			0.0004 U					0.0004 U				
CARBON TETRACHLORIDE			0.0001 U					0.0001 U				
CHLOROBENZENE			0.001					0.0001				
CHLORODIBROMOMETHANE			0.0001 U					0.0001 U				
CHLOROETHANE			0.0001 U					0.0001 U				
CHLOROFORM			0.0001 U					0.0001 U				
DICHLOROBROMOMETHANE			0.0001 U					0.0001 U				

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-14 DW-14-032311 3/23/2011	DW-14 DW-14-090805 9/8/2005	DW-14 DW-14-092211 9/22/2011	DW-14 DW-14-121505 12/15/2005	DW-1D DW-1D-032411 3/24/2011	DW-1D DW-1D-072312 7/23/2012	DW-1D DW-1D-090705 9/7/2005	DW-1D DW-1D-092211 9/22/2011	DW-1S DW-1S-032411 3/24/2011	DW-1S DW-1S-072312 7/23/2012	DW-1S DW-1S-090102 9/1/2002	DW-1S DW-1S-090705 9/7/2005
DICHLORODIFLUOROMETHANE			0.0001 U					0.0001 U				
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE			0.0001 U					0.0001 U				
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE	0.0002 U				0.0002 U				0.0002 U			
METHACRYLONITRILE												
METHYL ACETATE			0.0003 U					0.0003 U				
METHYL ACRYLATE												
METHYL BROMIDE			0.0001 U					0.0001 U				
METHYL CHLORIDE			0.0002 U					0.0002 U				
METHYL ETHYL KETONE			0.001 U					0.001 U				
METHYL IODIDE												
METHYL ISOBUTYL KETONE			0.001 U					0.001 U				
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE			0.0002 U					0.0002 U				
METHYL-T-BUTYL ETHER			0.024					0.0024				
NAPHTHALENE			0.0001									
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE	0.0001 U				0.0001 U				0.0001 U			
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE			0.0001 U					0.0001 U				
t-Butyl Alcohol			0.014					0.004 U				
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE			0.0001 U					0.0001 U				
TETRAHYDROFURAN												
TOLUENE			0.0001 U					0.0001 U				
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE			0.0001 U					0.0005				
TRICHLOROFLUOROMETHANE			0.0001 U					0.0001 U				
TVOC												
VINYL CHLORIDE			0.00008 U					0.00008 U				
XYLENES,TOTAL			0.0001					0.0001 U				
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE						0.0005 U				0.0005 U		
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE						0.003				0.0009 U		
2,3,4,6-Tetrachlorophenol						0.0005 U				0.0005 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	DW-14 DW-14-032311 3/23/2011	DW-14 DW-14-090805 9/8/2005	DW-14 DW-14-092211 9/22/2011	DW-14 DW-14-121505 12/15/2005	DW-1D DW-1D-032411 3/24/2011	DW-1D DW-1D-072312 7/23/2012	DW-1D DW-1D-090705 9/7/2005	DW-1D DW-1D-092211 9/22/2011	DW-1S DW-1S-032411 3/24/2011	DW-1S DW-1S-072312 7/23/2012	DW-1S DW-1S-090102 9/1/2002	DW-1S DW-1S-090705 9/7/2005
2,4,5-TRICHLOROPHENOL						0.0005 U				0.0005 U		
2,4,6-TRICHLOROPHENOL						0.0005 U				0.0005 U		
2,4-DICHLOROPHENOL						0.0005 U				0.0005 U		
2,4-DIMETHYLPHENOL						0.0005 U				0.0005 U		
2,4-DINITROPHENOL						0.009 U				0.009 U		
2,4-DINITROTOLUENE						0.0009 U				0.0009 U		
2,6-DINITROTOLUENE						0.0005 U				0.0005 U		
2-CHLORONAPHTHALENE						0.0004 U				0.0004 U		
2-CHLOROPHENOL						0.0005 U				0.0005 U		
2-METHYL-4,6-DINITROPHENOL						0.005 U				0.005 U		
2-METHYLNAPHTHALENE						0.00009 U				0.00009 U		
2-NITROANILINE						0.0005 U				0.0005 U		
2-NITROPHENOL						0.0005 U				0.0005 U		
3,3-DICHLOROBENZIDINE						0.002 U				0.002 U		
3-NITROANILINE						0.0005 U				0.0005 U		
4-BROMOPHENYL PHENYL ETHER						0.0005 U				0.0005 U		
4-CHLORO-3-METHYLPHENOL						0.0005 U				0.0005 U		
4-CHLOROANILINE						0.0005 U				0.0005 U		
4-CHLOROPHENYL PHENYL ETHER						0.0005 U				0.0005 U		
4-NITROANILINE						0.0005 U				0.0005 U		
4-NITROPHENOL						0.009 U				0.009 U		
ACENAPHTHENE						0.00009 U				0.00009 U		
ACENAPHTHYLENE						0.00009 U				0.00009 U		
ACETOPHENONE						0.0005 U				0.0005 U		
ANILINE												
ANTHRACENE						0.00009 U				0.00009 U		
ATRAZINE						0.002 U				0.002 U		
AZOBENZENE												
BENZALDEHYDE						0.0009 U				0.0009 U		
BENZIDINE						0.019 U				0.019 U		
BENZO(A)ANTHRACENE						0.00009 U				0.00009 U		
BENZO(A)PYRENE						0.00009 U				0.00009 U		
BENZO(B)FLUORANTHENE						0.00009 U				0.00009 U		
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE						0.00009 U				0.00009 U		
BENZO(K)FLUORANTHENE						0.00009 U				0.00009 U		
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE						0.002 U				0.002 U		
Biphenyl						0.0005 U				0.0005 U		
BIS(2-CHLOROETHOXY) METHANE						0.0005 U				0.0005 U		
BIS(2-CHLOROETHYL) ETHER						0.0005 U				0.0005 U		
Bis(2-chloroisopropyl) ether						0.0005 U				0.0005 U		
BIS(2-CHLOROISOPROPYL)ETHER						0.0005 U				0.0005 U		
BIS(2-ETHYLHEXYL)PHTHALATE						0.002 U				0.002 U		
CAPROLACTAM						0.005 U				0.005 U		
CARBAZOLE						0.0005 U				0.0005 U		
CHRYSENE						0.00009 U				0.00009 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	DW-14 DW-14- 032311 3/23/2011	DW-14 DW-14- 090805 9/8/2005	DW-14 DW-14- 092211 9/22/2011	DW-14 DW-14- 121505 12/15/2005	DW-1D DW-1D- 032411 3/24/2011	DW-1D DW-1D- 072312 7/23/2012	DW-1D DW-1D- 090705 9/7/2005	DW-1D DW-1D- 092211 9/22/2011	DW-1S DW-1S- 032411 3/24/2011	DW-1S DW-1S- 072312 7/23/2012	DW-1S DW-1S- 090102 9/1/2002	DW-1S DW-1S- 090705 9/7/2005
CRESOL,O						0.0005 U				0.0005 U		
CRESOL,P						0.0005 U				0.0005 U		
DIBENZO(A,H)ANTHRACENE						0.00009 U				0.00009 U		
DIBENZOFURAN						0.0005 U				0.0005 U		
DIETHYL PHTHALATE						0.002 U				0.002 U		
DIMETHYL PHTHALATE						0.002 U				0.002 U		
DI-N-BUTYL PHTHALATE						0.002 U				0.002 U		
DI-N-OCTYL PHTHALATE						0.002 U				0.002 U		
FLUORANTHENE						0.00009 U				0.00009 U		
FLUORENE						0.00009 U				0.00009 U		
HEXACHLOROBENZENE						0.00009 U				0.00009 U		
HEXACHLOROBUTADIENE						0.0005 U				0.0005 U		
HEXACHLOROCYCLOPENTADIENE						0.005 U				0.005 U		
HEXACHLOROETHANE						0.0009 U				0.0009 U		
INDENO(1,2,3-CD)PYRENE						0.00009 U				0.00009 U		
ISOPHORONE						0.0005 U				0.0005 U		
NAPHTHALENE						0.00009 U				0.00009 U		
NITROBENZENE						0.0005 U				0.0005 U		
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE						0.0005 U				0.0005 U		
N-NITROSODIPHENYLAMINE						0.0005 U				0.0005 U		
PENTACHLOROPHENOL						0.0009 U				0.0009 U		
PHENANTHRENE						0.00009 U				0.00009 U		
PHENOL						0.0005 U				0.0005 U		
PYRENE						0.00009 U				0.00009 U		
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM	1.03				4.35				1.88			
ANTIMONY	0.01 U				0.01 U				0.01 U			
ARSENIC	0.0098 U				0.0098 U				0.0098 U			
BARIUM	0.0676				0.0424				0.0798			
BERYLLIUM	0.0014 U				0.0042				0.0023			
CADMIUM	0.002 U				0.002 U				0.002 U			
CALCIUM	3.2				10.3				0.716			
CHROMIUM	0.0034 U				0.0034 U				0.0034 U			
COBALT	0.0122				0.0299				0.0051			
COPPER	0.0038				0.012				0.0027 U			
IRON	11.5				0.183				0.0522 U			
LEAD	0.0069 U				0.0069 U				0.0069 U			
MAGNESIUM	1.53				4.21				0.46			
MANGANESE	0.148				0.379				0.0589			
MERCURY	0.00005 U				0.00005 U				0.00005 U			
NICKEL	0.0134				0.0364				0.0085			
POTASSIUM	1.37				2.76				0.691			
SELENIUM	0.0089 U				0.0089 U				0.0089 U			
SILVER	0.0023 U				0.0023 U				0.0023 U			
SODIUM	9.69				16.8				2.87			
THALLIUM	0.014 U				0.014 U				0.014 U			

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chemical_name	DW-14 DW-14- 032311 3/23/2011	DW-14 DW-14- 090805 9/8/2005	DW-14 DW-14- 092211 9/22/2011	DW-14 DW-14- 121505 12/15/2005	DW-1D DW-1D- 032411 3/24/2011	DW-1D DW-1D- 072312 7/23/2012	DW-1D DW-1D- 090705 9/7/2005	DW-1D DW-1D- 092211 9/22/2011	DW-1S DW-1S- 032411 3/24/2011	DW-1S DW-1S- 072312 7/23/2012	DW-1S DW-1S- 090102 9/1/2002	DW-1S DW-1S- 090705 9/7/2005
VANADIUM	0.0043				0.0025 U				0.0025 U			
ZINC	0.246				0.54				0.375			
Metals, Filtered (mg/L)												
ALUMINUM	1.07				4.35				1.97			
ANTIMONY	0.01 U				0.01 U				0.01 U			
ARSENIC	0.0098 U				0.0098 U				0.0098 U			
BARIUM	0.0711				0.0412				0.08			
BERYLLIUM	0.0014 U				0.0025				0.0014 U			
CADMIUM	0.002 U				0.002 U				0.002 U			
CALCIUM	3.2				9.87				0.731			
CHROMIUM	0.0034 U				0.0034 U				0.0034 U			
COBALT	0.0122				0.0293				0.0045			
COPPER	0.0031				0.0197				0.0049			
IRON	7.88				0.0522 U				0.0522 U			
LEAD	0.0069 U				0.0069 U				0.0069 U			
MAGNESIUM	1.57				4.05				0.472			
MANGANESE	0.152				0.377				0.0596			
MERCURY	0.00005 U				0.00005 U				0.00005 U			
NICKEL	0.0133				0.0347				0.0074			
POTASSIUM	1.33				2.52				0.689			
SELENIUM	0.0089 U				0.0089 U				0.0089 U			
SILVER	0.0023 U				0.0023 U				0.0023 U			
SODIUM	9.81				16.7				3.03			
THALLIUM	0.014 U				0.014 U				0.014 U			
VANADIUM	0.0025 U				0.0025 U				0.0025 U			
ZINC	0.264				0.549				0.388			
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon												
CHEMICAL OXYGEN DEMAND												
CHLORIDE												
FERROUS IRON												
FREE CARBON DIOXIDE												
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1												
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1												
Nitrate (as N), Nitrogen, Nitrite												
Nitrate, Nitrogen NO2, NO3												
PH												
SULFATE												
Sulfide												
TOTAL DISSOLVED SOLIDS												
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON												
TOTAL SUSPENDED SOLIDS												

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chemical_name	DW-14 DW-14-032311 3/23/2011	DW-14 DW-14-090805 9/8/2005	DW-14 DW-14-092211 9/22/2011	DW-14 DW-14-121505 12/15/2005	DW-1D DW-1D-032411 3/24/2011	DW-1D DW-1D-072312 7/23/2012	DW-1D DW-1D-090705 9/7/2005	DW-1D DW-1D-092211 9/22/2011	DW-1S DW-1S-032411 3/24/2011	DW-1S DW-1S-072312 7/23/2012	DW-1S DW-1S-090102 9/1/2002	DW-1S DW-1S-090705 9/7/2005
Field Parameters (mg/L)												
CONDUCTIVITY				209			300					91
DISSOLVED OXYGEN		4.03					4.37					7.09
PH							4.75					4.69
TEMPERATURE				10			15					16
Dissolved Gases (mg/L)												
ETHANE												
ETHYLENE												
ETHYLENIMINE												
METHANE												
PROPANE												

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
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CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-1S DW-1S-092211 9/22/2011	DW-5D DW-5D-032311 3/23/2011	DW-5D DW-5D-090805 9/8/2005	DW-5D DW-5D-092111 9/21/2011	DW-5D DW-5D-121505 12/15/2005	DW-5S DW-5S-030103 3/1/2003	DW-5S DW-5S-031308 3/13/2008	DW-5S DW-5S-032311 3/23/2011	DW-5S DW-5S-090805 9/8/2005	DW-5S DW-5S-092111 9/21/2011	DW-5S DW-5S-121505 12/15/2005	DW-7D DW-7D-031501 3/15/2001
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE		0.0001 U						0.0001 U				
1,1,1-TRICHLOROETHANE	0.0001 U			0.0001 U						0.0001 U		
1,1,2,2-TETRACHLOROETHANE	0.0001 U			0.0004						0.0004		
1,1,2-TRICHLOROETHANE	0.0001 U			0.0001 U						0.0001 U		
1,1-DICHLOROETHANE	0.0001 U			0.0001						0.0001 U		
1,1-DICHLOROETHYLENE	0.0001 U			0.0009						0.0001 U		
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE	0.0001			0.0001 U						0.0001		
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE	0.0001 U			0.0002						0.0001 U		
1,2-DIBROMO-3-CHLOROPROPANE		0.0002 U						0.0002 U				
1,2-DIBROMOETHANE		0.0001 U						0.0001 U				
1,2-DICHLOROBENZENE	0.0005			0.0001 U						0.0001 U		
1,2-DICHLOROETHANE	0.0001 U			0.0001 U						0.0001		
1,2-DICHLOROETHYLENE						0.0003						
1,2-DICHLOROPROPANE	0.0001 U			0.0001 U						0.0001 U		
1,2-TRANS-DICHLOROETHYLENE	0.0001 U			0.0001 U						0.0001 U		
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE	0.0001 U			0.0001 U						0.0001 U		
1,3-DICHLOROBENZENE	0.0001			0.0001 U						0.0001 U		
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U			0.0001 U						0.0001 U		
1,4-DICHLOROBENZENE	0.0004			0.0001 U						0.0003		
1,4-DIOXANE				0.02 U						0.02 U		
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE	0.003 U			0.003 U						0.0063		
ACETONITRILE												
ACROLEIN	0.004 U			0.004 U						0.004 U		
ACRYLONITRILE	0.001 U			0.001 U						0.001 U		
BENZENE	0.0001 U			0.0006						0.0001 U		
BROMOBENZENE												
BROMOCHLOROMETHANE		0.0001 U						0.0001 U				
BROMOFORM	0.0001 U			0.0001 U						0.0001 U		
CARBON DISULFIDE	0.0004 U			0.0004 U						0.0004 U		
CARBON TETRACHLORIDE	0.0001 U			0.0001 U						0.0001 U		
CHLOROBENZENE	0.001			0.0001 U						0.0005		
CHLORODIBROMOMETHANE	0.0001 U			0.0001 U						0.0001 U		
CHLOROETHANE	0.0001 U			0.0001 U						0.0001 U		
CHLOROFORM	0.0001 U			0.0001						0.0001 U		
DICHLOROBROMOMETHANE	0.0001 U			0.0001 U						0.0001 U		

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chemical_name	DW-1S DW-1S-092211 9/22/2011	DW-5D DW-5D-032311 3/23/2011	DW-5D DW-5D-090805 9/8/2005	DW-5D DW-5D-092111 9/21/2011	DW-5D DW-5D-121505 12/15/2005	DW-5S DW-5S-030103 3/1/2003	DW-5S DW-5S-031308 3/13/2008	DW-5S DW-5S-032311 3/23/2011	DW-5S DW-5S-090805 9/8/2005	DW-5S DW-5S-092111 9/21/2011	DW-5S DW-5S-121505 12/15/2005	DW-7D DW-7D-031501 3/15/2001
DICHLORODIFLUOROMETHANE	0.0001 U			0.0001 U						0.0001 U		
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE	0.0001 U			0.0001 U						0.0001 U		
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE		0.0002 U						0.0002 U				
METHACRYLONITRILE												
METHYL ACETATE	0.0003 U			0.0003 U						0.0003 U		
METHYL ACRYLATE												
METHYL BROMIDE	0.0001 U			0.0001 U						0.0001 U		
METHYL CHLORIDE	0.0002 U			0.0002 U						0.0002 U		
METHYL ETHYL KETONE	0.001 U			0.001 U						0.001 U		
METHYL IODIDE												
METHYL ISOBUTYL KETONE	0.001 U			0.001 U						0.001 U		
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE	0.0002 U			0.0002 U						0.0002 U		
METHYL-T-BUTYL ETHER	0.002			0.0019						0.012		
NAPHTHALENE				0.0001 U						0.0001 U		
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE		0.0001 U						0.0001 U				
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE	0.0001 U			0.0001 U						0.0001 U		
t-Butyl Alcohol	0.004 U			0.004 U						0.004 U		
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE	0.0001 U			0.0001 U						0.0001 U		
TETRAHYDROFURAN												
TOLUENE	0.0001 U			0.0001 U						0.0001 U		
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE	0.0001 U			0.0009						0.0001 U		
TRICHLOROFLUOROMETHANE	0.0001 U			0.0001 U						0.0001 U		
TVOC												
VINYL CHLORIDE	0.00008 U			0.0005						0.00008 U		
XYLENES,TOTAL	0.0001 U			0.0001 U						0.0001 U		
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE												
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE												
2,3,4,6-Tetrachlorophenol												

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-1S DW-1S-092211 9/22/2011	DW-5D DW-5D-032311 3/23/2011	DW-5D DW-5D-090805 9/8/2005	DW-5D DW-5D-092111 9/21/2011	DW-5D DW-5D-121505 12/15/2005	DW-5S DW-5S-030103 3/1/2003	DW-5S DW-5S-031308 3/13/2008	DW-5S DW-5S-032311 3/23/2011	DW-5S DW-5S-090805 9/8/2005	DW-5S DW-5S-092111 9/21/2011	DW-5S DW-5S-121505 12/15/2005	DW-7D DW-7D-031501 3/15/2001
2,4,5-TRICHLOROPHENOL												
2,4,6-TRICHLOROPHENOL												
2,4-DICHLOROPHENOL												
2,4-DIMETHYLPHENOL												
2,4-DINITROPHENOL												
2,4-DINITROTOLUENE												
2,6-DINITROTOLUENE												
2-CHLORONAPHTHALENE												
2-CHLOROPHENOL												
2-METHYL-4,6-DINITROPHENOL												
2-METHYLNAPHTHALENE												
2-NITROANILINE												
2-NITROPHENOL												
3,3-DICHLOROBENZIDINE												
3-NITROANILINE												
4-BROMOPHENYL PHENYL ETHER												
4-CHLORO-3-METHYLPHENOL												
4-CHLOROANILINE												
4-CHLOROPHENYL PHENYL ETHER												
4-NITROANILINE												
4-NITROPHENOL												
ACENAPHTHENE												
ACENAPHTHYLENE												
ACETOPHENONE												
ANILINE												
ANTHRACENE												
ATRAZINE												
AZOBENZENE												
BENZALDEHYDE												
BENZIDINE												
BENZO(A)ANTHRACENE												
BENZO(A)PYRENE												
BENZO(B)FLUORANTHENE												
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE												
BENZO(K)FLUORANTHENE												
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE												
Biphenyl												
BIS(2-CHLOROETHOXY) METHANE												
BIS(2-CHLOROETHYL) ETHER												
Bis(2-chloroisopropyl) ether												
BIS(2-CHLOROISOPROPYL)ETHER												
BIS(2-ETHYLHEXYL)PHTHALATE												
CAPROLACTAM												
CARBAZOLE												
CHRYSENE												

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-1S DW-1S-092211 9/22/2011	DW-5D DW-5D-032311 3/23/2011	DW-5D DW-5D-090805 9/8/2005	DW-5D DW-5D-092111 9/21/2011	DW-5D DW-5D-121505 12/15/2005	DW-5S DW-5S-030103 3/1/2003	DW-5S DW-5S-031308 3/13/2008	DW-5S DW-5S-032311 3/23/2011	DW-5S DW-5S-090805 9/8/2005	DW-5S DW-5S-092111 9/21/2011	DW-5S DW-5S-121505 12/15/2005	DW-7D DW-7D-031501 3/15/2001
CRESOL,O												
CRESOL,P												
DIBENZO(A,H)ANTHRACENE												
DIBENZOFURAN												
DIETHYL PHTHALATE												
DIMETHYL PHTHALATE												
DI-N-BUTYL PHTHALATE												
DI-N-OCTYL PHTHALATE												
FLUORANTHENE												
FLUORENE												
HEXACHLOROBENZENE												
HEXACHLOROBUTADIENE												
HEXACHLOROCYCLOPENTADIENE												
HEXACHLOROETHANE												
INDENO(1,2,3-CD)PYRENE												
ISOPHORONE												
NAPHTHALENE												
NITROBENZENE												
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE												
N-NITROSODIPHENYLAMINE												
PENTACHLOROPHENOL												
PHENANTHRENE												
PHENOL												
PYRENE												
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM		5.42						4.1				
ANTIMONY		0.01 U						0.01 U				
ARSENIC		0.0098 U						0.0098 U				
BARIUM		0.0432						0.0964				
BERYLLIUM		0.0026						0.0022				
CADMIUM		0.002 U						0.0055				0.0012
CALCIUM		10.4						10.2				
CHROMIUM		0.0034 U						0.0034 U				
COBALT		0.0335						0.0221				
COPPER		0.018 J						0.0027 U				0.17
IRON		0.152						6.53				
LEAD		0.0069 U						0.0069 U				0.015
MAGNESIUM		4.2						2.42				
MANGANESE		0.423						0.316				
MERCURY		0.00005 U						0.00005 U				
NICKEL		0.0295						0.055				
POTASSIUM		3.27						2.12				
SELENIUM		0.0089 U						0.0089 U				
SILVER		0.0023 U						0.0023 U				
SODIUM		20.1						20.5				
THALLIUM		0.014 U						0.014 U				

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Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-1S DW-1S-092211 9/22/2011	DW-5D DW-5D-032311 3/23/2011	DW-5D DW-5D-090805 9/8/2005	DW-5D DW-5D-092111 9/21/2011	DW-5D DW-5D-121505 12/15/2005	DW-5S DW-5S-030103 3/1/2003	DW-5S DW-5S-031308 3/13/2008	DW-5S DW-5S-032311 3/23/2011	DW-5S DW-5S-090805 9/8/2005	DW-5S DW-5S-092111 9/21/2011	DW-5S DW-5S-121505 12/15/2005	DW-7D DW-7D-031501 3/15/2001
VANADIUM		0.0025 U						0.0728				
ZINC		0.197						4.31				0.39
Metals, Filtered (mg/L)												
ALUMINUM		5.9						4.15				
ANTIMONY		0.01 U						0.01 U				
ARSENIC		0.0098 U						0.0098 U				
BARIUM		0.0465						0.0985				
BERYLLIUM		0.0027						0.0021				
CADMIUM		0.002 U						0.0058				
CALCIUM		10.6						9.99				
CHROMIUM		0.0034 U						0.0034 U				
COBALT		0.0357						0.0221				
COPPER		0.0247 J						0.0052				
IRON		0.175						0.952				
LEAD		0.0069 U						0.0069 U				
MAGNESIUM		4.32						2.36				
MANGANESE		0.444						0.305				
MERCURY		0.00005 U						0.00005 U				
NICKEL		0.0305						0.0547				
POTASSIUM		3.34						1.98				
SELENIUM		0.0089 U						0.0089 U				
SILVER		0.0023 U						0.0023 U				
SODIUM		21						20.5				
THALLIUM		0.014 U						0.014 U				
VANADIUM		0.0025 U						0.0025 U				
ZINC		0.22						4.46				
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon							21.9					
CHEMICAL OXYGEN DEMAND												
CHLORIDE							30					
FERROUS IRON							7.1					
FREE CARBON DIOXIDE							0.46 U					
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1							0.46 U					
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1							0.46 U					
Nitrate (as N), Nitrogen, Nitrite							0.015 U					
Nitrate, Nitrogen NO2, NO3							0.04 U					
PH							4.3					
SULFATE							68.3					
Sulfide							0.53 U					
TOTAL DISSOLVED SOLIDS							154					
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON							1.6					
TOTAL SUSPENDED SOLIDS							5.2					

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-1S DW-1S-092211 9/22/2011	DW-5D DW-5D-032311 3/23/2011	DW-5D DW-5D-090805 9/8/2005	DW-5D DW-5D-092111 9/21/2011	DW-5D DW-5D-121505 12/15/2005	DW-5S DW-5S-030103 3/1/2003	DW-5S DW-5S-031308 3/13/2008	DW-5S DW-5S-032311 3/23/2011	DW-5S DW-5S-090805 9/8/2005	DW-5S DW-5S-092111 9/21/2011	DW-5S DW-5S-121505 12/15/2005	DW-7D DW-7D-031501 3/15/2001
Field Parameters (mg/L)												
CONDUCTIVITY					280						178	
DISSOLVED OXYGEN			2.8						2.83			
PH					3.92							
TEMPERATURE					11						11	
Dissolved Gases (mg/L)												
ETHANE							0.001 U					
ETHYLENE							0.001 U					
ETHYLENIMINE												
METHANE							0.048					
PROPANE							0.001 U					

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-7D DW-7D-031805 3/18/2005	DW-7D DW-7D-072412 7/24/2012	DW-7S DW-7S-031805 3/18/2005	EPA-1 EPA-1-031208 3/12/2008	EPA-1 EPA-1-031503 3/15/2003	EPA-1 EPA-1-032311 3/23/2011	EPA-1 EPA-1-072312 7/23/2012	EPA-1 EPA-1-090805 9/8/2005	EPA-1 EPA-1-121505 12/15/2005	EPA-5 EPA-5-031208 3/12/2008	EPA-5 EPA-5-031503 3/15/2003	EPA-5 EPA-5-032311 3/23/2011
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE	0.0001 U		0.0001 U			0.0001 U						0.0001 U
1,1,1-TRICHLOROETHANE		0.0001 U	0.0001 U				0.0001 U					
1,1,2,2-TETRACHLOROETHANE		0.0005	0.0001 U				0.0002					
1,1,2-TRICHLOROETHANE		0.0001 U	0.0001 U				0.0001 U					
1,1-DICHLOROETHANE		0.0001	0.0001 U				0.0001 U					
1,1-DICHLOROETHYLENE		0.0012	0.0001 U				0.0001 U					
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE		0.0004					0.0001 U					
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE		0.0002	0.0001 U				0.0009					
1,2-DIBROMO-3-CHLOROPROPANE						0.0002 U						0.0002 U
1,2-DIBROMOETHANE						0.0001 U						0.0001 U
1,2-DICHLOROBENZENE		0.0001	0.0001 U				0.0006					
1,2-DICHLOROETHANE		0.0001 U	0.0001 U				0.0012					
1,2-DICHLOROETHYLENE					0.0006						0.0008	
1,2-DICHLOROPROPANE		0.0001 U	0.0001 U				0.0001 U					
1,2-TRANS-DICHLOROETHYLENE		0.0001 U	0.0001 U				0.0003 J					
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE		0.0001 U	0.0001 U				0.0001 U					
1,3-DICHLOROBENZENE		0.0001 U	0.0001 U				0.0004					
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE		0.0001 U	0.0001 U				0.0001 U					
1,4-DICHLOROBENZENE		0.0001	0.0001 U				0.0025					
1,4-DIOXANE		0.02 U					0.02 U					
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE		0.003 U	0.003 U				0.003 U					
ACETONITRILE												
ACROLEIN		0.004 U					0.004 U					
ACRYLONITRILE		0.001 U	0.002 U				0.001 U					
BENZENE		0.0009	0.0001 U				0.0023					
BROMOBENZENE												
BROMOCHLOROMETHANE	0.0001 U		0.0001 U			0.0001 U						0.0001 U
BROMOFORM		0.0001 U	0.0001 U				0.0001 U					
CARBON DISULFIDE		0.0004 U					0.0004 U					
CARBON TETRACHLORIDE		0.0001 U	0.0001 U				0.0001 U					
CHLOROBENZENE		0.0001	0.0001 U				0.0099					
CHLORODIBROMOMETHANE		0.0001 U	0.0001 U				0.0001 U					
CHLOROETHANE		0.0001 U	0.0002 U				0.0001 U					
CHLOROFORM		0.0001	0.0001 U				0.0001 U					
DICHLOROBROMOMETHANE		0.0001 U	0.0001 U				0.0001 U					

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Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-7D DW-7D-031805 3/18/2005	DW-7D DW-7D-072412 7/24/2012	DW-7S DW-7S-031805 3/18/2005	EPA-1 EPA-1-031208 3/12/2008	EPA-1 EPA-1-031503 3/15/2003	EPA-1 EPA-1-032311 3/23/2011	EPA-1 EPA-1-072312 7/23/2012	EPA-1 EPA-1-090805 9/8/2005	EPA-1 EPA-1-121505 12/15/2005	EPA-5 EPA-5-031208 3/12/2008	EPA-5 EPA-5-031503 3/15/2003	EPA-5 EPA-5-032311 3/23/2011
DICHLORODIFLUOROMETHANE		0.0001 U					0.0001 U					
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE		0.0001 U	0.0001 U				0.0001 U					
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE						0.0002 U						0.0002 U
METHACRYLONITRILE												
METHYL ACETATE		0.0003 U					0.0003 U					
METHYL ACRYLATE												
METHYL BROMIDE		0.0001 U	0.0001 U				0.0001 U					
METHYL CHLORIDE		0.0002 U	0.0002 U				0.0002 U					
METHYL ETHYL KETONE		0.001 U					0.001 U					
METHYL IODIDE												
METHYL ISOBUTYL KETONE		0.001 U					0.001 U					
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE		0.0002 U	0.0003 U				0.0002 U					
METHYL-T-BUTYL ETHER		0.0059					0.021					
NAPHTHALENE		0.0001 U					0.0001 U					
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE	0.0001 U		0.0001 U			0.0001 U						0.0001 U
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE		0.0001 U					0.0001 U					
t-Butyl Alcohol		0.02					0.017					
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE		0.0001 U	0.0001 U				0.0001 U					
TETRAHYDROFURAN												
TOLUENE		0.0001 U	0.0001 U				0.0001 U					
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE		0.0008	0.0001 U				0.0002					
TRICHLOROFLUOROMETHANE		0.0001 U					0.0001 U					
TVOC												
VINYL CHLORIDE		0.0012	0.0001 U				0.0002					
XYLENES,TOTAL		0.0001 U	0.0002 U				0.0001 U					
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE							0.0005 U					
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE							0.002					
2,3,4,6-Tetrachlorophenol							0.0005 U					

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-7D DW-7D-031805 3/18/2005	DW-7D DW-7D-072412 7/24/2012	DW-7S DW-7S-031805 3/18/2005	EPA-1 EPA-1-031208 3/12/2008	EPA-1 EPA-1-031503 3/15/2003	EPA-1 EPA-1-032311 3/23/2011	EPA-1 EPA-1-072312 7/23/2012	EPA-1 EPA-1-090805 9/8/2005	EPA-1 EPA-1-121505 12/15/2005	EPA-5 EPA-5-031208 3/12/2008	EPA-5 EPA-5-031503 3/15/2003	EPA-5 EPA-5-032311 3/23/2011
2,4,5-TRICHLOROPHENOL							0.0005 U					
2,4,6-TRICHLOROPHENOL							0.0005 U					
2,4-DICHLOROPHENOL							0.0005 U					
2,4-DIMETHYLPHENOL							0.0005 U					
2,4-DINITROPHENOL							0.009 U					
2,4-DINITROTOLUENE							0.0009 U					
2,6-DINITROTOLUENE							0.0005 U					
2-CHLORONAPHTHALENE							0.0004 U					
2-CHLOROPHENOL							0.0005 U					
2-METHYL-4,6-DINITROPHENOL							0.005 U					
2-METHYLNAPHTHALENE							0.00009 U					
2-NITROANILINE							0.0005 U					
2-NITROPHENOL							0.0005 U					
3,3-DICHLOROBENZIDINE							0.002 U					
3-NITROANILINE							0.0005 U					
4-BROMOPHENYL PHENYL ETHER							0.0005 U					
4-CHLORO-3-METHYLPHENOL							0.0005 U					
4-CHLOROANILINE							0.0005 U					
4-CHLOROPHENYL PHENYL ETHER							0.0005 U					
4-NITROANILINE							0.0005 U					
4-NITROPHENOL							0.009 U					
ACENAPHTHENE							0.00009 U					
ACENAPHTHYLENE							0.00009 U					
ACETOPHENONE							0.0005 U					
ANILINE												
ANTHRACENE							0.00009 U					
ATRAZINE							0.002 U					
AZOBENZENE												
BENZALDEHYDE							0.0009 U					
BENZIDINE							0.019 U					
BENZO(A)ANTHRACENE							0.00009 U					
BENZO(A)PYRENE							0.00009 U					
BENZO(B)FLUORANTHENE							0.00009 U					
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE							0.00009 U					
BENZO(K)FLUORANTHENE							0.00009 U					
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE							0.002 U					
Biphenyl							0.0005 U					
BIS(2-CHLOROETHOXY) METHANE							0.0005 U					
BIS(2-CHLOROETHYL) ETHER							0.0005 U					
Bis(2-chloroisopropyl) ether							0.0005 U					
BIS(2-CHLOROISOPROPYL)ETHER							0.0005 U					
BIS(2-ETHYLHEXYL)PHTHALATE							0.002 U					
CAPROLACTAM							0.005 U					
CARBAZOLE							0.0005 U					
CHRYSENE							0.00009 U					

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-7D DW-7D-031805 3/18/2005	DW-7D DW-7D-072412 7/24/2012	DW-7S DW-7S-031805 3/18/2005	EPA-1 EPA-1-031208 3/12/2008	EPA-1 EPA-1-031503 3/15/2003	EPA-1 EPA-1-032311 3/23/2011	EPA-1 EPA-1-072312 7/23/2012	EPA-1 EPA-1-090805 9/8/2005	EPA-1 EPA-1-121505 12/15/2005	EPA-5 EPA-5-031208 3/12/2008	EPA-5 EPA-5-031503 3/15/2003	EPA-5 EPA-5-032311 3/23/2011
CRESOL,O							0.0005 U					
CRESOL,P							0.0005 U					
DIBENZO(A,H)ANTHRACENE							0.00009 U					
DIBENZOFURAN							0.0005 U					
DIETHYL PHTHALATE							0.002 U					
DIMETHYL PHTHALATE							0.002 U					
DI-N-BUTYL PHTHALATE							0.002 U					
DI-N-OCTYL PHTHALATE							0.002 U					
FLUORANTHENE							0.00009 U					
FLUORENE							0.00009 U					
HEXACHLOROBENZENE							0.00009 U					
HEXACHLOROBUTADIENE							0.0005 U					
HEXACHLOROCYCLOPENTADIENE							0.005 U					
HEXACHLOROETHANE							0.0009 U					
INDENO(1,2,3-CD)PYRENE							0.00009 U					
ISOPHORONE							0.0005 U					
NAPHTHALENE							0.00009 U					
NITROBENZENE							0.0005 U					
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE							0.0005 U					
N-NITROSODIPHENYLAMINE							0.0005 U					
PENTACHLOROPHENOL							0.0009 U					
PHENANTHRENE							0.00009 U					
PHENOL							0.0005 U					
PYRENE							0.00009 U					
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM						4.84						1.1
ANTIMONY						0.01 U						0.01 U
ARSENIC						0.0098 U						0.0098 U
BARIUM						0.055						0.0311
BERYLLIUM						0.0017						0.002
CADMIUM						0.002 U						0.002 U
CALCIUM						6.39						8.14
CHROMIUM						0.0034 U						0.0034 U
COBALT						0.0249						0.0268
COPPER						0.0027 U						0.0027 U
IRON						1.91						17
LEAD						0.0069 U						0.0069 U
MAGNESIUM						2.97						3.54
MANGANESE						0.286						0.38
MERCURY						0.00005 U						0.00005 U
NICKEL						0.033						0.028
POTASSIUM						2.1						3.06
SELENIUM						0.0089 U						0.0089 U
SILVER						0.0023 U						0.0023 U
SODIUM						15.4						18.6
THALLIUM						0.014 U						0.014 U

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-7D DW-7D-031805 3/18/2005	DW-7D DW-7D-072412 7/24/2012	DW-7S DW-7S-031805 3/18/2005	EPA-1 EPA-1-031208 3/12/2008	EPA-1 EPA-1-031503 3/15/2003	EPA-1 EPA-1-032311 3/23/2011	EPA-1 EPA-1-072312 7/23/2012	EPA-1 EPA-1-090805 9/8/2005	EPA-1 EPA-1-121505 12/15/2005	EPA-5 EPA-5-031208 3/12/2008	EPA-5 EPA-5-031503 3/15/2003	EPA-5 EPA-5-032311 3/23/2011
VANADIUM						0.0055						0.0034
ZINC						0.284						0.394
Metals, Filtered (mg/L)												
ALUMINUM						5.05						1.08
ANTIMONY						0.01 U						0.01 U
ARSENIC						0.0098 U						0.0098 U
BARIUM						0.0572						0.0286
BERYLLIUM						0.0017						0.0014 U
CADMIUM						0.002 U						0.002 U
CALCIUM						6.26						7.62
CHROMIUM						0.0034 U						0.0034 U
COBALT						0.0253						0.0268
COPPER						0.006						0.0082
IRON						2						16.2
LEAD						0.0069 U						0.0069 U
MAGNESIUM						2.98						3.36
MANGANESE						0.288						0.367
MERCURY						0.00005 U						0.00005 U
NICKEL						0.0322						0.0271
POTASSIUM						2.06						2.62
SELENIUM						0.0089 U						0.0089 U
SILVER						0.0023 U						0.0023 U
SODIUM						15.5						18
THALLIUM						0.014 U						0.014 U
VANADIUM						0.0052						0.0025 U
ZINC						0.302						0.399
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon				18.2						23.2		
CHEMICAL OXYGEN DEMAND												
CHLORIDE				28.3						38.3		
FERROUS IRON				16.3						20		
FREE CARBON DIOXIDE				0.46 U						0.46 U		
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1				0.46 U						0.46 U		
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1				0.46 U						0.46 U		
Nitrate (as N), Nitrogen, Nitrite				0.035						0.039		
Nitrate, Nitrogen NO2, NO3				0.04 U						0.04 U		
PH				4.3						4.1		
SULFATE				68.3						75.9		
Sulfide				0.53 U						0.53 U		
TOTAL DISSOLVED SOLIDS				141						164		
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON				1 U						1 U		
TOTAL SUSPENDED SOLIDS				3 U						3 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	DW-7D DW-7D-031805 3/18/2005	DW-7D DW-7D-072412 7/24/2012	DW-7S DW-7S-031805 3/18/2005	EPA-1 EPA-1-031208 3/12/2008	EPA-1 EPA-1-031503 3/15/2003	EPA-1 EPA-1-032311 3/23/2011	EPA-1 EPA-1-072312 7/23/2012	EPA-1 EPA-1-090805 9/8/2005	EPA-1 EPA-1-121505 12/15/2005	EPA-5 EPA-5-031208 3/12/2008	EPA-5 EPA-5-031503 3/15/2003	EPA-5 EPA-5-032311 3/23/2011
Field Parameters (mg/L)												
CONDUCTIVITY	292		84						266			
DISSOLVED OXYGEN	3.78		4.42					3.5				
PH	4.09		4.15									
TEMPERATURE	12		10						10			
Dissolved Gases (mg/L)												
ETHANE				0.001 U						0.001 U		
ETHYLENE				0.001 U						0.001 U		
ETHYLENIMINE												
METHANE				0.026						0.043		
PROPANE				0.001 U						0.001 U		

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	EPA-5 EPA-5-072312 7/23/2012	EPA-5 EPA-5-090805 9/8/2005	EPA-5 EPA-5-121505 12/15/2005	MI-07 MI-07-032411 3/24/2011	MI-07 MI-07-121605 12/16/2005	MI-07 MI-7-092311 9/23/2011	MI-08 MI-08-032411 3/24/2011	MI-08 MI-08-072512 7/25/2012	MI-08 MI-08-121605 12/16/2005	MI-09 MI-09-072512 7/25/2012	MI-09 MI-09-121504 12/15/2004	MI-09 MI-9-091508 9/15/2008
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE				0.0001 U			0.0001 U				0.0001 U	
1,1,1-TRICHLOROETHANE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
1,1,2,2-TETRACHLOROETHANE	0.0004					0.0017		0.0013			0.0001 U	
1,1,2-TRICHLOROETHANE	0.0001					0.0001 U		0.0007			0.0001 U	
1,1-DICHLOROETHANE	0.0001					0.0001 U		0.0002			0.0001 U	
1,1-DICHLOROETHYLENE	0.0004					0.0001 U		0.0021			0.002	
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE	0.0008					0.0001 U		0.044				
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE	0.0006					0.0001 U		0.011			0.0001 U	
1,2-DIBROMO-3-CHLOROPROPANE				0.0002 U			0.0002 U					
1,2-DIBROMOETHANE				0.0001 U			0.0001 U					
1,2-DICHLOROBENZENE	0.0016					0.0001 U		0.0063			0.0001 U	
1,2-DICHLOROETHANE	0.0011					0.0001 U		0.006			0.0002	
1,2-DICHLOROETHYLENE												
1,2-DICHLOROPROPANE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
1,2-TRANS-DICHLOROETHYLENE	0.0003					0.0001 U		0.0027			0.0001 U	
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
1,3-DICHLOROBENZENE	0.0009					0.0001 U		0.0009			0.0001 U	
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
1,4-DICHLOROBENZENE	0.0035					0.0001 U		0.0048			0.0001 U	
1,4-DIOXANE	0.02 U					0.02 U		0.02 U				
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE	0.003 U					0.003 U		0.003 U			0.003 U	
ACETONITRILE												
ACROLEIN	0.004 U					0.004 U		0.004 U				
ACRYLONITRILE	0.001 U					0.001 U		0.001 U			0.002 U	
BENZENE	0.0009					0.0001 U		0.012			0.0001 U	
BROMOBENZENE												
BROMOCHLOROMETHANE				0.0001 U			0.0001 U				0.0001 U	
BROMOFORM	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
CARBON DISULFIDE	0.0004 U					0.0004 U		0.0004 U				
CARBON TETRACHLORIDE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
CHLOROBENZENE	0.0089					0.0001 U		0.026			0.0001 U	
CHLORODIBROMOMETHANE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
CHLOROETHANE	0.0001 U					0.0001 U		0.0001 U			0.0002 U	
CHLOROFORM	0.0001 U					0.0001 U		0.0001 U			0.0005	
DICHLOROBROMOMETHANE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	EPA-5 EPA-5-072312 7/23/2012	EPA-5 EPA-5-090805 9/8/2005	EPA-5 EPA-5-121505 12/15/2005	MI-07 MI-07-032411 3/24/2011	MI-07 MI-07-121605 12/16/2005	MI-07 MI-7-092311 9/23/2011	MI-08 MI-08-032411 3/24/2011	MI-08 MI-08-072512 7/25/2012	MI-08 MI-08-121605 12/16/2005	MI-09 MI-09-072512 7/25/2012	MI-09 MI-09-121504 12/15/2004	MI-09 MI-9-091508 9/15/2008
DICHLORODIFLUOROMETHANE	0.0001 U					0.0001 U		0.0001 U				
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE	0.0001 U					0.0001 U		0.0011			0.0001 U	
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE				0.0002 U			0.0041					
METHACRYLONITRILE												
METHYL ACETATE	0.0003 U					0.0003 U		0.0003 U				
METHYL ACRYLATE												
METHYL BROMIDE	0.0001 U					0.0001 U		0.0001 U			0.0001 U	
METHYL CHLORIDE	0.0002 U					0.0002 U		0.0002 U			0.0002 U	
METHYL ETHYL KETONE	0.001 U					0.001 U		0.001 U				
METHYL IODIDE												
METHYL ISOBUTYL KETONE	0.001 U					0.001 U		0.001 U				
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE	0.0002 U					0.0002 U		0.0002 U			0.0003 U	
METHYL-T-BUTYL ETHER	0.017					0.0099		0.0002				
NAPHTHALENE	0.0001 U					0.0001 U		0.0011				
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE				0.0001 U			0.0029				0.0001 U	
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE	0.0001 U					0.0001 U		0.0001 U				
t-Butyl Alcohol	0.004 U					0.004 U		0.004 U				
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE	0.0001					0.0001 U		0.0001			0.0001 U	
TETRAHYDROFURAN												
TOLUENE	0.0001 U					0.0001 U		0.0002			0.0001 U	
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE	0.0006					0.0001 U		0.0026			0.0005	
TRICHLOROFLUOROMETHANE	0.0001 U					0.0001 U		0.0001 U				
TVOC												
VINYL CHLORIDE	0.0003					0.00008 U		0.0024			0.0001 U	
XYLENES,TOTAL	0.0001 U					0.0001 U		0.0017			0.0002 U	
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE										0.0005 U		
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE										0.0009 U		
2,3,4,6-Tetrachlorophenol										0.0005 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	EPA-5 EPA-5-072312 7/23/2012	EPA-5 EPA-5-090805 9/8/2005	EPA-5 EPA-5-121505 12/15/2005	MI-07 MI-07-032411 3/24/2011	MI-07 MI-07-121605 12/16/2005	MI-07 MI-7-092311 9/23/2011	MI-08 MI-08-032411 3/24/2011	MI-08 MI-08-072512 7/25/2012	MI-08 MI-08-121605 12/16/2005	MI-09 MI-09-072512 7/25/2012	MI-09 MI-09-121504 12/15/2004	MI-09 MI-9-091508 9/15/2008
2,4,5-TRICHLOROPHENOL										0.0005 U		
2,4,6-TRICHLOROPHENOL										0.0005 U		
2,4-DICHLOROPHENOL										0.0005 U		
2,4-DIMETHYLPHENOL										0.0005 U		
2,4-DINITROPHENOL										0.009 U		
2,4-DINITROTOLUENE										0.0009 U		
2,6-DINITROTOLUENE										0.0005 U		
2-CHLORONAPHTHALENE										0.0004 U		
2-CHLOROPHENOL										0.0005 U		
2-METHYL-4,6-DINITROPHENOL										0.005 U		
2-METHYLNAPHTHALENE										0.00009 U		
2-NITROANILINE										0.0005 U		
2-NITROPHENOL										0.0005 U		
3,3-DICHLOROBENZIDINE										0.002 U		
3-NITROANILINE										0.0005 U		
4-BROMOPHENYL PHENYL ETHER										0.0005 U		
4-CHLORO-3-METHYLPHENOL										0.0005 U		
4-CHLOROANILINE										0.0005 U		
4-CHLOROPHENYL PHENYL ETHER										0.0005 U		
4-NITROANILINE										0.0005 U		
4-NITROPHENOL										0.009 U		
ACENAPHTHENE										0.00009 U		
ACENAPHTHYLENE										0.00009 U		
ACETOPHENONE										0.0005 U		
ANILINE												
ANTHRACENE										0.00009 U		
ATRAZINE										0.002 U		
AZOBENZENE												
BENZALDEHYDE										0.0009 U		
BENZIDINE										0.019 U		
BENZO(A)ANTHRACENE										0.00009 U		
BENZO(A)PYRENE										0.00009 U		
BENZO(B)FLUORANTHENE										0.00009 U		
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE										0.00009 U		
BENZO(K)FLUORANTHENE										0.00009 U		
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE										0.002 U		
Biphenyl										0.0005 U		
BIS(2-CHLOROETHOXY) METHANE										0.0005 U		
BIS(2-CHLOROETHYL) ETHER										0.0005 U		
Bis(2-chloroisopropyl) ether										0.0005 U		
BIS(2-CHLOROISOPROPYL)ETHER										0.0005 U		
BIS(2-ETHYLHEXYL)PHTHALATE										0.002 U		
CAPROLACTAM										0.005 U		
CARBAZOLE										0.0005 U		
CHRYSENE										0.00009 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	EPA-5 EPA-5-072312 7/23/2012	EPA-5 EPA-5-090805 9/8/2005	EPA-5 EPA-5-121505 12/15/2005	MI-07 MI-07-032411 3/24/2011	MI-07 MI-07-121605 12/16/2005	MI-07 MI-7-092311 9/23/2011	MI-08 MI-08-032411 3/24/2011	MI-08 MI-08-072512 7/25/2012	MI-08 MI-08-121605 12/16/2005	MI-09 MI-09-072512 7/25/2012	MI-09 MI-09-121504 12/15/2004	MI-09 MI-9-091508 9/15/2008
CRESOL,O										0.0005 U		
CRESOL,P										0.0005 U		
DIBENZO(A,H)ANTHRACENE										0.00009 U		
DIBENZOFURAN										0.0005 U		
DIETHYL PHTHALATE										0.002 U		
DIMETHYL PHTHALATE										0.002 U		
DI-N-BUTYL PHTHALATE										0.002 U		
DI-N-OCTYL PHTHALATE										0.002 U		
FLUORANTHENE										0.00009 U		
FLUORENE										0.00009 U		
HEXACHLOROBENZENE										0.00009 U		
HEXACHLOROBUTADIENE										0.0005 U		
HEXACHLOROCYCLOPENTADIENE										0.005 U		
HEXACHLOROETHANE										0.0009 U		
INDENO(1,2,3-CD)PYRENE										0.00009 U		
ISOPHORONE										0.0005 U		
NAPHTHALENE										0.00009 U		
NITROBENZENE										0.0005 U		
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE										0.0005 U		
N-NITROSODIPHENYLAMINE										0.0005 U		
PENTACHLOROPHENOL										0.0009 U		
PHENANTHRENE										0.00009 U		
PHENOL										0.0005 U		
PYRENE										0.00009 U		
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM				5.69			9.39					
ANTIMONY				0.01 U			0.01 U					
ARSENIC				0.0098 U			0.0099					
BARIUM				0.0477			0.0339					
BERYLLIUM				0.0019			0.0069					
CADMIUM				0.002 U			0.0526					0.0047
CALCIUM				9.84			16.8					
CHROMIUM				0.0034 U			0.008					
COBALT				0.0245			0.0361					
COPPER				0.0449			95.2					2.94
IRON				3.26			13.2					
LEAD				0.0069 U			0.0428					0.313
MAGNESIUM				3.17			4.22					
MANGANESE				0.378			0.549					
MERCURY				0.00005 U			0.00005 U					
NICKEL				0.0344			0.548					
POTASSIUM				3.03			3.13					
SELENIUM				0.0089 U			0.0089 U					
SILVER				0.0023 U			0.0023 U					
SODIUM				34.5			33					
THALLIUM				0.014 U			0.014 U					

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	EPA-5 EPA-5-072312 7/23/2012	EPA-5 EPA-5-090805 9/8/2005	EPA-5 EPA-5-121505 12/15/2005	MI-07 MI-07-032411 3/24/2011	MI-07 MI-07-121605 12/16/2005	MI-07 MI-7-092311 9/23/2011	MI-08 MI-08-032411 3/24/2011	MI-08 MI-08-072512 7/25/2012	MI-08 MI-08-121605 12/16/2005	MI-09 MI-09-072512 7/25/2012	MI-09 MI-09-121504 12/15/2004	MI-09 MI-9-091508 9/15/2008
VANADIUM				0.0025 U			0.111					
ZINC				0.511			14.5					0.476
Metals, Filtered (mg/L)												
ALUMINUM				5.45			9.38					
ANTIMONY				0.01 U			0.01 U					
ARSENIC				0.0098 U			0.0103					
BARIUM				0.0476			0.0337					
BERYLLIUM				0.0018			0.0069					
CADMIUM				0.002 U			0.0522					
CALCIUM				9.77			16.6					
CHROMIUM				0.0034 U			0.008					
COBALT				0.0247			0.0362					
COPPER				0.0207			94.9					
IRON				0.344			12.9					
LEAD				0.0069 U			0.0425					
MAGNESIUM				3.11			4.15					
MANGANESE				0.375			0.546					
MERCURY				0.00005 U			0.00005 U					
NICKEL				0.0341			0.548					
POTASSIUM				3			3.15					
SELENIUM				0.0089 U			0.0089 U					
SILVER				0.0023 U			0.0023 U					
SODIUM				33.8			33.2					
THALLIUM				0.014 U			0.014 U					
VANADIUM				0.0025 U			0.1					
ZINC				0.511			14.3					
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon												
CHEMICAL OXYGEN DEMAND												
CHLORIDE												
FERROUS IRON												
FREE CARBON DIOXIDE												
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1												
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1												
Nitrate (as N), Nitrogen, Nitrite												
Nitrate, Nitrogen NO2, NO3												
PH												
SULFATE												
Sulfide												
TOTAL DISSOLVED SOLIDS												
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON												
TOTAL SUSPENDED SOLIDS												

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	EPA-5 EPA-5-072312 7/23/2012	EPA-5 EPA-5-090805 9/8/2005	EPA-5 EPA-5-121505 12/15/2005	MI-07 MI-07-032411 3/24/2011	MI-07 MI-07-121605 12/16/2005	MI-07 MI-7-092311 9/23/2011	MI-08 MI-08-032411 3/24/2011	MI-08 MI-08-072512 7/25/2012	MI-08 MI-08-121605 12/16/2005	MI-09 MI-09-072512 7/25/2012	MI-09 MI-09-121504 12/15/2004	MI-09 MI-9-091508 9/15/2008
Field Parameters (mg/L)												
CONDUCTIVITY			294		428				685			
DISSOLVED OXYGEN		3.91			1.67				1.36			
PH					5.4				4.71			
TEMPERATURE			1		13				13			
Dissolved Gases (mg/L)												
ETHANE												
ETHYLENE												
ETHYLENIMINE												
METHANE												
PROPANE												

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	MI-09 MI-9-091805 9/18/2005	PA-B PA-B-030103 3/1/2003	PA-B PA-B-031308 3/13/2008	PA-B PA-B-032411 3/24/2011	PA-B PA-B-072512 7/25/2012	PA-B PA-B-090805 9/8/2005	PA-B PA-B-121505 12/15/2005	TP-1 TP1-15-041906 4/19/2006 14-16 ft	TP-1 TP1-25-041906 4/19/2006 24-26 ft	TP-2 TP2-20-042006 4/20/2006 19-21 ft	TP-2 TP2-30-042006 4/20/2006 29-31 ft	TP-3 TP3-15-042006 4/20/2006 14-16 ft
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE				0.0001 U				0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
1,1,1-TRICHLOROETHANE					0.0001 U			0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U
1,1,2,2-TETRACHLOROETHANE					0.0001 U			0.00092 U	0.00092 U	0.00092 U	0.00407	0.00092 U
1,1,2-TRICHLOROETHANE					0.0002			0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U
1,1-DICHLOROETHANE					0.0002			0.00025 U	0.00025 U	0.00025 U	0.00025 U	0.00025 U
1,1-DICHLOROETHYLENE					0.0016			0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U
1,1-DICHLOROPROPYLENE								0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U
1,2,3-TRICHLOROBENZENE								0.00043 U	0.00295	0.00043 U	0.05207	0.00043 U
1,2,3-TRICHLOROPROPANE								0.00101 U	0.00101 U	0.00101 U	0.00101 U	0.00101 U
1,2,4-TRICHLOROBENZENE					0.0084			0.00057 U	0.00084	0.00057 U	0.2154	0.00083
1,2,4-TRIMETHYLBENZENE								0.00813	0.00601	0.02402	0.00142	0.00028 J
1,2-CIS-DICHLOROETHYLENE					0.0052			0.00074 U	0.01052	0.00047 J	0.00529	0.00074 U
1,2-DIBROMO-3-CHLOROPROPANE				0.0002 U				0.00265 U	0.00265 U	0.00265 U	0.00265 U	0.00265 U
1,2-DIBROMOETHANE				0.0001 U				0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U
1,2-DICHLOROBENZENE					0.014			0.03352	1.2401	0.00183	0.9763	0.00049
1,2-DICHLOROETHANE					0.0051			0.00056 U	0.02238	0.00293	0.06312	0.00056 U
1,2-DICHLOROETHYLENE		0.0002										
1,2-DICHLOROPROPANE					0.0001 U			0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U
1,2-TRANS-DICHLOROETHYLENE					0.0008			0.00082 U	0.00639	0.00082 U	0.00082 U	0.00082 U
1,3,5-TRIMETHYLBENZENE								0.00214	0.0015	0.00648	0.00026 J	0.00049 U
1,3-CIS-DICHLOROPROPYLENE					0.0001 U			0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U
1,3-DICHLOROBENZENE					0.0025			0.01387	0.2369	0.00692	0.0298	0.00083
1,3-DICHLOROPROPANE								0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U
1,3-TRANS-DICHLOROPROPYLENE					0.0001 U			0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
1,4-DICHLOROBENZENE					0.0071			0.04007	0.8657	0.01721	0.1015	0.00346
1,4-DIOXANE					0.02 U							
1-CHLOROBUTANE								0.04289	0.01807	0.02757	0.00058 U	0.00058 U
2,2-DICHLOROPROPANE								0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE								0.00596	0.1422	0.09417	0.00536	0.00061 U
2-HEXANONE								0.00062 U	0.00062 U	0.00188	0.00062 U	0.00062 U
3-CHLOROPROPENE								0.00148 U	0.00148 U	0.00148 U	0.00148 U	0.00148 U
ACETONE					0.003 U			0.00397 U	0.00397 U	0.01101	0.00397 U	0.00397 U
ACETONITRILE												
ACROLEIN					0.004 U							
ACRYLONITRILE					0.001 U			0.00175 U	0.00175 U	0.00175 U	0.00175 U	0.00175 U
BENZENE					0.0053			0.04064	0.04832	0.1304	0.00325	0.00229
BROMOBENZENE								0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U
BROMOCHLOROMETHANE				0.0001 U				0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U
BROMOFORM					0.0001 U			0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U
CARBON DISULFIDE					0.0004 U			0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U
CARBON TETRACHLORIDE					0.0001 U			0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U
CHLOROBENZENE					0.029			0.3895	1.8043	0.9374	0.07369	0.01269
CHLORODIBROMOMETHANE					0.0001 U			0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U
CHLOROETHANE					0.0002			0.00103 U	0.00103 U	0.00103 U	0.00103 U	0.00103 U
CHLOROFORM					0.0001			0.0004 U	0.0004 U	0.0004 U	0.00166	0.0004 U
DICHLOROBROMOMETHANE					0.0001 U			0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	MI-09 MI-9-091805 9/18/2005	PA-B PA-B-030103 3/1/2003	PA-B PA-B-031308 3/13/2008	PA-B PA-B-032411 3/24/2011	PA-B PA-B-072512 7/25/2012	PA-B PA-B-090805 9/8/2005	PA-B PA-B-121505 12/15/2005	TP-1 TP1-15-041906 4/19/2006 14-16 ft	TP-1 TP1-25-041906 4/19/2006 24-26 ft	TP-2 TP2-20-042006 4/20/2006 19-21 ft	TP-2 TP2-30-042006 4/20/2006 29-31 ft	TP-3 TP3-15-042006 4/20/2006 14-16 ft
DICHLORODIFLUOROMETHANE					0.0001 U			0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U
DIETHYL ETHER								0.00087 U	0.00087 U	0.00087 U	0.00781	0.00087 U
ETHYL METHACRYLATE								0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U
ETHYLBENZENE					0.001			0.08604	0.0423	0.0958	0.00465	0.00039 U
HEXACHLOROBUTADIENE								0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
HEXACHLOROETHANE								0.00116 U	0.00116 U	0.00116 U	0.00116 U	0.00116 U
ISOPROPYLBENZENE								0.00809	0.00148	0.00285	0.00031 U	0.00031 U
M+P-XYLENE				0.0002 U								
METHACRYLONITRILE								0.00213 U	0.00213 U	0.00213 U	0.00213 U	0.00213 U
METHYL ACETATE					0.0003 U							
METHYL ACRYLATE								0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U
METHYL BROMIDE					0.0001 U			0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U
METHYL CHLORIDE					0.0002 U			0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U
METHYL ETHYL KETONE					0.001 U			0.00223 U	0.00223 U	0.00319	0.00223 U	0.00223 U
METHYL IODIDE								0.00247 U	0.00247 U	0.00247 U	0.00247 U	0.00247 U
METHYL ISOBUTYL KETONE					0.001 U			0.0007 U	0.0007 U	0.0007 U	0.0007 U	0.0007 U
METHYL METHACRYLATE								0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U
METHYLENE BROMIDE								0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U
METHYLENE CHLORIDE					0.0028			0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U
METHYL-T-BUTYL ETHER					0.0009			0.00047 U	0.01196	0.00172	0.00642	0.00047 U
NAPHTHALENE					0.0005			0.0118	0.00337	0.01762	0.00094 J	0.00097 U
N-BUTYLBENZENE								0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U
N-PROPYLBENZENE								0.00233	0.00035 U	0.00182	0.00035 U	0.00035 U
O-XYLENE				0.0001 U				0.05764	0.03383	0.1803	0.00172	0.00078 U
P-CHLOROTOLUENE								0.00582	0.1418	0.06288	0.00811	0.00056 U
PENTACHLOROETHANE								0.00178 U	0.00178 U	0.00178 U	0.00178 U	0.00178 U
P-ISOPROPYLTOLUENE								0.00033 U	0.00033 U	0.00033 U	0.00033 U	0.00033 U
PROPANENITRILE								0.00541 U	0.00541 U	0.00541 U	0.00541 U	0.00541 U
SEC-BUTYLBENZENE								0.00043 U	0.00043 U	0.00043 U	0.00043 U	0.00043 U
STYRENE					0.0001 U			0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U
t-Butyl Alcohol					0.004 U							
TERT-BUTYLBENZENE								0.00043 U	0.00043 U	0.00043 U	0.00043 U	0.00043 U
TETRACHLOROETHYLENE					0.0001 U			0.00075 U	0.00075 U	0.00075 U	0.00128	0.00075 U
TETRAHYDROFURAN								0.0059 U	0.0059 U	0.00935	0.0059 U	0.0059 U
TOLUENE					0.0007			0.01489	0.01183	0.01955	0.00353	0.00043 U
TRANS-1,4-DICHLORO-2-BUTENE								0.00117 U	0.00117 U	0.00117 U	0.00117 U	0.00117 U
TRICHLOROETHYLENE					0.0011			0.00046 U	0.00046 U	0.00046 U	0.00609	0.00046 U
TRICHLOROFLUOROMETHANE					0.0001 U			0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U
TVOC												
VINYL CHLORIDE					0.0021			0.00143 U	0.02477	0.00143 U	0.00398	0.00143 U
XYLENES,TOTAL					0.0007			0.2408	0.05664	0.486	0.00581	0.00098 U
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE					0.0005 U							
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE					0.004							
2,3,4,6-Tetrachlorophenol					0.0005 U							

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	MI-09 MI-9-091805 9/18/2005	PA-B PA-B-030103 3/1/2003	PA-B PA-B-031308 3/13/2008	PA-B PA-B-032411 3/24/2011	PA-B PA-B-072512 7/25/2012	PA-B PA-B-090805 9/8/2005	PA-B PA-B-121505 12/15/2005	TP-1 TP1-15-041906 4/19/2006 14-16 ft	TP-1 TP1-25-041906 4/19/2006 24-26 ft	TP-2 TP2-20-042006 4/20/2006 19-21 ft	TP-2 TP2-30-042006 4/20/2006 29-31 ft	TP-3 TP3-15-042006 4/20/2006 14-16 ft
2,4,5-TRICHLOROPHENOL					0.0005 U							
2,4,6-TRICHLOROPHENOL					0.0005 U							
2,4-DICHLOROPHENOL					0.0005 U							
2,4-DIMETHYLPHENOL					0.0005 U							
2,4-DINITROPHENOL					0.009 U							
2,4-DINITROTOLUENE					0.0009 U							
2,6-DINITROTOLUENE					0.0005 U							
2-CHLORONAPHTHALENE					0.0004 U							
2-CHLOROPHENOL					0.0005 U							
2-METHYL-4,6-DINITROPHENOL					0.005 U							
2-METHYLNAPHTHALENE					0.00009 U							
2-NITROANILINE					0.0005 U							
2-NITROPHENOL					0.0005 U							
3,3-DICHLOROBENZIDINE					0.002 U							
3-NITROANILINE					0.0005 U							
4-BROMOPHENYL PHENYL ETHER					0.0005 U							
4-CHLORO-3-METHYLPHENOL					0.0005 U							
4-CHLOROANILINE					0.0005 U							
4-CHLOROPHENYL PHENYL ETHER					0.0005 U							
4-NITROANILINE					0.0005 U							
4-NITROPHENOL					0.009 U							
ACENAPHTHENE					0.00009 U							
ACENAPHTHYLENE					0.00009 U							
ACETOPHENONE					0.0005 U							
ANILINE												
ANTHRACENE					0.00009 U							
ATRAZINE					0.002 U							
AZOBENZENE												
BENZALDEHYDE					0.0009 U							
BENZIDINE					0.019 U							
BENZO(A)ANTHRACENE					0.00009 U							
BENZO(A)PYRENE					0.00009 U							
BENZO(B)FLUORANTHENE					0.00009 U							
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE					0.00009 U							
BENZO(K)FLUORANTHENE					0.00009 U							
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE					0.002 U							
Biphenyl					0.0005 U							
BIS(2-CHLOROETHOXY) METHANE					0.0005 U							
BIS(2-CHLOROETHYL) ETHER					0.0005 U							
Bis(2-chloroisopropyl) ether					0.0005 U							
BIS(2-CHLOROISOPROPYL)ETHER					0.0005 U							
BIS(2-ETHYLHEXYL)PHTHALATE					0.002 U							
CAPROLACTAM					0.005 U							
CARBAZOLE					0.0005 U							
CHRYSENE					0.00009 U							

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	MI-09 MI-9-091805 9/18/2005	PA-B PA-B-030103 3/1/2003	PA-B PA-B-031308 3/13/2008	PA-B PA-B-032411 3/24/2011	PA-B PA-B-072512 7/25/2012	PA-B PA-B-090805 9/8/2005	PA-B PA-B-121505 12/15/2005	TP-1 TP1-15-041906 4/19/2006 14-16 ft	TP-1 TP1-25-041906 4/19/2006 24-26 ft	TP-2 TP2-20-042006 4/20/2006 19-21 ft	TP-2 TP2-30-042006 4/20/2006 29-31 ft	TP-3 TP3-15-042006 4/20/2006 14-16 ft
CRESOL,O					0.0005 U							
CRESOL,P					0.0005 U							
DIBENZO(A,H)ANTHRACENE					0.00009 U							
DIBENZOFURAN					0.0005 U							
DIETHYL PHTHALATE					0.002 U							
DIMETHYL PHTHALATE					0.002 U							
DI-N-BUTYL PHTHALATE					0.002 U							
DI-N-OCTYL PHTHALATE					0.002 U							
FLUORANTHENE					0.00009 U							
FLUORENE					0.00009 U							
HEXACHLOROBENZENE					0.00009 U							
HEXACHLOROBUTADIENE					0.0005 U							
HEXACHLOROCYCLOPENTADIENE					0.005 U							
HEXACHLOROETHANE					0.0009 U							
INDENO(1,2,3-CD)PYRENE					0.00009 U							
ISOPHORONE					0.0005 U							
NAPHTHALENE					0.0002							
NITROBENZENE					0.0005 U							
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE					0.0005 U							
N-NITROSODIPHENYLAMINE					0.0005 U							
PENTACHLOROPHENOL					0.0009 U							
PHENANTHRENE					0.00009 U							
PHENOL					0.0005 U							
PYRENE					0.00009 U							
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM				4.77				93.7				46.1
ANTIMONY				0.01 U				0.0064 U				0.0064 U
ARSENIC				0.0098 U				0.138				0.0445
BARIUM				0.0336				0.359				0.27
BERYLLIUM				0.0022				0.0081				0.0062
CADMIUM				0.002 U				0.0315				0.0046
CALCIUM				7.7				61.7				27.8
CHROMIUM				0.0034 U				1.76				0.529
COBALT				0.0704				0.042				0.0111
COPPER				0.015 J				18.2				0.297
IRON				0.425				561				72.5
LEAD				0.0069 U				0.288				0.183
MAGNESIUM				4.34				12				4.38
MANGANESE				0.651				1.8				0.477
MERCURY				0.00005 U				0.01				0.00031 U
NICKEL				0.0284				0.461				0.0734
POTASSIUM				2.07				15.6				7.36
SELENIUM				0.0089 U				0.0278				0.0094 U
SILVER				0.0023 U				0.0026				0.002 U
SODIUM				11.7				142				82.2
THALLIUM				0.014 U				0.0192				0.0104

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	MI-09 MI-9-091805 9/18/2005	PA-B PA-B-030103 3/1/2003	PA-B PA-B-031308 3/13/2008	PA-B PA-B-032411 3/24/2011	PA-B PA-B-072512 7/25/2012	PA-B PA-B-090805 9/8/2005	PA-B PA-B-121505 12/15/2005	TP-1 TP1-15-041906 4/19/2006 14-16 ft	TP-1 TP1-25-041906 4/19/2006 24-26 ft	TP-2 TP2-20-042006 4/20/2006 19-21 ft	TP-2 TP2-30-042006 4/20/2006 29-31 ft	TP-3 TP3-15-042006 4/20/2006 14-16 ft
VANADIUM				0.0134				0.76				0.352
ZINC				0.269				14.7				9.8
Metals, Filtered (mg/L)												
ALUMINUM				4.88								
ANTIMONY				0.01 U								
ARSENIC				0.0098 U								
BARIUM				0.0334								
BERYLLIUM				0.0022								
CADMIUM				0.002 U								
CALCIUM				7.59								
CHROMIUM				0.0034 U								
COBALT				0.0714								
COPPER				0.022 J								
IRON				0.358								
LEAD				0.0069 U								
MAGNESIUM				4.26								
MANGANESE				0.643								
MERCURY				0.00005 U								
NICKEL				0.028								
POTASSIUM				2.01								
SELENIUM				0.0089 U								
SILVER				0.0023 U								
SODIUM				11.7								
THALLIUM				0.014 U								
VANADIUM				0.0059								
ZINC				0.284								
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon			20.8									
CHEMICAL OXYGEN DEMAND												
CHLORIDE			77.8									
FERROUS IRON			5.2									
FREE CARBON DIOXIDE			0.46 U									
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1			0.46 U									
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1			0.46 U									
Nitrate (as N), Nitrogen, Nitrite			0.015 U									
Nitrate, Nitrogen NO2, NO3			0.85									
PH	3.92		4.2									
SULFATE			118									
Sulfide			0.53 U									
TOTAL DISSOLVED SOLIDS			206									
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON			1.2									
TOTAL SUSPENDED SOLIDS			26									

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	MI-09 MI-9-091805 9/18/2005	PA-B PA-B-030103 3/1/2003	PA-B PA-B-031308 3/13/2008	PA-B PA-B-032411 3/24/2011	PA-B PA-B-072512 7/25/2012	PA-B PA-B-090805 9/8/2005	PA-B PA-B-121505 12/15/2005	TP-1 TP1-15-041906 4/19/2006 14-16 ft	TP-1 TP1-25-041906 4/19/2006 24-26 ft	TP-2 TP2-20-042006 4/20/2006 19-21 ft	TP-2 TP2-30-042006 4/20/2006 29-31 ft	TP-3 TP3-15-042006 4/20/2006 14-16 ft
Field Parameters (mg/L)												
CONDUCTIVITY							480					
DISSOLVED OXYGEN						3.66						
PH												
TEMPERATURE							14					
Dissolved Gases (mg/L)												
ETHANE			0.0041									
ETHYLENE			0.001 U									
ETHYLENIMINE												
METHANE			0.17									
PROPANE			0.0011									

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	TP-3 TP3-25-042006 4/20/2006 24-26 ft	TP-4 TP4-20-042006 4/20/2006 19-21 ft	TP-4 TP4-25-042006 4/20/2006 24-26 ft	TP-5 TP5-20-042106 4/21/2006 19-21 ft	TP-5 TP5-30-042106 4/21/2006 29-31 ft	TP-6 TP6-20-042106 4/21/2006 19-21 ft	TP-6 TP6-30-042106 4/21/2006 29-31 ft	WCC-11D WCC-11D-032311 3/23/2011	WCC-11M WCC-11M-032311 3/23/2011	WCC-11VS WCC-11VS-032311 3/23/2011	WCC-12 WCC-12-030103 3/1/2003	WCC-12 WCC-12-031705 3/17/2005
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U					
1,1,1-TRICHLOROETHANE	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.0001 U	0.0001 U	0.0005 U		
1,1,2,2-TETRACHLOROETHANE	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.00092 U	0.0001	0.0001 U	0.0011		
1,1,2-TRICHLOROETHANE	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00076 U	0.00755	0.00076 U	0.0001 U	0.0001 U	0.0005 U		
1,1-DICHLOROETHANE	0.00025 U	0.01101	0.00025 U	0.00025 U	0.00025 U	0.01762	0.00025 U	0.0001 U	0.0001 U	0.0007		
1,1-DICHLOROETHYLENE	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00086 U	0.00543	0.00086 U	0.0011	0.0012	0.0007		
1,1-DICHLOROPROPYLENE	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U	0.0006 U					
1,2,3-TRICHLOROBENZENE	0.00056	0.00043 U	0.00043 U	0.01497	0.333	0.02264	0.40593					
1,2,3-TRICHLOROPROPANE	0.00101 U	0.00101 U	0.00101 U	0.00101 U	0.00101 U	0.00101 U	0.00101 U					
1,2,4-TRICHLOROBENZENE	0.01656	0.00057 U	0.0219	0.05397	1.0609	0.1073	1.9796	0.0001 U	0.0001 U	0.042		
1,2,4-TRIMETHYLBENZENE	0.00038 U	0.0382	0.00064	0.05516	0.0044	0.02591	0.00391					
1,2-CIS-DICHLOROETHYLENE	0.00234	1.1163	0.00146	0.05849	0.00645	0.0978	0.01023	0.0001	0.0001	0.057		
1,2-DIBROMO-3-CHLOROPROPANE	0.00265 U	0.00265 U	0.00265 U	0.00265 U	0.00265 U	0.00265 U	0.00265 U	0.0002 U	0.0002 U	0.001 U		
1,2-DIBROMOETHANE	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.0001 U	0.0001 U	0.0005 U		
1,2-DICHLOROBENZENE	0.0026	0.05312	0.02791	0.3343	0.04588	1.0094	0.5121	0.0001 U	0.0001 U	0.085		
1,2-DICHLOROETHANE	0.00864	0.03242	0.00107	0.00056 U	0.0161	0.1946	0.1077	0.0004	0.0002	0.019		
1,2-DICHLOROETHYLENE											0.0007	
1,2-DICHLOROPROPANE	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.00063 U	0.02048	0.00063 U	0.0001 U	0.0001 U	0.0005 U		
1,2-TRANS-DICHLOROETHYLENE	0.00082 U	0.2703	0.00082 U	0.01639	0.00082 U	0.01979	0.00067 J	0.0001 U	0.0001 U	0.0098		
1,3,5-TRIMETHYLBENZENE	0.00049 U	0.01086	0.00049 U	0.01029	0.00133	0.00615	0.00117					
1,3-CIS-DICHLOROPROPYLENE	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.0001 U	0.0001 U	0.0005 U		
1,3-DICHLOROBENZENE	0.00384	0.01337	0.00678	0.07479	0.0274	0.06255	0.01475	0.0001 U	0.0001 U	0.016		
1,3-DICHLOROPROPANE	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U	0.00057 U					
1,3-TRANS-DICHLOROPROPYLENE	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0001 U	0.0001 U	0.0005 U		
1,4-DICHLOROBENZENE	0.00681	0.04307	0.00647	0.1645	0.1118	0.3403	0.02696	0.0001 U	0.0001 U	0.053		
1,4-DIOXANE								0.02 U	0.02 U	0.1 U		
1-CHLOROBUTANE	0.00058 U	0.196	0.00058 U	0.01748	0.00058 U	0.4451	0.00058 U					
2,2-DICHLOROPROPANE	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U					
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE	0.00039 J	0.1436	0.00195	0.05419	0.04594	0.3955	0.01098					
2-HEXANONE	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U					
3-CHLOROPROPENE	0.00148 U	0.00148 U	0.00148 U	0.00148 U	0.00148 U	0.00148 U	0.00148 U					
ACETONE	0.00186 J	0.5455	0.00397 U	0.01129	0.00213 J	0.1796	0.01356	0.0042	0.005 J	0.015 U		
ACETONITRILE												
ACROLEIN								0.004 U	0.004 U	0.02 U		
ACRYLONITRILE	0.00175 U	0.00175 U	0.00175 U	0.00175 U	0.00175 U	0.00175 U	0.00175 U	0.001 U	0.001 U	0.005 U		
BENZENE	0.00553	2.0598	0.00643	0.1272	0.00043	0.5686	0.00474	0.0002	0.0001 U	0.11		
BROMOBENZENE	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U	0.00082 U					
BROMOCHLOROMETHANE	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U	0.00167 U					
BROMOFORM	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.00047 U	0.0001 U	0.0001 U	0.0005 U		
CARBON DISULFIDE	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.00062 U	0.0004 U	0.0004 U	0.002 U		
CARBON TETRACHLORIDE	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.00052 U	0.0001 U	0.0001 U	0.0005 U		
CHLOROBENZENE	0.0585	3.3221	0.1014	2.5024	0.0024	4.99	0.08008	0.0001 U	0.0001 U	0.48		
CHLORODIBROMOMETHANE	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.00051 U	0.0001 U	0.0001 U	0.0005 U		
CHLOROETHANE	0.00103 U	0.00103 U	0.00103 U	0.00103 U	0.00103 U	0.00103 U	0.00103 U	0.0001 U	0.0001 U	0.0005 U		
CHLOROFORM	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.00114	0.00569	0.0002	0.0004	0.0005 U		
DICHLOROBROMOMETHANE	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.00042 U	0.0001 U	0.0001 U	0.0005 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	TP-3 TP3-25-042006 4/20/2006 24-26 ft	TP-4 TP4-20-042006 4/20/2006 19-21 ft	TP-4 TP4-25-042006 4/20/2006 24-26 ft	TP-5 TP5-20-042106 4/21/2006 19-21 ft	TP-5 TP5-30-042106 4/21/2006 29-31 ft	TP-6 TP6-20-042106 4/21/2006 19-21 ft	TP-6 TP6-30-042106 4/21/2006 29-31 ft	WCC-11D WCC-11D-032311 3/23/2011	WCC-11M WCC-11M-032311 3/23/2011	WCC-11VS WCC-11VS-032311 3/23/2011	WCC-12 WCC-12-030103 3/1/2003	WCC-12 WCC-12-031705 3/17/2005
DICHLORODIFLUOROMETHANE	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.00056 U	0.0001 U	0.0001 U	0.0005 U		
DIETHYL ETHER	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U	0.00087 U					
ETHYL METHACRYLATE	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U	0.00058 U					
ETHYLBENZENE	0.00186	2.0816	0.00137	0.02346	0.0026	0.3813	0.03048	0.0001 U	0.0001 U	0.053		
HEXACHLOROBUTADIENE	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U					
HEXACHLOROETHANE	0.00116 U	0.00116 U	0.00116 U	0.00116 U	0.00116 U	0.00116 U	0.00116 U					
ISOPROPYLBENZENE	0.00031 U	0.02007	0.00031 U	0.00706	0.00067	0.00616	0.00108					
M+P-XYLENE												
METHACRYLONITRILE	0.00213 U	0.00213 U	0.00213 U	0.00213 U	0.00213 U	0.00213 U	0.00213 U					
METHYL ACETATE								0.0003 U	0.0003 U	0.0015 U		
METHYL ACRYLATE	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U	0.00078 U					
METHYL BROMIDE	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.00089 U	0.0001 U	0.0001 U	0.0005 U		
METHYL CHLORIDE	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.00059 U	0.0002 U	0.0002 U	0.001 U		
METHYL ETHYL KETONE	0.00223 U	0.03436	0.00223 U	0.00223 U	0.00223 U	0.00993	0.00223 U	0.001 U	0.001 U	0.005 U		
METHYL IODIDE	0.00247 U	0.00247 U	0.00247 U	0.00247 U	0.00247 U	0.00247 U	0.00247 U					
METHYL ISOBUTYL KETONE	0.0007 U	0.1256	0.0007 U	0.0007 U	0.0007 U	0.04636	0.0007 U	0.001 U	0.001 U	0.005 U		
METHYL METHACRYLATE	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U	0.0009 U					
METHYLENE BROMIDE	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U	0.00071 U					
METHYLENE CHLORIDE	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.00064 J	2.7338	0.01106	0.0002 U	0.0002 U	0.001 U		
METHYL-T-BUTYL ETHER	0.00151	0.00047 U	0.04047	0.00047 U	0.00047 U	0.00047 U	0.022	0.0003	0.0001 U	0.001		
NAPHTHALENE	0.00097 U	0.01429	0.00097 U	0.00987	0.00193	0.00942	0.00264	0.0001 U	0.0001 U	0.002		
N-BUTYLBENZENE	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U					
N-PROPYLBENZENE	0.00035 U	0.0047	0.00035 U	0.00643	0.00086	0.00035 U	0.00035 U					
O-XYLENE	0.00066 J	1.2796	0.00101	0.03877	0.00312	0.4703	0.04986					
P-CHLOROTOLUENE	0.00029 J	0.1602	0.00068	0.07442	0.0201	0.5621	0.0162					
PENTACHLOROETHANE	0.00178 U	0.00178 U	0.00178 U	0.00178 U	0.00178 U	0.00178 U	0.00178 U					
P-ISOPROPYLTOLUENE	0.00033 U	0.00113	0.00033 U	0.00311	0.00123	0.01067	0.00201					
PROPANENITRILE	0.00541 U	0.00541 U	0.00541 U	0.00541 U	0.00541 U	0.00541 U	0.00541 U					
SEC-BUTYLBENZENE	0.00043 U	0.00043 U	0.0039	0.00971	0.00073	0.00043 U	0.00043 U					
STYRENE	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.00055 U	0.0001 U	0.0001 U	0.0005 U		
t-Butyl Alcohol								0.004 U	0.004 U	0.063		
TERT-BUTYLBENZENE	0.00043 U	0.00043 U	0.00043 U	0.00043 U	0.00043 U	0.00043 U	0.00043 U					
TETRACHLOROETHYLENE	0.00075 U	0.00075 U	0.00075 U	0.00075 U	0.00105	0.00236	0.004	0.0001 U	0.0001 U	0.0005 U		
TETRAHYDROFURAN	0.0059 U	0.03397	0.0059 U	0.0059 U	0.0059 U	0.31399	0.0059 U					
TOLUENE	0.00746	11.6274	0.00638	0.4338	0.00127	13.8097	0.2582	0.0001 U	0.0001 U	0.0056		
TRANS-1,4-DICHLORO-2-BUTENE	0.00117 U	0.00117 U	0.00117 U	0.00117 U	0.00117 U	0.00117 U	0.00117 U					
TRICHLOROETHYLENE	0.00085	0.00046 U	0.00046 U	0.00046 U	0.00282	0.00903	0.00959	0.0003	0.0004	0.0044		
TRICHLOROFLUOROMETHANE	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.00053 U	0.0001 U	0.0001 U	0.0005 U		
TVOC												
VINYL CHLORIDE	0.00216	0.3397	0.00143 U	0.00838	0.00143 U	0.09309	0.00143 U	0.0002	0.00008 U	0.0083		
XYLENES,TOTAL	0.00104	3.2943	0.00156	0.09242	0.01257	1.3133	0.1078	0.0001 U	0.0001 U	0.019		
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE												
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE												
2,3,4,6-Tetrachlorophenol												

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	TP-3 TP3-25-042006 4/20/2006 24-26 ft	TP-4 TP4-20-042006 4/20/2006 19-21 ft	TP-4 TP4-25-042006 4/20/2006 24-26 ft	TP-5 TP5-20-042106 4/21/2006 19-21 ft	TP-5 TP5-30-042106 4/21/2006 29-31 ft	TP-6 TP6-20-042106 4/21/2006 19-21 ft	TP-6 TP6-30-042106 4/21/2006 29-31 ft	WCC-11D WCC-11D-032311 3/23/2011	WCC-11M WCC-11M-032311 3/23/2011	WCC-11VS WCC-11VS-032311 3/23/2011	WCC-12 WCC-12-030103 3/1/2003	WCC-12 WCC-12-031705 3/17/2005
2,4,5-TRICHLOROPHENOL												
2,4,6-TRICHLOROPHENOL												
2,4-DICHLOROPHENOL												
2,4-DIMETHYLPHENOL												
2,4-DINITROPHENOL												
2,4-DINITROTOLUENE												
2,6-DINITROTOLUENE												
2-CHLORONAPHTHALENE												
2-CHLOROPHENOL												
2-METHYL-4,6-DINITROPHENOL												
2-METHYLNAPHTHALENE												
2-NITROANILINE												
2-NITROPHENOL												
3,3-DICHLOROBENZIDINE												
3-NITROANILINE												
4-BROMOPHENYL PHENYL ETHER												
4-CHLORO-3-METHYLPHENOL												
4-CHLOROANILINE												
4-CHLOROPHENYL PHENYL ETHER												
4-NITROANILINE												
4-NITROPHENOL												
ACENAPHTHENE												
ACENAPHTHYLENE												
ACETOPHENONE												
ANILINE												
ANTHRACENE												
ATRAZINE												
AZOBENZENE												
BENZALDEHYDE												
BENZIDINE												
BENZO(A)ANTHRACENE												
BENZO(A)PYRENE												
BENZO(B)FLUORANTHENE												
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE												
BENZO(K)FLUORANTHENE												
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE												
Biphenyl												
BIS(2-CHLOROETHOXY) METHANE												
BIS(2-CHLOROETHYL) ETHER												
Bis(2-chloroisopropyl) ether												
BIS(2-CHLOROISOPROPYL)ETHER												
BIS(2-ETHYLHEXYL)PHTHALATE												
CAPROLACTAM												
CARBAZOLE												
CHRYSENE												

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	TP-3 TP3-25-042006 4/20/2006 24-26 ft	TP-4 TP4-20-042006 4/20/2006 19-21 ft	TP-4 TP4-25-042006 4/20/2006 24-26 ft	TP-5 TP5-20-042106 4/21/2006 19-21 ft	TP-5 TP5-30-042106 4/21/2006 29-31 ft	TP-6 TP6-20-042106 4/21/2006 19-21 ft	TP-6 TP6-30-042106 4/21/2006 29-31 ft	WCC-11D WCC-11D-032311 3/23/2011	WCC-11M WCC-11M-032311 3/23/2011	WCC-11VS WCC-11VS-032311 3/23/2011	WCC-12 WCC-12-030103 3/1/2003	WCC-12 WCC-12-031705 3/17/2005
CRESOL,O												
CRESOL,P												
DIBENZO(A,H)ANTHRACENE												
DIBENZOFURAN												
DIETHYL PHTHALATE												
DIMETHYL PHTHALATE												
DI-N-BUTYL PHTHALATE												
DI-N-OCTYL PHTHALATE												
FLUORANTHENE												
FLUORENE												
HEXACHLOROBENZENE												
HEXACHLOROBUTADIENE												
HEXACHLOROCYCLOPENTADIENE												
HEXACHLOROETHANE												
INDENO(1,2,3-CD)PYRENE												
ISOPHORONE												
NAPHTHALENE												
NITROBENZENE												
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE												
N-NITROSODIPHENYLAMINE												
PENTACHLOROPHENOL												
PHENANTHRENE												
PHENOL												
PYRENE												
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM				43.1		189		4.38	4.75	2.56		
ANTIMONY				0.0064 U		0.0064 U		0.01 U	0.01 U	0.01 U		
ARSENIC				0.0219		0.0734		0.0098 U	0.0098 U	0.0098 U		
BARIUM				0.265		1.03		0.0327	0.0302	0.0236		
BERYLLIUM				0.0031		0.0096		0.0025	0.0028	0.0014 U		
CADMIUM				0.009		0.014		0.0046 J	0.002 U	0.0114		
CALCIUM				25.8		173		7.07	7.3	9.61		
CHROMIUM				0.738		2.06		0.0034 U	0.0034 U	0.0034 U		
COBALT				0.0302		0.0369		0.0492	0.0549	0.0156		
COPPER				0.248		0.92				11		
IRON				308		488		1.06	0.0604	4.59		
LEAD				0.162		0.452		0.0069 U	0.0069 U	0.0083		
MAGNESIUM				5.68		16.8		4.03	4.12	2.86		
MANGANESE				0.552		1.91		0.468	0.476	0.293		
MERCURY				0.00031 U		0.00066		0.00005 U	0.00005 U	0.00005 U		
NICKEL				0.208		0.372		0.0319	0.0298	0.0887		
POTASSIUM				11		24.2		1.85	1.79	2.34		
SELENIUM				0.0094 U		0.0138		0.0089 U	0.0089 U	0.0089 U		
SILVER				0.002 U		0.0023		0.0023 U	0.0023 U	0.0023 U		
SODIUM				62.3		45.6		10.1	9.86	101		
THALLIUM				0.01 U		0.0206		0.014 U	0.014 U	0.014 U		

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chemical_name	TP-3 TP3-25-042006 4/20/2006 24-26 ft	TP-4 TP4-20-042006 4/20/2006 19-21 ft	TP-4 TP4-25-042006 4/20/2006 24-26 ft	TP-5 TP5-20-042106 4/21/2006 19-21 ft	TP-5 TP5-30-042106 4/21/2006 29-31 ft	TP-6 TP6-20-042106 4/21/2006 19-21 ft	TP-6 TP6-30-042106 4/21/2006 29-31 ft	WCC-11D WCC-11D-032311 3/23/2011	WCC-11M WCC-11M-032311 3/23/2011	WCC-11VS WCC-11VS-032311 3/23/2011	WCC-12 WCC-12-030103 3/1/2003	WCC-12 WCC-12-031705 3/17/2005
VANADIUM				0.614		2.03		0.0026	0.0025 U	0.01		
ZINC				1.01		2.23		0.155	0.163	3.93		
Metals, Filtered (mg/L)												
ALUMINUM								4.28	4.78	2.51		
ANTIMONY								0.01 U	0.01 U	0.01 U		
ARSENIC								0.0098 U	0.0098 U	0.0098 U		
BARIUM								0.0338	0.0311	0.0244		
BERYLLIUM								0.0025	0.0027	0.0014 U		
CADMIUM								0.0057 J	0.002 U	0.0116		
CALCIUM								7	7.26	9.28		
CHROMIUM								0.0034 U	0.0034 U	0.0034 U		
COBALT								0.0506	0.056	0.0152		
COPPER									0.0982 J	11.3		
IRON								1.04	0.0522 U	4.49		
LEAD								0.0069 U	0.0069 U	0.008		
MAGNESIUM								4.03	4.1	2.75		
MANGANESE								0.473	0.477	0.289		
MERCURY								0.00005 U	0.00005 U	0.00005 U		
NICKEL								0.0344	0.0306	0.091		
POTASSIUM								1.85	1.79	2.28		
SELENIUM								0.0089 U	0.0089 U	0.0089 U		
SILVER								0.0023 U	0.0023 U	0.0023 U		
SODIUM								10	9.59	98.2		
THALLIUM								0.014 U	0.014 U	0.014 U		
VANADIUM								0.0025 U	0.0025 U	0.0075		
ZINC								0.165	0.169	3.97		
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon												
CHEMICAL OXYGEN DEMAND												
CHLORIDE												
FERROUS IRON												
FREE CARBON DIOXIDE												
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1												
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1												
Nitrate (as N), Nitrogen, Nitrite												
Nitrate, Nitrogen NO2, NO3												
PH												
SULFATE												
Sulfide												
TOTAL DISSOLVED SOLIDS												
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON												
TOTAL SUSPENDED SOLIDS												

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Baseline Human Health Risk Assessment
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chemical_name	TP-3 TP3-25-042006 4/20/2006 24-26 ft	TP-4 TP4-20-042006 4/20/2006 19-21 ft	TP-4 TP4-25-042006 4/20/2006 24-26 ft	TP-5 TP5-20-042106 4/21/2006 19-21 ft	TP-5 TP5-30-042106 4/21/2006 29-31 ft	TP-6 TP6-20-042106 4/21/2006 19-21 ft	TP-6 TP6-30-042106 4/21/2006 29-31 ft	WCC-11D WCC-11D-032311 3/23/2011	WCC-11M WCC-11M-032311 3/23/2011	WCC-11VS WCC-11VS-032311 3/23/2011	WCC-12 WCC-12-030103 3/1/2003	WCC-12 WCC-12-031705 3/17/2005
Field Parameters (mg/L)												
CONDUCTIVITY												402
DISSOLVED OXYGEN												4.3
PH												3.77
TEMPERATURE												9
Dissolved Gases (mg/L)												
ETHANE												
ETHYLENE												
ETHYLENIMINE												
METHANE												
PROPANE												

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	WCC-12 WCC-12-032411 3/24/2011	WCC-15M WCC-15M-031501 3/15/2001	WCC-15M WCC-15M-072412 7/24/2012	WCC-15VS WCC-15VS-072412 7/24/2012	WCC-16VS WCC-16VS-030103 3/1/2003	WCC-16VS WCC-16VS-031308 3/13/2008	WCC-16VS WCC-16VS-031605 3/16/2005	WCC-16VS WCC-16VS-032411 3/24/2011	WCC-16VS WCC-16VS-072412 7/24/2012	WCC-16VS WCC-16VS-090705 9/7/2005	WCC-16VS WCC-16VS-121404 12/14/2004	WCC-16VS WCC-16VS-121505 12/15/2005
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE	0.0001 U							0.0001 U				
1,1,1-TRICHLOROETHANE	0.0001 U								0.0001 U			
1,1,2,2-TETRACHLOROETHANE	0.0001								0.0003			
1,1,2-TRICHLOROETHANE	0.0001 U								0.0001 U			
1,1-DICHLOROETHANE	0.0001 U								0.0001 U			
1,1-DICHLOROETHYLENE	0.0001 U								0.0004			
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE	0.0004								0.0028			
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE	0.0002								0.0001			
1,2-DIBROMO-3-CHLOROPROPANE	0.0002 U							0.0002 U				
1,2-DIBROMOETHANE	0.0001 U							0.0001 U				
1,2-DICHLOROBENZENE	0.0002								0.0005			
1,2-DICHLOROETHANE	0.0001 U								0.0006			
1,2-DICHLOROETHYLENE					0.0112							
1,2-DICHLOROPROPANE	0.0001 U								0.0001 U			
1,2-TRANS-DICHLOROETHYLENE	0.0001 U								0.0001 U			
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE	0.0001 U								0.0001 U			
1,3-DICHLOROBENZENE	0.0001 U								0.0006			
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U								0.0001 U			
1,4-DICHLOROBENZENE	0.0002								0.0015			
1,4-DIOXANE	0.02 U								0.02 U			
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE	0.003 U								0.003 U			
ACETONITRILE												
ACROLEIN	0.004 U								0.004 U			
ACRYLONITRILE	0.002 U								0.001 U			
BENZENE	0.0001								0.0007			
BROMOBENZENE												
BROMOCHLOROMETHANE	0.0001 U							0.0001 U				
BROMOFORM	0.0002 U								0.0001 U			
CARBON DISULFIDE	0.0004 U								0.0004 U			
CARBON TETRACHLORIDE	0.0001 U								0.0001 U			
CHLOROBENZENE	0.0003								0.0012			
CHLORODIBROMOMETHANE	0.0001 U								0.0001 U			
CHLOROETHANE	0.0002 U								0.0001 U			
CHLOROFORM	0.0001 U								0.0001 U			
DICHLOROBROMOMETHANE	0.0001 U								0.0001 U			

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chemical_name	WCC-12 WCC-12-032411 3/24/2011	WCC-15M WCC-15M-031501 3/15/2001	WCC-15M WCC-15M-072412 7/24/2012	WCC-15VS WCC-15VS-072412 7/24/2012	WCC-16VS WCC-16VS-030103 3/1/2003	WCC-16VS WCC-16VS-031308 3/13/2008	WCC-16VS WCC-16VS-031605 3/16/2005	WCC-16VS WCC-16VS-032411 3/24/2011	WCC-16VS WCC-16VS-072412 7/24/2012	WCC-16VS WCC-16VS-090705 9/7/2005	WCC-16VS WCC-16VS-121404 12/14/2004	WCC-16VS WCC-16VS-121505 12/15/2005
DICHLORODIFLUOROMETHANE	0.0001 U								0.0001 U			
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE	0.0001 U								0.0001 U			
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE	0.0002 U							0.0002 U				
METHACRYLONITRILE												
METHYL ACETATE	0.0003 U								0.0003 U			
METHYL ACRYLATE												
METHYL BROMIDE	0.0001 U								0.0001 U			
METHYL CHLORIDE	0.0002 U								0.0002 U			
METHYL ETHYL KETONE	0.001 U								0.001 U			
METHYL IODIDE												
METHYL ISOBUTYL KETONE	0.001 U								0.001 U			
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE	0.0003 U								0.0002 U			
METHYL-T-BUTYL ETHER	0.0004								0.023			
NAPHTHALENE	0.0002 U								0.0001 U			
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE	0.0001 U							0.0001 U				
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE	0.0001 U								0.0001 U			
t-Butyl Alcohol	0.004 U								0.011			
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE	0.0001 U								0.0001 U			
TETRAHYDROFURAN												
TOLUENE	0.0001 U								0.0001 U			
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE	0.0002								0.0002			
TRICHLOROFLUOROMETHANE	0.0001 U								0.0001 U			
TVOC												
VINYL CHLORIDE	0.0001 U								0.0002			
XYLENES,TOTAL	0.0001 U								0.0001 U			
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE			0.0005 U	0.0005 U								
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE			0.004	0.002								
2,3,4,6-Tetrachlorophenol			0.0005 U	0.0005 U								

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chemical_name	WCC-12 WCC-12-032411 3/24/2011	WCC-15M WCC-15M-031501 3/15/2001	WCC-15M WCC-15M-072412 7/24/2012	WCC-15VS WCC-15VS-072412 7/24/2012	WCC-16VS WCC-16VS-030103 3/1/2003	WCC-16VS WCC-16VS-031308 3/13/2008	WCC-16VS WCC-16VS-031605 3/16/2005	WCC-16VS WCC-16VS-032411 3/24/2011	WCC-16VS WCC-16VS-072412 7/24/2012	WCC-16VS WCC-16VS-090705 9/7/2005	WCC-16VS WCC-16VS-121404 12/14/2004	WCC-16VS WCC-16VS-121505 12/15/2005
2,4,5-TRICHLOROPHENOL			0.0005 U	0.0005 U								
2,4,6-TRICHLOROPHENOL			0.0005 U	0.0005 U								
2,4-DICHLOROPHENOL			0.0005 U	0.0005 U								
2,4-DIMETHYLPHENOL			0.0005 U	0.0005 U								
2,4-DINITROPHENOL			0.009 U	0.01 U								
2,4-DINITROTOLUENE			0.0009 U	0.001 U								
2,6-DINITROTOLUENE			0.0005 U	0.0005 U								
2-CHLORONAPHTHALENE			0.0004 U	0.0004 U								
2-CHLOROPHENOL			0.0005 U	0.0005 U								
2-METHYL-4,6-DINITROPHENOL			0.005 U	0.005 U								
2-METHYLNAPHTHALENE			0.00009 U	0.0001 U								
2-NITROANILINE			0.0005 U	0.0005 U								
2-NITROPHENOL			0.0005 U	0.0005 U								
3,3-DICHLOROBENZIDINE			0.002 U	0.002 U								
3-NITROANILINE			0.0005 U	0.0005 U								
4-BROMOPHENYL PHENYL ETHER			0.0005 U	0.0005 U								
4-CHLORO-3-METHYLPHENOL			0.0005 U	0.0005 U								
4-CHLOROANILINE			0.0005 U	0.0005 U								
4-CHLOROPHENYL PHENYL ETHER			0.0005 U	0.0005 U								
4-NITROANILINE			0.0005 U	0.0005 U								
4-NITROPHENOL			0.009 U	0.01 U								
ACENAPHTHENE			0.00009 U	0.0001 U								
ACENAPHTHYLENE			0.00009 U	0.0001 U								
ACETOPHENONE			0.0005 U	0.0005 U								
ANILINE												
ANTHRACENE			0.00009 U	0.0001 U								
ATRAZINE			0.002 U	0.002 U								
AZOBENZENE												
BENZALDEHYDE			0.0009 U	0.001 U								
BENZIDINE			0.019 U	0.019 U								
BENZO(A)ANTHRACENE			0.00009 U	0.0001 U								
BENZO(A)PYRENE			0.00009 U	0.0001 U								
BENZO(B)FLUORANTHENE			0.00009 U	0.0001 U								
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE			0.00009 U	0.0001 U								
BENZO(K)FLUORANTHENE			0.00009 U	0.0001 U								
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE			0.002 U	0.002 U								
Biphenyl			0.0006	0.0005 U								
BIS(2-CHLOROETHOXY) METHANE			0.0005 U	0.0005 U								
BIS(2-CHLOROETHYL) ETHER			0.0005 U	0.0005 U								
Bis(2-chloroisopropyl) ether			0.0005 U	0.0005 U								
BIS(2-CHLOROISOPROPYL)ETHER			0.0005 U	0.0005 U								
BIS(2-ETHYLHEXYL)PHTHALATE			0.002 U	0.002 U								
CAPROLACTAM			0.005 U	0.005 U								
CARBAZOLE			0.0005 U	0.0005 U								
CHRYSENE			0.00009 U	0.0001 U								

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chemical_name	WCC-12 WCC-12-032411 3/24/2011	WCC-15M WCC-15M-031501 3/15/2001	WCC-15M WCC-15M-072412 7/24/2012	WCC-15VS WCC-15VS-072412 7/24/2012	WCC-16VS WCC-16VS-030103 3/1/2003	WCC-16VS WCC-16VS-031308 3/13/2008	WCC-16VS WCC-16VS-031605 3/16/2005	WCC-16VS WCC-16VS-032411 3/24/2011	WCC-16VS WCC-16VS-072412 7/24/2012	WCC-16VS WCC-16VS-090705 9/7/2005	WCC-16VS WCC-16VS-121404 12/14/2004	WCC-16VS WCC-16VS-121505 12/15/2005
CRESOL,O			0.0005 U	0.0005 U								
CRESOL,P			0.0005 U	0.0005 U								
DIBENZO(A,H)ANTHRACENE			0.00009 U	0.0001 U								
DIBENZOFURAN			0.0005 U	0.0005 U								
DIETHYL PHTHALATE			0.002 U	0.002 U								
DIMETHYL PHTHALATE			0.002 U	0.002 U								
DI-N-BUTYL PHTHALATE			0.002 U	0.002 U								
DI-N-OCTYL PHTHALATE			0.002 U	0.002 U								
FLUORANTHENE			0.00009 U	0.0001 U								
FLUORENE			0.00009 U	0.0001 U								
HEXACHLOROBENZENE			0.00009 U	0.0001 U								
HEXACHLOROBUTADIENE			0.0005 U	0.0005 U								
HEXACHLOROCYCLOPENTADIENE			0.005 U	0.005 U								
HEXACHLOROETHANE			0.0009 U	0.001 U								
INDENO(1,2,3-CD)PYRENE			0.00009 U	0.0001 U								
ISOPHORONE			0.0005 U	0.0005 U								
NAPHTHALENE			0.00009 U	0.0001 U								
NITROBENZENE			0.0005 U	0.0005 U								
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE			0.0005 U	0.0005 U								
N-NITROSODIPHENYLAMINE			0.0005 U	0.0005 U								
PENTACHLOROPHENOL			0.0009 U	0.001 U								
PHENANTHRENE			0.00009 U	0.0001 U								
PHENOL			0.0005 U	0.0005 U								
PYRENE			0.00009 U	0.0001 U								
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM	3.55 J											
ANTIMONY	0.01 U											
ARSENIC	0.0098 U											
BARIUM	0.0274											
BERYLLIUM	0.0032											
CADMIUM	0.002 U	0.0019									0.00076 U	
CALCIUM	7.13						12.9					
CHROMIUM	0.0034 U											
COBALT	0.0324 J											
COPPER	0.898	0.29									0.0122	
IRON	0.13					30.4						
LEAD	0.0069 U	0.002									0.01 U	
MAGNESIUM	2.75					3.23						
MANGANESE	0.407 J					0.474						
MERCURY	0.00005 U											
NICKEL	0.0224											
POTASSIUM	2.55											
SELENIUM	0.0089 U											
SILVER	0.0023 U											
SODIUM	9.7											
THALLIUM	0.014 U											

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chemical_name	WCC-12 WCC-12-032411 3/24/2011	WCC-15M WCC-15M-031501 3/15/2001	WCC-15M WCC-15M-072412 7/24/2012	WCC-15VS WCC-15VS-072412 7/24/2012	WCC-16VS WCC-16VS-030103 3/1/2003	WCC-16VS WCC-16VS-031308 3/13/2008	WCC-16VS WCC-16VS-031605 3/16/2005	WCC-16VS WCC-16VS-032411 3/24/2011	WCC-16VS WCC-16VS-072412 7/24/2012	WCC-16VS WCC-16VS-090705 9/7/2005	WCC-16VS WCC-16VS-121404 12/14/2004	WCC-16VS WCC-16VS-121505 12/15/2005
VANADIUM	0.0025 U											
ZINC	0.458	3.7									0.688	
Metals, Filtered (mg/L)												
ALUMINUM	4.52 J											
ANTIMONY	0.01 U											
ARSENIC	0.0098 U											
BARIUM	0.0313											
BERYLLIUM	0.0018											
CADMIUM	0.002 U											
CALCIUM	8.15											
CHROMIUM	0.0034 U											
COBALT	0.0403 J											
COPPER	0.799											
IRON	0.0522 U					23						
LEAD	0.0069 U											
MAGNESIUM	3.15					3.2						
MANGANESE	0.502 J					0.462						
MERCURY	0.00005 U											
NICKEL	0.0252											
POTASSIUM	2.62											
SELENIUM	0.0089 U											
SILVER	0.0023 U											
SODIUM	10.9											
THALLIUM	0.014 U											
VANADIUM	0.0025 U											
ZINC	0.494											
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon						31.3						
CHEMICAL OXYGEN DEMAND												
CHLORIDE						50.8						
FERROUS IRON						27.5						
FREE CARBON DIOXIDE						0.46 U						
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1						0.46 U						
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1						0.46 U						
Nitrate (as N), Nitrogen, Nitrite						0.051						
Nitrate, Nitrogen NO2, NO3						0.04 U						
PH						5						
SULFATE						92.1						
Sulfide						0.53 U						
TOTAL DISSOLVED SOLIDS						225						
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON						1.5						
TOTAL SUSPENDED SOLIDS						8						

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chemical_name	WCC-12 WCC-12-032411 3/24/2011	WCC-15M WCC-15M-031501 3/15/2001	WCC-15M WCC-15M-072412 7/24/2012	WCC-15VS WCC-15VS-072412 7/24/2012	WCC-16VS WCC-16VS-030103 3/1/2003	WCC-16VS WCC-16VS-031308 3/13/2008	WCC-16VS WCC-16VS-031605 3/16/2005	WCC-16VS WCC-16VS-032411 3/24/2011	WCC-16VS WCC-16VS-072412 7/24/2012	WCC-16VS WCC-16VS-090705 9/7/2005	WCC-16VS WCC-16VS-121404 12/14/2004	WCC-16VS WCC-16VS-121505 12/15/2005
Field Parameters (mg/L)												
CONDUCTIVITY												398
DISSOLVED OXYGEN										5.02		
PH												
TEMPERATURE												12
Dissolved Gases (mg/L)												
ETHANE						0.0023						
ETHYLENE						0.001 U						
ETHYLENIMINE												
METHANE						0.078						
PROPANE						0.001 U						

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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chemical_name	WCC-3M WCC-3M-030708 3/7/2008	WCC-3M WCC-3M-032411 3/24/2011	WCC-3M WCC-3M-070209 7/2/2009	WCC-3M WCC-3M-092311 9/23/2011	WCC-3M WCC-3M-121605 12/16/2005	WCC-3M WCC-3M-122004 12/20/2004	WCC-5S WCC-56-071211 7/12/2011	WCC-5S WCC-5S-040605 4/6/2005	WCC-5S WCC-5S-091994 9/19/1994	WCC-6D WCC-6D-102998 10/29/1998	WCC-6M WCC-6M-061506 6/15/2006	WCC-6S WCC-65-040705 4/7/2005
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE		0.0001 U						0.0001 U			0.0001 U	
1,1,1-TRICHLOROETHANE				0.0001 U			0.0001 U				0.0001 U	
1,1,2,2-TETRACHLOROETHANE				0.0004			0.0006				0.0001	
1,1,2-TRICHLOROETHANE				0.0001 U			0.0002				0.0001 U	
1,1-DICHLOROETHANE				0.0001 U			0.0001 U				0.0001 U	
1,1-DICHLOROETHYLENE				0.0002			0.0001 U				0.0001 U	
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE				0.0001 U			0.0001					
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE				0.0001 U			0.0017				0.0001	
1,2-DIBROMO-3-CHLOROPROPANE		0.0002 U										
1,2-DIBROMOETHANE		0.0001 U										
1,2-DICHLOROBENZENE				0.0001 U			0.0001 U				0.0001	
1,2-DICHLOROETHANE				0.0001 U			0.0012			0.0046	0.002	
1,2-DICHLOROETHYLENE												
1,2-DICHLOROPROPANE				0.0001 U			0.0001 U				0.0001 U	
1,2-TRANS-DICHLOROETHYLENE				0.0001 U			0.0004				0.0001 U	
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE				0.0001 U			0.0001 U				0.0001 U	
1,3-DICHLOROBENZENE				0.0001 U			0.0001 U				0.0001 U	
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE				0.0001 U			0.0001 U				0.0001 U	
1,4-DICHLOROBENZENE				0.0001 U			0.0001				0.0001 U	
1,4-DIOXANE				0.02 U			0.02 U					
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER			0.001 U						0 U			
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE				0.003 U			0.003 U				0.003 U	
ACETONITRILE			0.002 U									
ACROLEIN				0.004 U			0.004 U					
ACRYLONITRILE				0.001 U			0.001 U				0.002 U	
BENZENE				0.0002			0.0004				0.0001 U	
BROMOBENZENE												
BROMOCHLOROMETHANE		0.0001 U						0.0001 U			0.0001 U	
BROMOFORM				0.0001 U			0.0001 U				0.0001 U	
CARBON DISULFIDE				0.0004 U			0.0004 U					
CARBON TETRACHLORIDE				0.0001 U			0.0001 U				0.0001 U	
CHLOROBENZENE				0.0001 U			0.001				0.0002	
CHLORODIBROMOMETHANE				0.0001 U			0.0001 U				0.0001 U	
CHLOROETHANE				0.0001 U			0.0001 U				0.0002 U	
CHLOROFORM				0.0002			0.0001 U				0.0001	
DICHLOROBROMOMETHANE				0.0001 U			0.0001 U				0.0001 U	

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chemical_name	WCC-3M WCC-3M-030708 3/7/2008	WCC-3M WCC-3M-032411 3/24/2011	WCC-3M WCC-3M-070209 7/2/2009	WCC-3M WCC-3M-092311 9/23/2011	WCC-3M WCC-3M-121605 12/16/2005	WCC-3M WCC-3M-122004 12/20/2004	WCC-5S WCC-56-071211 7/12/2011	WCC-5S WCC-5S-040605 4/6/2005	WCC-5S WCC-5S-091994 9/19/1994	WCC-6D WCC-6D-102998 10/29/1998	WCC-6M WCC-6M-061506 6/15/2006	WCC-6S WCC-65-040705 4/7/2005
DICHLORODIFLUOROMETHANE				0.0001 U			0.0001 U					
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE				0.0001 U			0.0001 U				0.0001 U	
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE		0.0002 U										
METHACRYLONITRILE												
METHYL ACETATE				0.0003 U			0.0003 U					
METHYL ACRYLATE												
METHYL BROMIDE				0.0001 U			0.0001 U				0.0001 U	
METHYL CHLORIDE				0.0002 U			0.0002 U				0.0002 U	
METHYL ETHYL KETONE				0.001 U			0.001 U					
METHYL IODIDE												
METHYL ISOBUTYL KETONE				0.001 U			0.001 U					
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE				0.0002 U			0.0002 U			0.0017	0.0003 U	
METHYL-T-BUTYL ETHER				0.003			0.0081					
NAPHTHALENE				0.0001 U			0.0001 U					
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE		0.0001 U						0.0001 U			0.0001 U	
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE				0.0001 U			0.0001 U					
t-Butyl Alcohol				0.004 U			0.004 U					
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE				0.0001 U			0.0001 U				0.0002	
TETRAHYDROFURAN												
TOLUENE				0.0001 U			0.0001 U				0.0001 U	
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE				0.0002			0.0002			0.0017	0.0008	
TRICHLOROFLUOROMETHANE				0.0001 U			0.0001 U					
TVOC						0.0015 J						
VINYL CHLORIDE				0.00008 U			0.0005				0.0001 U	
XYLENES,TOTAL				0.0001 U			0.0001 U				0.0002 U	
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE												
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE												
2,3,4,6-Tetrachlorophenol												

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chemical_name	WCC-3M WCC-3M-030708 3/7/2008	WCC-3M WCC-3M-032411 3/24/2011	WCC-3M WCC-3M-070209 7/2/2009	WCC-3M WCC-3M-092311 9/23/2011	WCC-3M WCC-3M-121605 12/16/2005	WCC-3M WCC-3M-122004 12/20/2004	WCC-5S WCC-56-071211 7/12/2011	WCC-5S WCC-5S-040605 4/6/2005	WCC-5S WCC-5S-091994 9/19/1994	WCC-6D WCC-6D-102998 10/29/1998	WCC-6M WCC-6M-061506 6/15/2006	WCC-6S WCC-65-040705 4/7/2005
2,4,5-TRICHLOROPHENOL												
2,4,6-TRICHLOROPHENOL												
2,4-DICHLOROPHENOL												
2,4-DIMETHYLPHENOL												
2,4-DINITROPHENOL												
2,4-DINITROTOLUENE												
2,6-DINITROTOLUENE												
2-CHLORONAPHTHALENE												
2-CHLOROPHENOL												
2-METHYL-4,6-DINITROPHENOL												
2-METHYLNAPHTHALENE												
2-NITROANILINE												
2-NITROPHENOL												
3,3-DICHLOROBENZIDINE												
3-NITROANILINE												
4-BROMOPHENYL PHENYL ETHER												
4-CHLORO-3-METHYLPHENOL												
4-CHLOROANILINE												
4-CHLOROPHENYL PHENYL ETHER												
4-NITROANILINE												
4-NITROPHENOL												
ACENAPHTHENE												
ACENAPHTHYLENE												
ACETOPHENONE												
ANILINE												
ANTHRACENE												
ATRAZINE												
AZOBENZENE												
BENZALDEHYDE												
BENZIDINE												
BENZO(A)ANTHRACENE												
BENZO(A)PYRENE												
BENZO(B)FLUORANTHENE												
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE												
BENZO(K)FLUORANTHENE												
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE												
Biphenyl												
BIS(2-CHLOROETHOXY) METHANE												
BIS(2-CHLOROETHYL) ETHER												
Bis(2-chloroisopropyl) ether												
BIS(2-CHLOROISOPROPYL)ETHER												
BIS(2-ETHYLHEXYL)PHTHALATE												
CAPROLACTAM												
CARBAZOLE												
CHRYSENE												

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chemical_name	WCC-3M WCC-3M-030708 3/7/2008	WCC-3M WCC-3M-032411 3/24/2011	WCC-3M WCC-3M-070209 7/2/2009	WCC-3M WCC-3M-092311 9/23/2011	WCC-3M WCC-3M-121605 12/16/2005	WCC-3M WCC-3M-122004 12/20/2004	WCC-5S WCC-56-071211 7/12/2011	WCC-5S WCC-5S-040605 4/6/2005	WCC-5S WCC-5S-091994 9/19/1994	WCC-6D WCC-6D-102998 10/29/1998	WCC-6M WCC-6M-061506 6/15/2006	WCC-6S WCC-65-040705 4/7/2005
CRESOL,O												
CRESOL,P												
DIBENZO(A,H)ANTHRACENE												
DIBENZOFURAN												
DIETHYL PHTHALATE												
DIMETHYL PHTHALATE												
DI-N-BUTYL PHTHALATE												
DI-N-OCTYL PHTHALATE												
FLUORANTHENE												
FLUORENE												
HEXACHLOROBENZENE												
HEXACHLOROBUTADIENE												
HEXACHLOROCYCLOPENTADIENE												
HEXACHLOROETHANE												
INDENO(1,2,3-CD)PYRENE												
ISOPHORONE												
NAPHTHALENE												
NITROBENZENE												
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE												
N-NITROSODIPHENYLAMINE												
PENTACHLOROPHENOL												
PHENANTHRENE												
PHENOL												
PYRENE												
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM		4.78							6.9			
ANTIMONY		0.01 U							0.005 U			
ARSENIC		0.0098 U							0.0065			
BARIUM		0.0454							0.2 U			
BERYLLIUM		0.0024							0.005 U			
CADMIUM		0.002 U							0.004 U			
CALCIUM		21.4							12			
CHROMIUM		0.0034 U							0.01 U			
COBALT		0.0267							0.05 U			
COPPER		0.0217							0.037			
IRON		0.0522 U							14			
LEAD		0.0069 U							0.0099			
MAGNESIUM		5.26							5 U			
MANGANESE		0.56							0.47			
MERCURY		0.00005 U							0.0002 U			
NICKEL		0.0182							0.04 U			
POTASSIUM		5.39							5 U			
SELENIUM		0.0089 U							0.005 U			
SILVER		0.0023 U							0.01 U			
SODIUM		39.8							11			
THALLIUM		0.014 U							0.005 U			

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chemical_name	WCC-3M WCC-3M-030708 3/7/2008	WCC-3M WCC-3M-032411 3/24/2011	WCC-3M WCC-3M-070209 7/2/2009	WCC-3M WCC-3M-092311 9/23/2011	WCC-3M WCC-3M-121605 12/16/2005	WCC-3M WCC-3M-122004 12/20/2004	WCC-5S WCC-56-071211 7/12/2011	WCC-5S WCC-5S-040605 4/6/2005	WCC-5S WCC-5S-091994 9/19/1994	WCC-6D WCC-6D-102998 10/29/1998	WCC-6M WCC-6M-061506 6/15/2006	WCC-6S WCC-65-040705 4/7/2005
VANADIUM		0.0025 U							0.18			
ZINC		0.162							0.32			
Metals, Filtered (mg/L)												
ALUMINUM		4.76							6			
ANTIMONY		0.01 U							0.018			
ARSENIC		0.0098 U							0.005 U			
BARIUM		0.0452							0.2 U			
BERYLLIUM		0.0024							0.005 U			
CADMIUM		0.002 U							0.0042			
CALCIUM		21.3							12			
CHROMIUM		0.0034 U							0.01 U			
COBALT		0.0265							0.05 U			
COPPER		0.0226							0.054			
IRON		0.0522 U							0.34			
LEAD		0.0069 U							0.0083			
MAGNESIUM		5.26							5 U			
MANGANESE		0.558							0.46			
MERCURY		0.00005 U							0.0002 U			
NICKEL		0.0178							0.04 U			
POTASSIUM		5.34							5 U			
SELENIUM		0.0089 U							0.005 U			
SILVER		0.0023 U							0.01 U			
SODIUM		39.9							12			
THALLIUM		0.014 U							0.005 U			
VANADIUM		0.0025 U							0.05 U			
ZINC		0.161							0.35			
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon	24.8											
CHEMICAL OXYGEN DEMAND												
CHLORIDE	75.7											
FERROUS IRON	0.035											
FREE CARBON DIOXIDE	0.46 U											
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1	0.46 U											
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1	0.46 U											
Nitrate (as N), Nitrogen, Nitrite	0.015 U											
Nitrate, Nitrogen NO2, NO3	2											
PH	4.1											
SULFATE	67.7											
Sulfide	0.53 U											
TOTAL DISSOLVED SOLIDS	219											
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON	1.2											
TOTAL SUSPENDED SOLIDS	3 U											

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chemical_name	WCC-3M WCC-3M-030708 3/7/2008	WCC-3M WCC-3M-032411 3/24/2011	WCC-3M WCC-3M-070209 7/2/2009	WCC-3M WCC-3M-092311 9/23/2011	WCC-3M WCC-3M-121605 12/16/2005	WCC-3M WCC-3M-122004 12/20/2004	WCC-5S WCC-56-071211 7/12/2011	WCC-5S WCC-5S-040605 4/6/2005	WCC-5S WCC-5S-091994 9/19/1994	WCC-6D WCC-6D-102998 10/29/1998	WCC-6M WCC-6M-061506 6/15/2006	WCC-6S WCC-65-040705 4/7/2005
Field Parameters (mg/L)												
CONDUCTIVITY					397			511				602
DISSOLVED OXYGEN					4.45			3				2.84
PH								5.1				6.43
TEMPERATURE					13			12.4				11.4
Dissolved Gases (mg/L)												
ETHANE	0.001 U											
ETHYLENE	0.001 U											
ETHYLENIMINE												
METHANE	0.019											
PROPANE	0.001 U											

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	WCC-6S WCC-6S-061506 6/15/2006	WCC-6S WCC-6S-071211 7/12/2011	WCC-6S WCC-6S-072712 7/27/2012	WCC-6S WCC-6S-091994 9/19/1994	WCC-6S WCC-6S-091994-D 9/19/1994	WCC-6S WCC-6S-091994-T 9/19/1994	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2RB-030708 3/7/2008	WE-2RB WE-2RB-032411 3/24/2011	WE-2RB WE-2RB-071211 7/12/2011	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2Rb-091712 9/17/2012
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE	0.005 U								0.0005 U			
1,1,1-TRICHLOROETHANE		0.0001 U										0.0008 U
1,1,2,2-TETRACHLOROETHANE		0.0001										0.004 J
1,1,2-TRICHLOROETHANE		0.0001 U										0.0008 U
1,1-DICHLOROETHANE		0.0001 U										0.001 U
1,1-DICHLOROETHYLENE		0.0001 U									0.0005 U	
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE		0.0001 U										0.27
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE		0.0017										0.003 J
1,2-DIBROMO-3-CHLOROPROPANE									0.0004 U			
1,2-DIBROMOETHANE												0.001 U
1,2-DICHLOROBENZENE		0.0001 U										0.077
1,2-DICHLOROETHANE		0.0049										0.012
1,2-DICHLOROETHYLENE												
1,2-DICHLOROPROPANE		0.0001 U									0.0005 U	
1,2-TRANS-DICHLOROETHYLENE		0.0001 U										0.001 J
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE		0.0001 U									0.0005 U	
1,3-DICHLOROBENZENE		0.0001 U										0.035
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE		0.0001 U									0.0005 U	
1,4-DICHLOROBENZENE		0.0001 U										0.09
1,4-DIOXANE												0.07 U
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER				0 U								
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
ACETONE		0.0037										0.017 J
ACETONITRILE												
ACROLEIN		0.004 U									0.02 U	
ACRYLONITRILE		0.001 U									0.005 U	
BENZENE		0.0001 U										0.028
BROMOBENZENE												
BROMOCHLOROMETHANE	0.005 U								0.0005 U			
BROMOFORM		0.0001 U									0.0005 U	
CARBON DISULFIDE		0.0004 U									0.002 U	
CARBON TETRACHLORIDE		0.0001 U										0.001 U
CHLOROBENZENE		0.0001 U										0.45
CHLORODIBROMOMETHANE		0.0001 U									0.0005 U	
CHLOROETHANE		0.0001 U									0.0005 U	
CHLOROFORM		0.0002										0.0008 U
DICHLOROBROMOMETHANE		0.0001 U									0.0005 U	

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chemical_name	WCC-6S WCC-6S-061506 6/15/2006	WCC-6S WCC-6S-071211 7/12/2011	WCC-6S WCC-6S-072712 7/27/2012	WCC-6S WCC-6S-091994 9/19/1994	WCC-6S WCC-6S-091994-D 9/19/1994	WCC-6S WCC-6S-091994-T 9/19/1994	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2RB-030708 3/7/2008	WE-2RB WE-2RB-032411 3/24/2011	WE-2RB WE-2RB-071211 7/12/2011	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2Rb-091712 9/17/2012
DICHLORODIFLUOROMETHANE		0.0001 U									0.0005 U	
DIETHYL ETHER												
ETHYL METHACRYLATE												
ETHYLBENZENE		0.0001 U										0.05
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE									0.067			
METHACRYLONITRILE												
METHYL ACETATE		0.0003 U									0.0015 U	
METHYL ACRYLATE												
METHYL BROMIDE		0.0001 U									0.0005 U	
METHYL CHLORIDE		0.0002 U									0.001 U	
METHYL ETHYL KETONE		0.001 U									0.005 U	
METHYL IODIDE												
METHYL ISOBUTYL KETONE		0.001 U									0.005 U	
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE		0.0002										0.003 J
METHYL-T-BUTYL ETHER		0.0004									0.0008	
NAPHTHALENE											0.0047	
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE	0.084								0.014			
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
SEC-BUTYLBENZENE												
STYRENE		0.0001 U									0.0005 U	
t-Butyl Alcohol		0.004 U									0.02 U	
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE		0.0001										0.001 J
TETRAHYDROFURAN												
TOLUENE		0.0001 U										0.3
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE		0.0017										0.004 J
TRICHLOROFLUOROMETHANE		0.0001 U									0.0005 U	
TVOC												
VINYL CHLORIDE		0.00008 U										0.002 J
XYLENES,TOTAL		0.0001 U										0.22
Semivolatile Organics (mg/L)												
1,2,4,5-TETRACHLOROBENZENE			0.0005 U									
1,2-DICHLOROBENZENE												
1,3-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
1,4-DIOXANE			0.002									
2,3,4,6-Tetrachlorophenol			0.0005 U									

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WCC-6S WCC-6S-061506 6/15/2006	WCC-6S WCC-6S-071211 7/12/2011	WCC-6S WCC-6S-072712 7/27/2012	WCC-6S WCC-6S-091994 9/19/1994	WCC-6S WCC-6S-091994-D 9/19/1994	WCC-6S WCC-6S-091994-T 9/19/1994	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2RB-030708 3/7/2008	WE-2RB WE-2RB-032411 3/24/2011	WE-2RB WE-2RB-071211 7/12/2011	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2Rb-091712 9/17/2012
2,4,5-TRICHLOROPHENOL			0.0005 U									
2,4,6-TRICHLOROPHENOL			0.0005 U									
2,4-DICHLOROPHENOL			0.0005 U									
2,4-DIMETHYLPHENOL			0.0005 U									
2,4-DINITROPHENOL			0.009 U									
2,4-DINITROTOLUENE			0.0009 U									
2,6-DINITROTOLUENE			0.0005 U									
2-CHLORONAPHTHALENE			0.0004 U									
2-CHLOROPHENOL			0.0005 U									
2-METHYL-4,6-DINITROPHENOL			0.005 U									
2-METHYLNAPHTHALENE			0.00009 U									
2-NITROANILINE			0.0005 U									
2-NITROPHENOL			0.0005 U									
3,3-DICHLOROBENZIDINE			0.002 U									
3-NITROANILINE			0.0005 U									
4-BROMOPHENYL PHENYL ETHER			0.0005 U									
4-CHLORO-3-METHYLPHENOL			0.0005 U									
4-CHLOROANILINE			0.0005 U									
4-CHLOROPHENYL PHENYL ETHER			0.0005 U									
4-NITROANILINE			0.0005 U									
4-NITROPHENOL			0.009 U									
ACENAPHTHENE			0.00009 U									
ACENAPHTHYLENE			0.00009 U									
ACETOPHENONE			0.0005 U									
ANILINE												
ANTHRACENE			0.00009 U									
ATRAZINE			0.002 U									
AZOBENZENE												
BENZALDEHYDE			0.0009 U									
BENZIDINE			0.019 U									
BENZO(A)ANTHRACENE			0.00009 U									
BENZO(A)PYRENE			0.00009 U									
BENZO(B)FLUORANTHENE			0.00009 U									
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE			0.00009 U									
BENZO(K)FLUORANTHENE			0.00009 U									
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE			0.002 U									
Biphenyl			0.0005 U									
BIS(2-CHLOROETHOXY) METHANE			0.0005 U									
BIS(2-CHLOROETHYL) ETHER			0.0005 U									
Bis(2-chloroisopropyl) ether			0.0005 U									
BIS(2-CHLOROISOPROPYL)ETHER			0.0005 U									
BIS(2-ETHYLHEXYL)PHTHALATE			0.002 U									
CAPROLACTAM			0.005 U									
CARBAZOLE			0.0005 U									
CHRYSENE			0.00009 U									

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WCC-6S WCC-6S-061506 6/15/2006	WCC-6S WCC-6S-071211 7/12/2011	WCC-6S WCC-6S-072712 7/27/2012	WCC-6S WCC-6S-091994 9/19/1994	WCC-6S WCC-6S-091994-D 9/19/1994	WCC-6S WCC-6S-091994-T 9/19/1994	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2RB-030708 3/7/2008	WE-2RB WE-2RB-032411 3/24/2011	WE-2RB WE-2RB-071211 7/12/2011	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2Rb-091712 9/17/2012
CRESOL,O			0.0005 U									
CRESOL,P			0.0005 U									
DIBENZO(A,H)ANTHRACENE			0.00009 U									
DIBENZOFURAN			0.0005 U									
DIETHYL PHTHALATE			0.002 U									
DIMETHYL PHTHALATE			0.002 U									
DI-N-BUTYL PHTHALATE			0.002 U									
DI-N-OCTYL PHTHALATE			0.002 U									
FLUORANTHENE			0.00009 U									
FLUORENE			0.00009 U									
HEXACHLOROBENZENE			0.00009 U									
HEXACHLOROBUTADIENE			0.0005 U									
HEXACHLOROCYCLOPENTADIENE			0.005 U									
HEXACHLOROETHANE			0.0009 U									
INDENO(1,2,3-CD)PYRENE			0.00009 U									
ISOPHORONE			0.0005 U									
NAPHTHALENE			0.00009 U									
NITROBENZENE			0.0005 U									
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE			0.0005 U									
N-NITROSODIPHENYLAMINE			0.0005 U									
PENTACHLOROPHENOL			0.0009 U									
PHENANTHRENE			0.00009 U									
PHENOL			0.0005 U									
PYRENE			0.00009 U									
PYRIDINE												
Metals, Total (mg/L)												
ALUMINUM						3.3				6		
ANTIMONY						0.005 U				0.0058 U		
ARSENIC						0.005 U				0.0051 U		
BARIUM						0.2 U				0.0441		
BERYLLIUM						0.005 U				0.0016		
CADMIUM						0.004 U				0.00097		
CALCIUM						21				15.2		
CHROMIUM						0.01 U				0.0022		
COBALT						0.05 U				0.0361		
COPPER						0.025 U				0.00094 U		
IRON						24				6.23		
LEAD						0.0047				0.0022 U		
MAGNESIUM						5				4.83		
MANGANESE						0.49				0.527		
MERCURY						0.0002 U				0.000026 U		
NICKEL						0.04 U				0.0337		
POTASSIUM						5 U				3.65		
SELENIUM						0.005 U				0.0069 U		
SILVER						0.01 U				0.00091 U		
SODIUM						17				46.4		
THALLIUM						0.005 U				0.0042 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WCC-6S WCC-6S-061506 6/15/2006	WCC-6S WCC-6S-071211 7/12/2011	WCC-6S WCC-6S-072712 7/27/2012	WCC-6S WCC-6S-091994 9/19/1994	WCC-6S WCC-6S-091994-D 9/19/1994	WCC-6S WCC-6S-091994-T 9/19/1994	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2RB-030708 3/7/2008	WE-2RB WE-2RB-032411 3/24/2011	WE-2RB WE-2RB-071211 7/12/2011	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2Rb-091712 9/17/2012
VANADIUM						0.05 U				0.0135		
ZINC						0.34				0.172		
Metals, Filtered (mg/L)												
ALUMINUM					2.8				5.33			
ANTIMONY					0.0079				0.01 U			
ARSENIC					0.005 U				0.0098 U			
BARIUM					0.2 U				0.0407			
BERYLLIUM					0.005 U				0.002			
CADMIUM					0.004 U				0.002 U			
CALCIUM					22				14.8			
CHROMIUM					0.01 U				0.0034 U			
COBALT					0.05 U				0.0334			
COPPER					0.029				0.0045			
IRON					14				4.72			
LEAD					0.003 U				0.0069 U			
MAGNESIUM					5 U				4.36			
MANGANESE					0.48				0.493			
MERCURY					0.0002 U				0.00005 U			
NICKEL					0.042				0.029			
POTASSIUM					5 U				3.67			
SELENIUM					0.005 U				0.0089 U			
SILVER					0.01 U				0.0023 U			
SODIUM					18				51			
THALLIUM					0.005 U				0.014 U			
VANADIUM					0.05 U				0.0025 U			
ZINC					0.31				0.158			
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND										4.3 U		
Carbon								32.2				
CHEMICAL OXYGEN DEMAND										21.8		
CHLORIDE								57.9				
FERROUS IRON								10.4				
FREE CARBON DIOXIDE								0.46 U				
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1										0.46 U		
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1										0.46 U		
Nitrate (as N), Nitrogen, Nitrite								0.015 U				
Nitrate, Nitrogen NO2, NO3								0.16				
PH								3.7				
SULFATE										132		
Sulfide								14.5				
TOTAL DISSOLVED SOLIDS										326		
TOTAL HARDNESS-CALCIUM CARBONATE										63.2		
TOTAL ORGANIC CARBON										4.6		
TOTAL SUSPENDED SOLIDS										8.8		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WCC-6S WCC-6S-061506 6/15/2006	WCC-6S WCC-6S-071211 7/12/2011	WCC-6S WCC-6S-072712 7/27/2012	WCC-6S WCC-6S-091994 9/19/1994	WCC-6S WCC-6S-091994-D 9/19/1994	WCC-6S WCC-6S-091994-T 9/19/1994	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2RB-030708 3/7/2008	WE-2RB WE-2RB-032411 3/24/2011	WE-2RB WE-2RB-071211 7/12/2011	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2Rb-091712 9/17/2012
Field Parameters (mg/L)												
CONDUCTIVITY												
DISSOLVED OXYGEN												
PH												
TEMPERATURE												
Dissolved Gases (mg/L)												
ETHANE								0.013				
ETHYLENE								0.011				
ETHYLENIMINE							0.5 U					
METHANE								2				
PROPANE								0.013				

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RB WE-2RB-091809 9/18/2009	WE-2RB WE-2RB-091994 9/19/1994	WE-3 WE-3-091994 9/19/1994	WE-3 WE-3-120392 12/3/1992	WE-4 WE-4-091994 9/19/1994	WE-4 WE-4-A-120392 12/3/1992	WE-4 WE-4-B-120392 12/3/1992
Volatile Organics (mg/L)							
1,1,1,2-TETRACHLOROETHANE			0 U		0 U		
1,1,1-TRICHLOROETHANE			0 U		0 U		
1,1,2,2-TETRACHLOROETHANE				0 U		0 U	0 U
1,1,2-TRICHLOROETHANE			0 U		0 U		
1,1-DICHLOROETHANE			0 U		0 U		
1,1-DICHLOROETHYLENE			0 U		0 U		
1,1-DICHLOROPROPYLENE							
1,2,3-TRICHLOROBENZENE							
1,2,3-TRICHLOROPROPANE							
1,2,4-TRICHLOROBENZENE							
1,2,4-TRIMETHYLBENZENE							
1,2-CIS-DICHLOROETHYLENE							
1,2-DIBROMO-3-CHLOROPROPANE							
1,2-DIBROMOETHANE							
1,2-DICHLOROBENZENE							
1,2-DICHLOROETHANE			0 U		0 U		
1,2-DICHLOROETHYLENE							
1,2-DICHLOROPROPANE			0 U		0 U		
1,2-TRANS-DICHLOROETHYLENE			0 U		0 U		
1,3,5-TRIMETHYLBENZENE							
1,3-CIS-DICHLOROPROPYLENE			0 U		0 U		
1,3-DICHLOROBENZENE							
1,3-DICHLOROPROPANE							
1,3-TRANS-DICHLOROPROPYLENE			0 U		0 U		
1,4-DICHLOROBENZENE							
1,4-DIOXANE							
1-CHLOROBUTANE							
2,2-DICHLOROPROPANE							
2-CHLOROETHYL VINYL ETHER		0 U	0 U		0 U		
2-CHLOROTOLUENE							
2-HEXANONE							
3-CHLOROPROPENE							
ACETONE			0 U		0 U		
ACETONITRILE							
ACROLEIN			0 U		0 U		
ACRYLONITRILE			0 U		0 U		
BENZENE			0 U		0 U		
BROMOBENZENE							
BROMOCHLOROMETHANE							
BROMOFORM			0 U		0 U		
CARBON DISULFIDE							
CARBON TETRACHLORIDE			0 U		0 U		
CHLOROBENZENE			0 U		0 U		
CHLORODIBROMOMETHANE			0 U		0 U		
CHLOROETHANE			0 U		0 U		
CHLOROFORM			0 U		0 U		
DICHLOROBROMOMETHANE			0 U		0 U		

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RB WE-2RB-091809 9/18/2009	WE-2RB WE-2RB-091994 9/19/1994	WE-3 WE-3-091994 9/19/1994	WE-3 WE-3-120392 12/3/1992	WE-4 WE-4-091994 9/19/1994	WE-4 WE-4-A-120392 12/3/1992	WE-4 WE-4-B-120392 12/3/1992
DICHLORODIFLUOROMETHANE							
DIETHYL ETHER							
ETHYL METHACRYLATE							
ETHYLBENZENE			0 U		0 U		
HEXACHLOROBUTADIENE							
HEXACHLOROETHANE							
ISOPROPYLBENZENE							
M+P-XYLENE							
METHACRYLONITRILE							
METHYL ACETATE							
METHYL ACRYLATE							
METHYL BROMIDE			0 U		0 U		
METHYL CHLORIDE			0 U		0 U		
METHYL ETHYL KETONE							
METHYL IODIDE							
METHYL ISOBUTYL KETONE							
METHYL METHACRYLATE							
METHYLENE BROMIDE							
METHYLENE CHLORIDE			0 U		0 U		
METHYL-T-BUTYL ETHER							
NAPHTHALENE							
N-BUTYLBENZENE							
N-PROPYLBENZENE							
O-XYLENE							
P-CHLOROTOLUENE							
PENTACHLOROETHANE							
P-ISOPROPYLTOLUENE							
PROPANENITRILE							
SEC-BUTYLBENZENE							
STYRENE							
t-Butyl Alcohol							
TERT-BUTYLBENZENE							
TETRACHLOROETHYLENE			0 U		0 U		
TETRAHYDROFURAN							
TOLUENE			0 U		0 U		
TRANS-1,4-DICHLORO-2-BUTENE							
TRICHLOROETHYLENE			0 U		0 U		
TRICHLOROFLUOROMETHANE			0 U		0 U		
TVOC							
VINYL CHLORIDE			0 U		0 U		
XYLENES,TOTAL			0 U		0 U		
Semivolatile Organics (mg/L)							
1,2,4,5-TETRACHLOROBENZENE							
1,2-DICHLOROBENZENE			0 U		0 U		
1,3-DICHLOROBENZENE			0 U		0 U		
1,4-DICHLOROBENZENE			0 U		0 U		
1,4-DIOXANE							
2,3,4,6-Tetrachlorophenol							

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Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
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chemical_name	WE-2RB WE-2RB-091809 9/18/2009	WE-2RB WE-2RB-091994 9/19/1994	WE-3 WE-3-091994 9/19/1994	WE-3 WE-3-120392 12/3/1992	WE-4 WE-4-091994 9/19/1994	WE-4 WE-4-A-120392 12/3/1992	WE-4 WE-4-B-120392 12/3/1992
2,4,5-TRICHLOROPHENOL	0.0009 U						
2,4,6-TRICHLOROPHENOL	0.0009 U						
2,4-DICHLOROPHENOL	0.0009 U						
2,4-DIMETHYLPHENOL	0.003 U						
2,4-DINITROPHENOL	0.019 U						
2,4-DINITROTOLUENE	0.0009 U						
2,6-DINITROTOLUENE	0.0009 U						
2-CHLORONAPHTHALENE	0.002 U						
2-CHLOROPHENOL	0.0009 U						
2-METHYL-4,6-DINITROPHENOL	0.005 U						
2-METHYLNAPHTHALENE	0.0009 U						
2-NITROANILINE	0.0009 U						
2-NITROPHENOL	0.0009 U						
3,3-DICHLOROBENZIDINE	0.002 U						
3-NITROANILINE	0.0009 U						
4-BROMOPHENYL PHENYL ETHER	0.0009 U						
4-CHLORO-3-METHYLPHENOL	0.0009 U						
4-CHLOROANILINE	0.0009 U						
4-CHLOROPHENYL PHENYL ETHER	0.002 U						
4-NITROANILINE	0.0009 U						
4-NITROPHENOL	0.009 U						
ACENAPHTHENE	0.0009 U						
ACENAPHTHYLENE	0.0009 U						
ACETOPHENONE							
ANILINE							
ANTHRACENE	0.0009 U						
ATRAZINE							
AZOBENZENE							
BENZALDEHYDE							
BENZIDINE							
BENZO(A)ANTHRACENE	0.0009 U						
BENZO(A)PYRENE	0.0009 U						
BENZO(B)FLUORANTHENE	0.0009 U						
Benzo(b+k)Fluoranthene							
BENZO(GHI)PERYLENE	0.0009 U						
BENZO(K)FLUORANTHENE	0.0009 U						
BENZOIC ACID							
BENZYL ALCOHOL							
BENZYL BUTYL PHTHALATE	0.002 U						
Biphenyl							
BIS(2-CHLOROETHOXY) METHANE	0.0009 U						
BIS(2-CHLOROETHYL) ETHER	0.0009 U						
Bis(2-chloroisopropyl) ether							
BIS(2-CHLOROISOPROPYL)ETHER	0.0009 U						
BIS(2-ETHYLHEXYL)PHTHALATE	0.006						
CAPROLACTAM							
CARBAZOLE	0.0009 U						
CHRYSENE	0.0009 U						

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Laboratory Analytical Data - Groundwater within CPS Plume
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chemical_name	WE-2RB WE-2RB-091809 9/18/2009	WE-2RB WE-2RB-091994 9/19/1994	WE-3 WE-3-091994 9/19/1994	WE-3 WE-3-120392 12/3/1992	WE-4 WE-4-091994 9/19/1994	WE-4 WE-4-A-120392 12/3/1992	WE-4 WE-4-B-120392 12/3/1992
CRESOL,O	0.001						
CRESOL,P	0.003						
DIBENZO(A,H)ANTHRACENE	0.0009 U						
DIBENZOFURAN	0.0009 U						
DIETHYL PHTHALATE	0.002 U						
DIMETHYL PHTHALATE	0.002 U						
DI-N-BUTYL PHTHALATE	0.004						
DI-N-OCTYL PHTHALATE	0.002 U						
FLUORANTHENE	0.0009 U						
FLUORENE	0.0009 U						
HEXACHLOROBENZENE	0.0009 U						
HEXACHLOROBUTADIENE	0.0009 U						
HEXACHLOROCYCLOPENTADIENE	0.005 U						
HEXACHLOROETHANE	0.0009 U						
INDENO(1,2,3-CD)PYRENE	0.0009 U						
ISOPHORONE	0.0009 U						
NAPHTHALENE							
NITROBENZENE	0.0009 U						
N-NITROSODIMETHYLAMINE							
N-NITROSODI-N-PROPYLAMINE	0.0009 U						
N-NITROSODIPHENYLAMINE	0.002 U						
PENTACHLOROPHENOL	0.003 U						
PHENANTHRENE	0.0009 U						
PHENOL	0.0009 U						
PYRENE	0.0009 U						
PYRIDINE							
Metals, Total (mg/L)							
ALUMINUM			3.7		160		
ANTIMONY			0.005 U		0.005 U		
ARSENIC			0.0097		0.034		
BARIUM			0.2 U		0.89		
BERYLLIUM			0.005 U		0.005 U		
CADMIUM			0.004 U		0.005		
CALCIUM			7.2		190		
CHROMIUM			0.01 U		0.38		
COBALT			0.05 U		0.05 U		
COPPER			0.05		0.54		
IRON			26		770		
LEAD			0.027		0.19		
MAGNESIUM			5 U		14		
MANGANESE			0.45		0.87		
MERCURY			0.0002 U		0.0007		
NICKEL			0.04 U		0.078		
POTASSIUM			5 U		18		
SELENIUM			0.005 U		0.005 U		
SILVER			0.01 U		0.01 U		
SODIUM			26		35		
THALLIUM			0.005 U		0.005 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RB WE-2RB-091809 9/18/2009	WE-2RB WE-2RB-091994 9/19/1994	WE-3 WE-3-091994 9/19/1994	WE-3 WE-3-120392 12/3/1992	WE-4 WE-4-091994 9/19/1994	WE-4 WE-4-A-120392 12/3/1992	WE-4 WE-4-B-120392 12/3/1992
VANADIUM			0.05 U		0.19		
ZINC			0.52		1.4		
Metals, Filtered (mg/L)							
ALUMINUM			35		0.2 U		
ANTIMONY			0.0084		0.0059		
ARSENIC			0.0065		0.005 U		
BARIUM			0.2 U		0.2 U		
BERYLLIUM			0.005 U		0.005 U		
CADMIUM			0.004 U		0.004 U		
CALCIUM			7.4		69		
CHROMIUM			0.01 U		0.01 U		
COBALT			0.05 U		0.05 U		
COPPER			0.039		0.025 U		
IRON			24		0.1 U		
LEAD			0.0032		0.003 U		
MAGNESIUM			5 U		5 U		
MANGANESE			0.44		0.14		
MERCURY			0.0002 U		0.0002 U		
NICKEL			0.041		0.04 U		
POTASSIUM			5 U		5 U		
SELENIUM			0.005 U		0.005 U		
SILVER			0.01 U		0.01 U		
SODIUM			25		29		
THALLIUM			0.005 U		0.005 U		
VANADIUM			0.05 U		0.05 U		
ZINC			0.46		0.02 U		
Inorganics (mg/L)							
BIOCHEMICAL OXYGEN DEMAND							
Carbon							
CHEMICAL OXYGEN DEMAND							
CHLORIDE							
FERROUS IRON							
FREE CARBON DIOXIDE							
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1							
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1							
Nitrate (as N), Nitrogen, Nitrite							
Nitrate, Nitrogen NO2, NO3							
PH							
SULFATE							
Sulfide							
TOTAL DISSOLVED SOLIDS							
TOTAL HARDNESS-CALCIUM CARBONATE							
TOTAL ORGANIC CARBON							
TOTAL SUSPENDED SOLIDS							

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RB WE-2RB-091809 9/18/2009	WE-2RB WE-2RB-091994 9/19/1994	WE-3 WE-3-091994 9/19/1994	WE-3 WE-3-120392 12/3/1992	WE-4 WE-4-091994 9/19/1994	WE-4 WE-4-A-120392 12/3/1992	WE-4 WE-4-B-120392 12/3/1992
Field Parameters (mg/L)							
CONDUCTIVITY							
DISSOLVED OXYGEN							
PH							
TEMPERATURE							
Dissolved Gases (mg/L)							
ETHANE							
ETHYLENE							
ETHYLENIMINE							
METHANE							
PROPANE							

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03 CPS-03- 011102-1210 1/11/2002	CPS-03 CPS-03- 031302-1105 3/13/2002	CPS-03 CPS-03- 031302-1140 3/13/2002	CPS-03 CPS-03- 040502-1050 4/5/2002	CPS-03 CPS-03- 120101 12/1/2001	CPS-03 CPS-3-091994 9/19/1994	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A- 020305 2/3/2005	CPS-03A CPS-03A- 032411 3/24/2011	CPS-03A CPS-03A- 072712 7/27/2012	CPS-03A CPS-03A- 091712 9/17/2012	CPS-03A CPS-03A- 091809 9/18/2009
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE						0 U			0.0005 U			
1,1,1-TRICHLOROETHANE				0.001 U							0.0008 U	
1,1,2,2-TETRACHLOROETHANE				0.015							0.002 J	
1,1,2-TRICHLOROETHANE				0.003 J							0.0008 U	
1,1-DICHLOROETHANE				0.001 U							0.001 U	
1,1-DICHLOROETHYLENE					0 U					0.0006		
1,1-DICHLOROPROPYLENE								0.00298 U				
1,2,3-TRICHLOROBENZENE	0.02 J											
1,2,3-TRICHLOROPROPANE								0.00507 U				
1,2,4-TRICHLOROBENZENE				0.38							0.15	
1,2,4-TRIMETHYLBENZENE								0.0019 U				
1,2-CIS-DICHLOROETHYLENE				0.22							0.028	
1,2-DIBROMO-3-CHLOROPROPANE									0.0004 U			
1,2-DIBROMOETHANE				0.001 U							0.001 U	
1,2-DICHLOROBENZENE				0.65							0.13	
1,2-DICHLOROETHANE				0.072							0.013	
1,2-DICHLOROETHYLENE					0 U							
1,2-DICHLOROPROPANE					0 U					0.0001 U		
1,2-TRANS-DICHLOROETHYLENE				0.011							0.005	
1,3,5-TRIMETHYLBENZENE								0.00245 U				
1,3-CIS-DICHLOROPROPYLENE					0 U					0.0001 U		
1,3-DICHLOROBENZENE				0.045							0.003 J	
1,3-DICHLOROPROPANE								0.00285 U				
1,3-TRANS-DICHLOROPROPYLENE					0 U					0.0001 U		
1,4-DICHLOROBENZENE				0.13							0.012	
1,4-DIOXANE				0.07 U							0.07 U	
1-CHLOROBUTANE			0.014 J									
2,2-DICHLOROPROPANE								0.0028 U				
2-CHLOROETHYL VINYL ETHER						0 U						
2-CHLOROTOLUENE												
2-HEXANONE								0.00308 U				
3-CHLOROPROPENE								0.00742 U				
3-METHYL HEXANE				0.014 J								
ACETONE				0.077							0.006 U	
ACROLEIN						0 U				0.004 U		
ACRYLONITRILE					0 U					0.001 U		
BENZENE				0.1							0.026	
BROMOBENZENE								0.00411 U				
BROMOCHLOROMETHANE									0.0005 U			
BROMOFORM						0 U				0.0001 U		
CARBON DISULFIDE										0.0006		
CARBON TETRACHLORIDE				0.001 U							0.001 U	
CHLOROBENZENE				0.64							0.081	
CHLORODIBROMOMETHANE						0 U				0.0001 U		
CHLOROETHANE					0 U					0.0001 U		
CHLOROFORM				0.003 J							0.0008 U	
CYCLOHEXANE, METHYL-			0.031 J									
DICHLOROBROMOMETHANE						0 U				0.0001 U		

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03 CPS-03-011102-1210 1/11/2002	CPS-03 CPS-03-031302-1105 3/13/2002	CPS-03 CPS-03-031302-1140 3/13/2002	CPS-03 CPS-03-040502-1050 4/5/2002	CPS-03 CPS-03-120101 12/1/2001	CPS-03 CPS-3-091994 9/19/1994	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A-020305 2/3/2005	CPS-03A CPS-03A-032411 3/24/2011	CPS-03A CPS-03A-072712 7/27/2012	CPS-03A CPS-03A-091712 9/17/2012	CPS-03A CPS-03A-091809 9/18/2009
DICHLORODIFLUOROMETHANE										0.0001 U		
DIETHYL ETHER								0.00465				
DIMETHYLSULFIDE				0.02 J								
ETHYL METHACRYLATE								0.00291 U				
ETHYLBENZENE				0.049							0.007	
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE								0.00155 U				
M+P-XYLENE									0.1			
METHACRYLONITRILE								0.01065 U				
METHYL ACETATE										0.0003 U		
METHYL ACRYLATE								0.0039 U				
METHYL BROMIDE						0 U				0.0001 U		
METHYL CHLORIDE					0 U					0.0002 U		
METHYL ETHYL KETONE										0.001 U		
METHYL IODIDE								0.01235 U				
METHYL ISOBUTYL KETONE										0.001 U		
METHYL METHACRYLATE								0.00451 U				
METHYLENE BROMIDE								0.00355 U				
METHYLENE CHLORIDE				0.1							0.002 U	
METHYL-T-BUTYL ETHER										0.0005		
NAPHTHALENE										0.0009		
N-BUTYLBENZENE								0.00109 U				
N-PROPYLBENZENE								0.00175 U				
O-XYLENE									0.033			
P-CHLOROTOLUENE								0.01229				
PENTACHLOROETHANE								0.0089 U				
P-ISOPROPYLTOLUENE								0.00164 U				
PROPANENITRILE								0.02705 U				
PROPYLENE (PROPENE)				0.047 J								
SEC-BUTYLBENZENE								0.00215 U				
STYRENE										0.0001 U		
SULFUR DIOXIDE				1.1 J								
t-Butyl Alcohol										0.004 U		
TERT-BUTYLBENZENE								0.00215 U				
TETRACHLOROETHYLENE				0.002 J							0.001 J	
TETRAHYDROFURAN												
TOLUENE				0.33							0.073	
TRANS-1,4-DICHLORO-2-BUTENE								0.00584 U				
TRICHLOROETHYLENE				0.018							0.004 J	
TRICHLOROFLUOROMETHANE						0 U				0.0001 U		
VINYL CHLORIDE				0.011							0.007	
XYLENES,TOTAL				0.21							0.023	

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03 CPS-03-011102-1210 1/11/2002	CPS-03 CPS-03-031302-1105 3/13/2002	CPS-03 CPS-03-031302-1140 3/13/2002	CPS-03 CPS-03-040502-1050 4/5/2002	CPS-03 CPS-03-120101 12/1/2001	CPS-03 CPS-3-091994 9/19/1994	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A-020305 2/3/2005	CPS-03A CPS-03A-032411 3/24/2011	CPS-03A CPS-03A-072712 7/27/2012	CPS-03A CPS-03A-091712 9/17/2012	CPS-03A CPS-03A-091809 9/18/2009
Semivolatile Organics (mg/L)												
1,2-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
2,4,5-TRICHLOROPHENOL												0.0009 U
2,4,6-TRICHLOROPHENOL												0.0009 U
2,4-DICHLOROPHENOL												0.0009 U
2,4-DIMETHYLPHENOL												0.005
2,4-DINITROPHENOL												0.019 U
2,4-DINITROTOLUENE												0.0009 U
2,6-DINITROTOLUENE												0.0009 U
2-CHLORONAPHTHALENE												0.002 U
2-CHLOROPHENOL												0.0009 U
2-METHYL-4,6-DINITROPHENOL												0.005 U
2-METHYLNAPHTHALENE												0.0009 U
2-NITROANILINE												0.0009 U
2-NITROPHENOL												0.0009 U
3,3-DICHLOROBENZIDINE												0.002 U
3-NITROANILINE												0.0009 U
4-BROMOPHENYL PHENYL ETHER												0.0009 U
4-CHLORO-3-METHYLPHENOL												0.0009 U
4-CHLOROANILINE												0.0009 U
4-CHLOROPHENYL PHENYL ETHER												0.002 U
4-NITROANILINE												0.0009 U
4-NITROPHENOL												0.009 U
ACENAPHTHENE												0.0009 U
ACENAPHTHYLENE												0.0009 U
ANILINE								0.00378				
ANTHRACENE												0.0009 U
AZOBENZENE								0.00064 U				
BENZIDINE								0.02 U				
BENZO(A)ANTHRACENE												0.0009 U
BENZO(A)PYRENE												0.0009 U
BENZO(B)FLUORANTHENE												0.0009 U
Benzo(b+k)Fluoranthene								0.00069 U				
BENZO(GHI)PERYLENE												0.0009 U
BENZO(K)FLUORANTHENE												0.0009 U
BENZOIC ACID								0.00318				
BENZYL ALCOHOL								0.00122 U				
BENZYL BUTYL PHTHALATE												0.002
BIS(2-CHLOROETHOXY) METHANE												0.0009 U
BIS(2-CHLOROETHYL) ETHER												0.0009 U
Bis(2-chloroisopropyl) ether								0.00164 U				
BIS(2-CHLOROISOPROPYL)ETHER												0.0009 U
BIS(2-ETHYLHEXYL)PHTHALATE												0.018
CARBAZOLE												0.0009 U
CHRYSENE												0.0009 U
CRESOL,O												0.0009 U
CRESOL,P												0.002 U

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03 CPS-03-011102-1210 1/11/2002	CPS-03 CPS-03-031302-1105 3/13/2002	CPS-03 CPS-03-031302-1140 3/13/2002	CPS-03 CPS-03-040502-1050 4/5/2002	CPS-03 CPS-03-120101 12/1/2001	CPS-03 CPS-3-091994 9/19/1994	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A-020305 2/3/2005	CPS-03A CPS-03A-032411 3/24/2011	CPS-03A CPS-03A-072712 7/27/2012	CPS-03A CPS-03A-091712 9/17/2012	CPS-03A CPS-03A-091809 9/18/2009
DIBENZO(A,H)ANTHRACENE												0.0009 U
DIBENZOFURAN												0.0009 U
DIETHYL PHTHALATE												0.002 U
DIMETHYL PHTHALATE												0.002 U
DI-N-BUTYL PHTHALATE												0.025
DI-N-OCTYL PHTHALATE												0.002 U
FLUORANTHENE												0.0009 U
FLUORENE												0.0009 U
HEXACHLOROBENZENE												0.0009 U
HEXACHLOROBUTADIENE												0.0009 U
HEXACHLOROCYCLOPENTADIENE												0.005 U
HEXACHLOROETHANE												0.0009 U
INDENO(1,2,3-CD)PYRENE												0.0009 U
ISOPHORONE												0.0009 U
NITROBENZENE												0.0009 U
N-NITROSODIMETHYLAMINE								0.01 U				
N-NITROSODI-N-PROPYLAMINE												0.0009 U
N-NITROSODIPHENYLAMINE												0.002 U
PENTACHLOROPHENOL												0.003 U
PHENANTHRENE												0.0009 U
PHENOL												0.0009 U
PYRENE												0.0009 U
PYRIDINE								0.01 U				
Pesticide/PCBs (mg/L)												
4,4'-DDD		0.0000038 U										
4,4'-DDE		0.0000038 U										
4,4'-DDT		0.00001 J										
ALDRIN		0.000003 U										
ALPHA-BHC		0.0000019 U										
BETA-BHC		0.000002 U										
CHLORDANE		0.00004 U										
DELTA-BHC		0.000008 U										
DIELDRIN		0.0000038 U										
ENDOSULFAN I		0.0000038 U										
ENDOSULFAN II		0.00003 J										
ENDOSULFAN SULFATE		0.000008 U										
ENDRIN		0.0000038 U										
ENDRIN ALDEHYDE		0.0000077 U										
GAMMA-BHC (LINDANE)		0.00002										
HEPTACHLOR		0.000005 U										
HEPTACHLOR EPOXIDE		0.00001										
PCB-1016 (AROCLOR 1016)		0.00009 U										
PCB-1221 (AROCLOR 1221)		0.00019 U										
PCB-1232 (AROCLOR 1232)		0.00009 U										
PCB-1242 (AROCLOR 1242)		0.00009 U										
PCB-1248 (AROCLOR 1248)		0.00009 U										
PCB-1254 (AROCLOR 1254)		0.00009 U										
PCB-1260 (AROCLOR 1260)		0.00009 U										
TOXAPHENE		0.00029 U										

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03 CPS-03-011102-1210 1/11/2002	CPS-03 CPS-03-031302-1105 3/13/2002	CPS-03 CPS-03-031302-1140 3/13/2002	CPS-03 CPS-03-040502-1050 4/5/2002	CPS-03 CPS-03-120101 12/1/2001	CPS-03 CPS-3-091994 9/19/1994	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A-020305 2/3/2005	CPS-03A CPS-03A-032411 3/24/2011	CPS-03A CPS-03A-072712 7/27/2012	CPS-03A CPS-03A-091712 9/17/2012	CPS-03A CPS-03A-091809 9/18/2009
Metals, Total (mg/L)												
ALUMINUM						1.8						
ANTIMONY						0.005 U						
ARSENIC						0.0081						
BARIUM						0.2 U						
BERYLLIUM						0.005 U						
CADMIUM						0.004 U						
CALCIUM						31						
CHROMIUM						0.01 U						
COBALT						0.05 U						
COPPER						0.025 U						
IRON						51						
LEAD						0.003 U						
MAGNESIUM						5 U						
MANGANESE						0.36						
MERCURY						0.0002 U						
NICKEL						0.04 U						
POTASSIUM						5 U						
SELENIUM						0.005 U						
SILVER						0.01 U						
SODIUM						43						
THALLIUM						0.005 U						
VANADIUM						0.05 U						
ZINC						0.02 U						
Metals, Dissolved (mg/L)												
ALUMINUM						0.2 U			5.72			
ANTIMONY						0.005 U			0.01 U			
ARSENIC						0.007			0.0098 U			
BARIUM						0.2 U			0.0356			
BERYLLIUM						0.005 U			0.0024			
CADMIUM						0.004 U			0.002 U			
CALCIUM						31			14.2			
CHROMIUM						0.01 U			0.0034 U			
COBALT						0.05 U			0.0376			
COPPER						0.025 U			0.0063			
IRON						53			0.76			
LEAD						0.003 U			0.0069 U			
MAGNESIUM						5 U			4.47			
MANGANESE						0.36			0.485			
MERCURY						0.0002 U			0.00005 U			
NICKEL						0.04 U			0.0407			
POTASSIUM						5 U			2.91			
SELENIUM						0.005 U			0.0089 U			
SILVER						0.01 U			0.0023 U			
SODIUM						44			35.3			
THALLIUM						0.005 U			0.014 U			
VANADIUM						0.05 U			0.0025 U			
ZINC						0.02 U			0.133			

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03 CPS-03- 011102-1210 1/11/2002	CPS-03 CPS-03- 031302-1105 3/13/2002	CPS-03 CPS-03- 031302-1140 3/13/2002	CPS-03 CPS-03- 040502-1050 4/5/2002	CPS-03 CPS-03- 120101 12/1/2001	CPS-03 CPS-3-091994 9/19/1994	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A- 020305 2/3/2005	CPS-03A CPS-03A- 032411 3/24/2011	CPS-03A CPS-03A- 072712 7/27/2012	CPS-03A CPS-03A- 091712 9/17/2012	CPS-03A CPS-03A- 091809 9/18/2009
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon												
CHEMICAL OXYGEN DEMAND												
CHLORIDE (g/L)												
CHLORIDE (mg/L)												
FERROUS IRON												
FREE CARBON DIOXIDE												
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1												
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1												
Nitrate (as N), Nitrogen, Nitrite												
Nitrate, Nitrogen NO2, NO3												
PH												
SULFATE (g/L)												
SULFATE (mg/L)												
Sulfide												
TOTAL DISSOLVED SOLIDS												
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON												
TOTAL SUSPENDED SOLIDS												
CONDUCTIVITY (uS/cm)												
DISSOLVED OXYGEN												
PH (pH Units)												
TEMPERATURE (°C)												
Dissolved Gases (mg/L)												
ETHANE												
ETHYLENE												
ETHYLENIMINE				2 U			0.5 U					
METHANE												
PROPANE												

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Prepared by / Date: KJC 11/12/13
Checked by / Date: KMW 12/9/2013

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03A CPS-03A-121605 12/16/2005	CPS-03A CPS-3A-030708 3/7/2008	CPS-03A CPS-3A-071211 7/12/2011	PW-1 PW-1-100898 10/8/1998	PW-1 PW-1-120392 12/3/1992	RS-1A RS-1A-051805 5/18/2005	RS-1A RS-1A-091508 9/15/2008	RS-1A RS-1A-110405 11/4/2005	RS-1A RS-1A-121504 12/15/2004	RS-1E RS-1E-051805 5/18/2005	RS-1E RS-1E-091508 9/15/2008	RS-1E RS-1E-110405 11/4/2005
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE									0.0001 U			
1,1,1-TRICHLOROETHANE				0.00013 U					0.0001 U			
1,1,2,2-TETRACHLOROETHANE				0.0106					0.0005			
1,1,2-TRICHLOROETHANE				0.00029 U					0.0001 U			
1,1-DICHLOROETHANE				0.00039 U					0.0002			
1,1-DICHLOROETHYLENE				0.00039 U					0.0001 U			
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE				0.005 U								
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE				0.0039					0.0014			
1,2-DIBROMO-3-CHLOROPROPANE												
1,2-DIBROMOETHANE				0.005 U								
1,2-DICHLOROBENZENE				0.00056 U					0.0006			
1,2-DICHLOROETHANE				0.0222					0.0027			
1,2-DICHLOROETHYLENE												
1,2-DICHLOROPROPANE					0 U				0.0001 U			
1,2-TRANS-DICHLOROETHYLENE				0.0006 U					0.0005			
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE					0 U				0.0001 U			
1,3-DICHLOROBENZENE				0.0006 U					0.0001			
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE					0 U				0.0001 U			
1,4-DICHLOROBENZENE				0.00048 U					0.0002			
1,4-DIOXANE												
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER					0 U							
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
3-METHYL HEXANE												
ACETONE				0.005 U					0.003 U			
ACROLEIN					0 U							
ACRYLONITRILE					0 U				0.002 U			
BENZENE				0.00028 U					0.0006			
BROMOBENZENE												
BROMOCHLOROMETHANE									0.0001 U			
BROMOFORM					0 U				0.0001 U			
CARBON DISULFIDE												
CARBON TETRACHLORIDE				0.00012 U					0.0001 U			
CHLOROBENZENE				0.00071 U					0.0005			
CHLORODIBROMOMETHANE					0 U				0.0001 U			
CHLOROETHANE					0 U				0.0002 U			
CHLOROFORM				0.0009 U					0.0003			
CYCLOHEXANE, METHYL-												
DICHLOROBROMOMETHANE					0 U				0.0001 U			

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03A CPS-03A-121605 12/16/2005	CPS-03A CPS-3A-030708 3/7/2008	CPS-03A CPS-3A-071211 7/12/2011	PW-1 PW-1-100898 10/8/1998	PW-1 PW-1-120392 12/3/1992	RS-1A RS-1A-051805 5/18/2005	RS-1A RS-1A-091508 9/15/2008	RS-1A RS-1A-110405 11/4/2005	RS-1A RS-1A-121504 12/15/2004	RS-1E RS-1E-051805 5/18/2005	RS-1E RS-1E-091508 9/15/2008	RS-1E RS-1E-110405 11/4/2005
DICHLORODIFLUOROMETHANE												
DIETHYL ETHER												
DIMETHYLSULFIDE												
ETHYL METHACRYLATE												
ETHYLBENZENE				0.00017 U					0.0001 U			
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE				0.001 U								
METHACRYLONITRILE												
METHYL ACETATE												
METHYL ACRYLATE												
METHYL BROMIDE					0 U				0.0001 U			
METHYL CHLORIDE					0 U				0.0002 U			
METHYL ETHYL KETONE												
METHYL IODIDE												
METHYL ISOBUTYL KETONE												
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE				0.00061 U					0.0005			
METHYL-T-BUTYL ETHER												
NAPHTHALENE												
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE				0.001 U					0.0001 U			
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
PROPYLENE (PROPENE)												
SEC-BUTYLBENZENE												
STYRENE												
SULFUR DIOXIDE												
t-Butyl Alcohol												
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE				0.00092					0.0002			
TETRAHYDROFURAN												
TOLUENE				0.0005 U					0.0001 U			
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE				0.0062					0.0017			
TRICHLOROFLUOROMETHANE					0 U							
VINYL CHLORIDE				0.00039 U					0.0004			
XYLENES,TOTAL				0.001 U					0.0002 U			

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Laboratory Analytical Data - Groundwater within CPS Plume
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Old Bridge, NJ

chemical_name	CPS-03A CPS-03A-121605 12/16/2005	CPS-03A CPS-3A-030708 3/7/2008	CPS-03A CPS-3A-071211 7/12/2011	PW-1 PW-1-100898 10/8/1998	PW-1 PW-1-120392 12/3/1992	RS-1A RS-1A-051805 5/18/2005	RS-1A RS-1A-091508 9/15/2008	RS-1A RS-1A-110405 11/4/2005	RS-1A RS-1A-121504 12/15/2004	RS-1E RS-1E-051805 5/18/2005	RS-1E RS-1E-091508 9/15/2008	RS-1E RS-1E-110405 11/4/2005
Semivolatile Organics (mg/L)												
1,2-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
2,4,5-TRICHLOROPHENOL												
2,4,6-TRICHLOROPHENOL												
2,4-DICHLOROPHENOL												
2,4-DIMETHYLPHENOL												
2,4-DINITROPHENOL												
2,4-DINITROTOLUENE												
2,6-DINITROTOLUENE												
2-CHLORONAPHTHALENE												
2-CHLOROPHENOL												
2-METHYL-4,6-DINITROPHENOL												
2-METHYLNAPHTHALENE												
2-NITROANILINE												
2-NITROPHENOL												
3,3-DICHLOROBENZIDINE												
3-NITROANILINE												
4-BROMOPHENYL PHENYL ETHER												
4-CHLORO-3-METHYLPHENOL												
4-CHLOROANILINE												
4-CHLOROPHENYL PHENYL ETHER												
4-NITROANILINE												
4-NITROPHENOL												
ACENAPHTHENE												
ACENAPHTHYLENE												
ANILINE												
ANTHRACENE												
AZOBENZENE												
BENZIDINE												
BENZO(A)ANTHRACENE												
BENZO(A)PYRENE												
BENZO(B)FLUORANTHENE												
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE												
BENZO(K)FLUORANTHENE												
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE												
BIS(2-CHLOROETHOXY) METHANE												
BIS(2-CHLOROETHYL) ETHER												
Bis(2-chloroisopropyl) ether												
BIS(2-CHLOROISOPROPYL)ETHER												
BIS(2-ETHYLHEXYL)PHTHALATE												
CARBAZOLE												
CHRYSENE												
CRESOL,O												
CRESOL,P												

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
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Old Bridge, NJ

chemical_name	CPS-03A CPS-03A-121605 12/16/2005	CPS-03A CPS-3A-030708 3/7/2008	CPS-03A CPS-3A-071211 7/12/2011	PW-1 PW-1-100898 10/8/1998	PW-1 PW-1-120392 12/3/1992	RS-1A RS-1A-051805 5/18/2005	RS-1A RS-1A-091508 9/15/2008	RS-1A RS-1A-110405 11/4/2005	RS-1A RS-1A-121504 12/15/2004	RS-1E RS-1E-051805 5/18/2005	RS-1E RS-1E-091508 9/15/2008	RS-1E RS-1E-110405 11/4/2005
DIBENZO(A,H)ANTHRACENE												
DIBENZOFURAN												
DIETHYL PHTHALATE												
DIMETHYL PHTHALATE												
DI-N-BUTYL PHTHALATE												
DI-N-OCTYL PHTHALATE												
FLUORANTHENE												
FLUORENE												
HEXACHLOROBENZENE												
HEXACHLOROBUTADIENE												
HEXACHLOROCYCLOPENTADIENE												
HEXACHLOROETHANE												
INDENO(1,2,3-CD)PYRENE												
ISOPHORONE												
NITROBENZENE												
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE												
N-NITROSODIPHENYLAMINE												
PENTACHLOROPHENOL												
PHENANTHRENE												
PHENOL												
PYRENE												
PYRIDINE												
Pesticide/PCBs (mg/L)												
4,4'-DDD												
4,4'-DDE												
4,4'-DDT												
ALDRIN												
ALPHA-BHC												
BETA-BHC												
CHLORDANE												
DELTA-BHC												
DIELDRIN												
ENDOSULFAN I												
ENDOSULFAN II												
ENDOSULFAN SULFATE												
ENDRIN												
ENDRIN ALDEHYDE												
GAMMA-BHC (LINDANE)												
HEPTACHLOR												
HEPTACHLOR EPOXIDE												
PCB-1016 (AROCLOR 1016)												
PCB-1221 (AROCLOR 1221)												
PCB-1232 (AROCLOR 1232)												
PCB-1242 (AROCLOR 1242)												
PCB-1248 (AROCLOR 1248)												
PCB-1254 (AROCLOR 1254)												
PCB-1260 (AROCLOR 1260)												
TOXAPHENE												

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chemical_name	CPS-03A CPS-03A-121605 12/16/2005	CPS-03A CPS-3A-030708 3/7/2008	CPS-03A CPS-3A-071211 7/12/2011	PW-1 PW-1-100898 10/8/1998	PW-1 PW-1-120392 12/3/1992	RS-1A RS-1A-051805 5/18/2005	RS-1A RS-1A-091508 9/15/2008	RS-1A RS-1A-110405 11/4/2005	RS-1A RS-1A-121504 12/15/2004	RS-1E RS-1E-051805 5/18/2005	RS-1E RS-1E-091508 9/15/2008	RS-1E RS-1E-110405 11/4/2005
Metals, Total (mg/L)												
ALUMINUM			6.82									
ANTIMONY			0.0058 U									
ARSENIC			0.0051 U									
BARIUM			0.0385									
BERYLLIUM			0.0021									
CADMIUM			0.00055				0.613				0 U	
CALCIUM			14.6									
CHROMIUM			0.0012									
COBALT			0.0407									
COPPER			0.0038				8				0.447	
IRON			5.21									
LEAD			0.0033				0 U				0 U	
MAGNESIUM			5.04									
MANGANESE			0.513									
MERCURY			0.000026 U									
NICKEL			0.0457									
POTASSIUM			2.86									
SELENIUM			0.0069 U									
SILVER			0.00091 U									
SODIUM			33.8									
THALLIUM			0.0042 U									
VANADIUM			0.0135									
ZINC			0.148				914				69.6	
Metals, Dissolved (mg/L)												
ALUMINUM												
ANTIMONY												
ARSENIC												
BARIUM												
BERYLLIUM												
CADMIUM												
CALCIUM												
CHROMIUM												
COBALT												
COPPER												
IRON												
LEAD												
MAGNESIUM												
MANGANESE												
MERCURY												
NICKEL												
POTASSIUM												
SELENIUM												
SILVER												
SODIUM												
THALLIUM												
VANADIUM												
ZINC												

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	CPS-03A CPS-03A-121605 12/16/2005	CPS-03A CPS-3A-030708 3/7/2008	CPS-03A CPS-3A-071211 7/12/2011	PW-1 PW-1-100898 10/8/1998	PW-1 PW-1-120392 12/3/1992	RS-1A RS-1A-051805 5/18/2005	RS-1A RS-1A-091508 9/15/2008	RS-1A RS-1A-110405 11/4/2005	RS-1A RS-1A-121504 12/15/2004	RS-1E RS-1E-051805 5/18/2005	RS-1E RS-1E-091508 9/15/2008	RS-1E RS-1E-110405 11/4/2005
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND			2.7									
Carbon		35.1										
CHEMICAL OXYGEN DEMAND			31									
CHLORIDE (g/L)						0.283				0.322		
CHLORIDE (mg/L)		59.4										
FERROUS IRON		9.1										
FREE CARBON DIOXIDE		0.46 U										
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1			0.46 U									
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1			0.46 U									
Nitrate (as N), Nitrogen, Nitrite		0.015 U										
Nitrate, Nitrogen NO2, NO3		0.051										
PH		4.3						3.75				3.66
SULFATE (g/L)						3.24				4.26		
SULFATE (mg/L)			128									
Sulfide		10.2										
TOTAL DISSOLVED SOLIDS			262									
TOTAL HARDNESS-CALCIUM CARBONATE			67.1									
TOTAL ORGANIC CARBON			5									
TOTAL SUSPENDED SOLIDS			4.4									
CONDUCTIVITY (uS/cm)	509											
DISSOLVED OXYGEN	2.57											
PH (pH Units)												
TEMPERATURE (°C)	15											
Dissolved Gases (mg/L)												
ETHANE		0.025										
ETHYLENE		0.024										
ETHYLENIMINE												
METHANE		0.46										
PROPANE		0.01										

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	RS-1E RS-1E-121504 12/15/2004	RS-2A RS-2A-032311 3/23/2011	RS-2A RS-2A-110405 11/4/2005	RS-2A RS-2A-121504 12/15/2004	RS-2B RS-2B-030103 3/1/2003	RS-2B RS-2B-072612 7/26/2012	RS-2B RS-2B-091508 9/15/2008	RS-2B RS-2B-121510 12/15/2010	RS-2B RS-2B-121605 12/16/2005	RS-2C RS-2C-030103 3/1/2003	RS-2C RS-2C-072612 7/26/2012	RS-2C RS-2C-091508 9/15/2008
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE	0.0001 U			0.0001 U				0.0001 U				
1,1,1-TRICHLOROETHANE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
1,1,2,2-TETRACHLOROETHANE	0.0003	0.0011				0.0007					0.0011	
1,1,2-TRICHLOROETHANE	0.0001 U	0.0004				0.0005					0.0006	
1,1-DICHLOROETHANE	0.0004	0.0002				0.0002					0.0004	
1,1-DICHLOROETHYLENE	0.0001 U	0.0008				0.0008					0.0011	
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE		0.018				0.018					0.037	
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE	0.0008	0.018				0.013					0.024	
1,2-DIBROMO-3-CHLOROPROPANE		0.0002 U										
1,2-DIBROMOETHANE		0.0001 U										
1,2-DICHLOROBENZENE	0.0009	0.0069				0.0088					0.028	
1,2-DICHLOROETHANE	0.0066	0.0086				0.008					0.0072	
1,2-DICHLOROETHYLENE					0.0286					0.079		
1,2-DICHLOROPROPANE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
1,2-TRANS-DICHLOROETHYLENE	0.0002	0.0032				0.0023					0.0048	
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
1,3-DICHLOROBENZENE	0.0001 U	0.0012				0.0011					0.0096	
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
1,4-DICHLOROBENZENE	0.0001	0.0067				0.0054					0.03	
1,4-DIOXANE		0.02 U				0.02 U					0.04 U	
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
3-METHYL HEXANE												
ACETONE	0.003 U	0.0047				0.003 U					0.006 U	
ACROLEIN		0.004 U				0.004 U					0.008 U	
ACRYLONITRILE	0.002 U	0.001 U				0.001 U					0.002 U	
BENZENE	0.0006	0.021				0.02					0.059	
BROMOBENZENE												
BROMOCHLOROMETHANE	0.0001 U			0.0001 U				0.0001 U				
BROMOFORM	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
CARBON DISULFIDE		0.0004 U				0.0004 U					0.0008 U	
CARBON TETRACHLORIDE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
CHLOROBENZENE	0.0002	0.082				0.086					0.33	
CHLORODIBROMOMETHANE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
CHLOROETHANE	0.0002 U	0.0004				0.0003					0.0002 U	
CHLOROFORM	0.0009	0.0003				0.0003					0.0002 U	
CYCLOHEXANE, METHYL-												
DICHLOROBROMOMETHANE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	

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chemical_name	RS-1E RS-1E-121504 12/15/2004	RS-2A RS-2A-032311 3/23/2011	RS-2A RS-2A-110405 11/4/2005	RS-2A RS-2A-121504 12/15/2004	RS-2B RS-2B-030103 3/1/2003	RS-2B RS-2B-072612 7/26/2012	RS-2B RS-2B-091508 9/15/2008	RS-2B RS-2B-121510 12/15/2010	RS-2B RS-2B-121605 12/16/2005	RS-2C RS-2C-030103 3/1/2003	RS-2C RS-2C-072612 7/26/2012	RS-2C RS-2C-091508 9/15/2008
DICHLORODIFLUOROMETHANE		0.0001 U				0.0001 U					0.0002 U	
DIETHYL ETHER												
DIMETHYLSULFIDE												
ETHYL METHACRYLATE												
ETHYLBENZENE	0.0001 U	0.007				0.0053					0.034	
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE								0.0032				
METHACRYLONITRILE												
METHYL ACETATE		0.0003 U				0.0003 U					0.0006 U	
METHYL ACRYLATE												
METHYL BROMIDE	0.0001 U	0.0001 U				0.0001 U					0.0002 U	
METHYL CHLORIDE	0.0002 U	0.0008 U				0.0004					0.0004 U	
METHYL ETHYL KETONE		0.001 U				0.001 U					0.002 U	
METHYL IODIDE												
METHYL ISOBUTYL KETONE		0.001 U				0.001 U					0.002 U	
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE	0.0022	0.0008				0.0002 U					0.0004 U	
METHYL-T-BUTYL ETHER		0.0014				0.0005					0.0004	
NAPHTHALENE		0.0018				0.0023					0.0017	
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE	0.0001 U			0.0005				0.0056				
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
PROPYLENE (PROPENE)												
SEC-BUTYLBENZENE												
STYRENE		0.0001 U				0.0001 U					0.0002 U	
SULFUR DIOXIDE												
t-Butyl Alcohol		0.0053				0.005					0.0084	
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE	0.0002	0.0001				0.0001 U					0.0002 U	
TETRAHYDROFURAN												
TOLUENE	0.0001 U	0.0073				0.0075					0.004	
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE	0.0012	0.0022				0.0019					0.0026	
TRICHLOROFLUOROMETHANE		0.0001 U				0.0001 U					0.0002 U	
VINYL CHLORIDE	0.0001	0.0021				0.0019					0.0026	
XYLENES,TOTAL	0.0002 U	0.008				0.0089					0.038	

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chemical_name	RS-1E RS-1E-121504 12/15/2004	RS-2A RS-2A-032311 3/23/2011	RS-2A RS-2A-110405 11/4/2005	RS-2A RS-2A-121504 12/15/2004	RS-2B RS-2B-030103 3/1/2003	RS-2B RS-2B-072612 7/26/2012	RS-2B RS-2B-091508 9/15/2008	RS-2B RS-2B-121510 12/15/2010	RS-2B RS-2B-121605 12/16/2005	RS-2C RS-2C-030103 3/1/2003	RS-2C RS-2C-072612 7/26/2012	RS-2C RS-2C-091508 9/15/2008
Semivolatile Organics (mg/L)												
1,2-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
2,4,5-TRICHLOROPHENOL												
2,4,6-TRICHLOROPHENOL												
2,4-DICHLOROPHENOL												
2,4-DIMETHYLPHENOL												
2,4-DINITROPHENOL												
2,4-DINITROTOLUENE												
2,6-DINITROTOLUENE												
2-CHLORONAPHTHALENE												
2-CHLOROPHENOL												
2-METHYL-4,6-DINITROPHENOL												
2-METHYLNAPHTHALENE												
2-NITROANILINE												
2-NITROPHENOL												
3,3-DICHLOROBENZIDINE												
3-NITROANILINE												
4-BROMOPHENYL PHENYL ETHER												
4-CHLORO-3-METHYLPHENOL												
4-CHLOROANILINE												
4-CHLOROPHENYL PHENYL ETHER												
4-NITROANILINE												
4-NITROPHENOL												
ACENAPHTHENE												
ACENAPHTHYLENE												
ANILINE												
ANTHRACENE												
AZOBENZENE												
BENZIDINE												
BENZO(A)ANTHRACENE												
BENZO(A)PYRENE												
BENZO(B)FLUORANTHENE												
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE												
BENZO(K)FLUORANTHENE												
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE												
BIS(2-CHLOROETHOXY) METHANE												
BIS(2-CHLOROETHYL) ETHER												
Bis(2-chloroisopropyl) ether												
BIS(2-CHLOROISOPROPYL)ETHER												
BIS(2-ETHYLHEXYL)PHTHALATE												
CARBAZOLE												
CHRYSENE												
CRESOL,O												
CRESOL,P												

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Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	RS-1E RS-1E-121504 12/15/2004	RS-2A RS-2A-032311 3/23/2011	RS-2A RS-2A-110405 11/4/2005	RS-2A RS-2A-121504 12/15/2004	RS-2B RS-2B-030103 3/1/2003	RS-2B RS-2B-072612 7/26/2012	RS-2B RS-2B-091508 9/15/2008	RS-2B RS-2B-121510 12/15/2010	RS-2B RS-2B-121605 12/16/2005	RS-2C RS-2C-030103 3/1/2003	RS-2C RS-2C-072612 7/26/2012	RS-2C RS-2C-091508 9/15/2008
DIBENZO(A,H)ANTHRACENE												
DIBENZOFURAN												
DIETHYL PHTHALATE												
DIMETHYL PHTHALATE												
DI-N-BUTYL PHTHALATE												
DI-N-OCTYL PHTHALATE												
FLUORANTHENE												
FLUORENE												
HEXACHLOROBENZENE												
HEXACHLOROBUTADIENE												
HEXACHLOROCYCLOPENTADIENE												
HEXACHLOROETHANE												
INDENO(1,2,3-CD)PYRENE												
ISOPHORONE												
NITROBENZENE												
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE												
N-NITROSODIPHENYLAMINE												
PENTACHLOROPHENOL												
PHENANTHRENE												
PHENOL												
PYRENE												
PYRIDINE												
Pesticide/PCBs (mg/L)												
4,4'-DDD												
4,4'-DDE												
4,4'-DDT												
ALDRIN												
ALPHA-BHC												
BETA-BHC												
CHLORDANE												
DELTA-BHC												
DIELDRIN												
ENDOSULFAN I												
ENDOSULFAN II												
ENDOSULFAN SULFATE												
ENDRIN												
ENDRIN ALDEHYDE												
GAMMA-BHC (LINDANE)												
HEPTACHLOR												
HEPTACHLOR EPOXIDE												
PCB-1016 (AROCLOR 1016)												
PCB-1221 (AROCLOR 1221)												
PCB-1232 (AROCLOR 1232)												
PCB-1242 (AROCLOR 1242)												
PCB-1248 (AROCLOR 1248)												
PCB-1254 (AROCLOR 1254)												
PCB-1260 (AROCLOR 1260)												
TOXAPHENE												

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Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
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Old Bridge, NJ

chemical_name	RS-1E RS-1E-121504 12/15/2004	RS-2A RS-2A-032311 3/23/2011	RS-2A RS-2A-110405 11/4/2005	RS-2A RS-2A-121504 12/15/2004	RS-2B RS-2B-030103 3/1/2003	RS-2B RS-2B-072612 7/26/2012	RS-2B RS-2B-091508 9/15/2008	RS-2B RS-2B-121510 12/15/2010	RS-2B RS-2B-121605 12/16/2005	RS-2C RS-2C-030103 3/1/2003	RS-2C RS-2C-072612 7/26/2012	RS-2C RS-2C-091508 9/15/2008
Metals, Total (mg/L)												
ALUMINUM		10.1										
ANTIMONY		0.01 U										
ARSENIC		0.0098 U										
BARIUM		0.0238										
BERYLLIUM		0.0052										
CADMIUM		0.0463					0.0478					0.088
CALCIUM		23										
CHROMIUM		0.0066										
COBALT		0.0429										
COPPER		123					75					49.7
IRON		19.5										
LEAD		0.0858					0 U					0 U
MAGNESIUM		5.66										
MANGANESE		0.887										
MERCURY		0.00005 U										
NICKEL		0.595										
POTASSIUM		3.54										
SELENIUM		0.0089 U										
SILVER		0.0023 U										
SODIUM		48.7										
THALLIUM		0.014 U										
VANADIUM		0.129										
ZINC		36.6					54.5					18.4
Metals, Dissolved (mg/L)												
ALUMINUM		10.1										
ANTIMONY		0.01 U										
ARSENIC		0.01										
BARIUM		0.0257										
BERYLLIUM		0.005										
CADMIUM		0.047										
CALCIUM		22.6										
CHROMIUM		0.0065										
COBALT		0.0436										
COPPER		121										
IRON		20.5										
LEAD		0.0959										
MAGNESIUM		5.64										
MANGANESE		0.893										
MERCURY		0.00005 U										
NICKEL		0.608										
POTASSIUM		3.57										
SELENIUM		0.0089 U										
SILVER		0.0023 U										
SODIUM		48.5										
THALLIUM		0.014 U										
VANADIUM		0.13										
ZINC		36.7										

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Old Bridge, NJ

chemical_name	RS-1E RS-1E-121504 12/15/2004	RS-2A RS-2A-032311 3/23/2011	RS-2A RS-2A-110405 11/4/2005	RS-2A RS-2A-121504 12/15/2004	RS-2B RS-2B-030103 3/1/2003	RS-2B RS-2B-072612 7/26/2012	RS-2B RS-2B-091508 9/15/2008	RS-2B RS-2B-121510 12/15/2010	RS-2B RS-2B-121605 12/16/2005	RS-2C RS-2C-030103 3/1/2003	RS-2C RS-2C-072612 7/26/2012	RS-2C RS-2C-091508 9/15/2008
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon												
CHEMICAL OXYGEN DEMAND												
CHLORIDE (g/L)												
CHLORIDE (mg/L)												
FERROUS IRON												
FREE CARBON DIOXIDE												
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1												
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1												
Nitrate (as N), Nitrogen, Nitrite												
Nitrate, Nitrogen NO2, NO3												
PH			3.24									
SULFATE (g/L)												
SULFATE (mg/L)												
Sulfide												
TOTAL DISSOLVED SOLIDS												
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON												
TOTAL SUSPENDED SOLIDS												
CONDUCTIVITY (uS/cm)									1206			
DISSOLVED OXYGEN									1.26			
PH (pH Units)									4.64			
TEMPERATURE (°C)									12			
Dissolved Gases (mg/L)												
ETHANE												
ETHYLENE												
ETHYLENIMINE												
METHANE												
PROPANE												

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

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Laboratory Analytical Data - Groundwater within CPS Plume
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CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	RS-2C RS-2C-091809 9/18/2009	RS-2C RS-2C-121510 12/15/2010	RS-2C RS-2C-121605 12/16/2005	RW-1 RW-1-020990 2/9/1990	RW-2 RW-2-031208 3/12/2008	RW-2 RW-2-032211 3/22/2011	RW-2 RW-2-090102 9/1/2002	RW-2 RW-2-090705 9/7/2005	RW-2 RW-2-092111 9/21/2011	RW-2 RW-2-121505 12/15/2005	RW-4 RW-4-030198 3/1/1998	RW-4 RW-4-061501 6/15/2001
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE		0.0005 U				0.0001 U						
1,1,1-TRICHLOROETHANE									0.0001 U			
1,1,2,2-TETRACHLOROETHANE									0.0001 U			
1,1,2-TRICHLOROETHANE									0.0001 U			
1,1-DICHLOROETHANE									0.0001 U			
1,1-DICHLOROETHYLENE									0.0001 U			
1,1-DICHLOROPROPYLENE												
1,2,3-TRICHLOROBENZENE												
1,2,3-TRICHLOROPROPANE												
1,2,4-TRICHLOROBENZENE									0.0001 U			
1,2,4-TRIMETHYLBENZENE												
1,2-CIS-DICHLOROETHYLENE									0.0001 U			
1,2-DIBROMO-3-CHLOROPROPANE						0.0002 U						
1,2-DIBROMOETHANE						0.0001 U						
1,2-DICHLOROBENZENE									0.0001 U			
1,2-DICHLOROETHANE									0.0001 U			
1,2-DICHLOROETHYLENE							0.0008					
1,2-DICHLOROPROPANE									0.0001 U			
1,2-TRANS-DICHLOROETHYLENE									0.0001 U			
1,3,5-TRIMETHYLBENZENE												
1,3-CIS-DICHLOROPROPYLENE									0.0001 U			
1,3-DICHLOROBENZENE									0.0001 U			
1,3-DICHLOROPROPANE												
1,3-TRANS-DICHLOROPROPYLENE									0.0001 U			
1,4-DICHLOROBENZENE									0.0001 U			
1,4-DIOXANE									0.02 U			
1-CHLOROBUTANE												
2,2-DICHLOROPROPANE												
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE												
2-HEXANONE												
3-CHLOROPROPENE												
3-METHYL HEXANE												
ACETONE									0.003 U			
ACROLEIN									0.004 U			
ACRYLONITRILE									0.001 U			
BENZENE				0.016					0.0001 U		0.002	
BROMOBENZENE												
BROMOCHLOROMETHANE		0.0005 U				0.0001 U						
BROMOFORM									0.0001 U			
CARBON DISULFIDE									0.0004 U			
CARBON TETRACHLORIDE									0.0001 U			
CHLOROBENZENE				0.16					0.0001 U		0.003	
CHLORODIBROMOMETHANE									0.0001 U			
CHLOROETHANE									0.0001 U			
CHLOROFORM									0.0001 U			
CYCLOHEXANE, METHYL-												
DICHLOROBROMOMETHANE									0.0001 U			

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chemical_name	RS-2C RS-2C-091809 9/18/2009	RS-2C RS-2C-121510 12/15/2010	RS-2C RS-2C-121605 12/16/2005	RW-1 RW-1-020990 2/9/1990	RW-2 RW-2-031208 3/12/2008	RW-2 RW-2-032211 3/22/2011	RW-2 RW-2-090102 9/1/2002	RW-2 RW-2-090705 9/7/2005	RW-2 RW-2-092111 9/21/2011	RW-2 RW-2-121505 12/15/2005	RW-4 RW-4-030198 3/1/1998	RW-4 RW-4-061501 6/15/2001
DICHLORODIFLUOROMETHANE									0.0001 U			
DIETHYL ETHER												
DIMETHYLSULFIDE												
ETHYL METHACRYLATE												
ETHYLBENZENE									0.0001 U			
HEXACHLOROBUTADIENE												
HEXACHLOROETHANE												
ISOPROPYLBENZENE												
M+P-XYLENE		0.0055				0.0002 U						
METHACRYLONITRILE												
METHYL ACETATE									0.0003 U			
METHYL ACRYLATE												
METHYL BROMIDE									0.0001 U			
METHYL CHLORIDE									0.0002 U			
METHYL ETHYL KETONE									0.001 U			
METHYL IODIDE												
METHYL ISOBUTYL KETONE									0.001 U			
METHYL METHACRYLATE												
METHYLENE BROMIDE												
METHYLENE CHLORIDE									0.0002 U			
METHYL-T-BUTYL ETHER									0.0003			
NAPHTHALENE									0.0001 U			
N-BUTYLBENZENE												
N-PROPYLBENZENE												
O-XYLENE		0.013				0.0001 U						
P-CHLOROTOLUENE												
PENTACHLOROETHANE												
P-ISOPROPYLTOLUENE												
PROPANENITRILE												
PROPYLENE (PROPENE)												
SEC-BUTYLBENZENE												
STYRENE									0.0001 U			
SULFUR DIOXIDE												
t-Butyl Alcohol									0.004 U			
TERT-BUTYLBENZENE												
TETRACHLOROETHYLENE									0.0001 U			
TETRAHYDROFURAN												
TOLUENE									0.0001 U			
TRANS-1,4-DICHLORO-2-BUTENE												
TRICHLOROETHYLENE									0.0001 U			
TRICHLOROFLUOROMETHANE									0.0001 U			
VINYL CHLORIDE									0.00008 U			
XYLENES,TOTAL									0.0001 U			

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Baseline Human Health Risk Assessment
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Old Bridge, NJ

chemical_name	RS-2C RS-2C-091809 9/18/2009	RS-2C RS-2C-121510 12/15/2010	RS-2C RS-2C-121605 12/16/2005	RW-1 RW-1-020990 2/9/1990	RW-2 RW-2-031208 3/12/2008	RW-2 RW-2-032211 3/22/2011	RW-2 RW-2-090102 9/1/2002	RW-2 RW-2-090705 9/7/2005	RW-2 RW-2-092111 9/21/2011	RW-2 RW-2-121505 12/15/2005	RW-4 RW-4-030198 3/1/1998	RW-4 RW-4-061501 6/15/2001
Semivolatile Organics (mg/L)												
1,2-DICHLOROBENZENE											0.005	
1,4-DICHLOROBENZENE											0.002	
2,4,5-TRICHLOROPHENOL	0.001 U											
2,4,6-TRICHLOROPHENOL	0.001 U											
2,4-DICHLOROPHENOL	0.001 U											
2,4-DIMETHYLPHENOL	0.003 U											
2,4-DINITROPHENOL	0.019 U											
2,4-DINITROTOLUENE	0.001 U											
2,6-DINITROTOLUENE	0.001 U											
2-CHLORONAPHTHALENE	0.002 U											
2-CHLOROPHENOL	0.001 U											
2-METHYL-4,6-DINITROPHENOL	0.005 U											
2-METHYLNAPHTHALENE	0.001											
2-NITROANILINE	0.001 U											
2-NITROPHENOL	0.001 U											
3,3-DICHLOROBENZIDINE	0.002 U											
3-NITROANILINE	0.001 U											
4-BROMOPHENYL PHENYL ETHER	0.001 U											
4-CHLORO-3-METHYLPHENOL	0.001 U											
4-CHLOROANILINE	0.001 U											
4-CHLOROPHENYL PHENYL ETHER	0.002 U											
4-NITROANILINE	0.001 U											
4-NITROPHENOL	0.01 U											
ACENAPHTHENE	0.001 U											
ACENAPHTHYLENE	0.001 U											
ANILINE												
ANTHRACENE	0.001 U											
AZOBENZENE												
BENZIDINE												
BENZO(A)ANTHRACENE	0.001 U											
BENZO(A)PYRENE	0.001 U											
BENZO(B)FLUORANTHENE	0.001 U											
Benzo(b+k)Fluoranthene												
BENZO(GHI)PERYLENE	0.001 U											
BENZO(K)FLUORANTHENE	0.001 U											
BENZOIC ACID												
BENZYL ALCOHOL												
BENZYL BUTYL PHTHALATE	0.002 U											
BIS(2-CHLOROETHOXY) METHANE	0.001 U											
BIS(2-CHLOROETHYL) ETHER	0.001 U											
Bis(2-chloroisopropyl) ether												
BIS(2-CHLOROISOPROPYL)ETHER	0.001 U											
BIS(2-ETHYLHEXYL)PHTHALATE	0.002 U											
CARBAZOLE	0.001 U											
CHRYSENE	0.001 U											
CRESOL,O	0.002											
CRESOL,P	0.002 U											

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chemical_name	RS-2C RS-2C-091809 9/18/2009	RS-2C RS-2C-121510 12/15/2010	RS-2C RS-2C-121605 12/16/2005	RW-1 RW-1-020990 2/9/1990	RW-2 RW-2-031208 3/12/2008	RW-2 RW-2-032211 3/22/2011	RW-2 RW-2-090102 9/1/2002	RW-2 RW-2-090705 9/7/2005	RW-2 RW-2-092111 9/21/2011	RW-2 RW-2-121505 12/15/2005	RW-4 RW-4-030198 3/1/1998	RW-4 RW-4-061501 6/15/2001
DIBENZO(A,H)ANTHRACENE	0.001 U											
DIBENZOFURAN	0.001 U											
DIETHYL PHTHALATE	0.002 U											
DIMETHYL PHTHALATE	0.002 U											
DI-N-BUTYL PHTHALATE	0.002 U											
DI-N-OCTYL PHTHALATE	0.002 U											
FLUORANTHENE	0.001 U											
FLUORENE	0.001 U											
HEXACHLOROBENZENE	0.001 U											
HEXACHLOROBUTADIENE	0.001 U											
HEXACHLOROCYCLOPENTADIENE	0.005 U											
HEXACHLOROETHANE	0.001 U											
INDENO(1,2,3-CD)PYRENE	0.001 U											
ISOPHORONE	0.001 U											
NITROBENZENE	0.001 U											
N-NITROSODIMETHYLAMINE												
N-NITROSODI-N-PROPYLAMINE	0.001 U											
N-NITROSODIPHENYLAMINE	0.002 U											
PENTACHLOROPHENOL	0.003 U											
PHENANTHRENE	0.001 U											
PHENOL	0.001 U											
PYRENE	0.001 U											
PYRIDINE												
Pesticide/PCBs (mg/L)												
4,4'-DDD												
4,4'-DDE												
4,4'-DDT												
ALDRIN												
ALPHA-BHC												
BETA-BHC												
CHLORDANE												
DELTA-BHC												
DIELDRIN												
ENDOSULFAN I												
ENDOSULFAN II												
ENDOSULFAN SULFATE												
ENDRIN												
ENDRIN ALDEHYDE												
GAMMA-BHC (LINDANE)												
HEPTACHLOR												
HEPTACHLOR EPOXIDE												
PCB-1016 (AROCLOR 1016)												
PCB-1221 (AROCLOR 1221)												
PCB-1232 (AROCLOR 1232)												
PCB-1242 (AROCLOR 1242)												
PCB-1248 (AROCLOR 1248)												
PCB-1254 (AROCLOR 1254)												
PCB-1260 (AROCLOR 1260)												
TOXAPHENE												

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Laboratory Analytical Data - Groundwater within CPS Plume
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CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	RS-2C RS-2C-091809 9/18/2009	RS-2C RS-2C-121510 12/15/2010	RS-2C RS-2C-121605 12/16/2005	RW-1 RW-1-020990 2/9/1990	RW-2 RW-2-031208 3/12/2008	RW-2 RW-2-032211 3/22/2011	RW-2 RW-2-090102 9/1/2002	RW-2 RW-2-090705 9/7/2005	RW-2 RW-2-092111 9/21/2011	RW-2 RW-2-121505 12/15/2005	RW-4 RW-4-030198 3/1/1998	RW-4 RW-4-061501 6/15/2001
Metals, Total (mg/L)												
ALUMINUM						1.85						
ANTIMONY						0.01 U						
ARSENIC						0.0098 U						
BARIUM						0.0719						
BERYLLIUM						0.0014 U						
CADMIUM				0 U		0.002 U						0.0011
CALCIUM						5.98						
CHROMIUM						0.0034 U						
COBALT						0.0174						
COPPER				0 U		0.0027 U						0.18
IRON						6.24						
LEAD				0 U		0.0069 U						0.004
MAGNESIUM						2.26						
MANGANESE						0.246						
MERCURY						0.00005 U						
NICKEL						0.0208						
POTASSIUM						2.15						
SELENIUM						0.0089 U						
SILVER						0.0023 U						
SODIUM						12.4						
THALLIUM						0.014 U						
VANADIUM						0.0025 U						
ZINC				0.203		0.49						0.99
Metals, Dissolved (mg/L)												
ALUMINUM						1.87						
ANTIMONY						0.01 U						
ARSENIC						0.0098 U						
BARIUM						0.0709						
BERYLLIUM						0.0014 U						
CADMIUM						0.002 U						
CALCIUM						5.75						
CHROMIUM						0.0034 U						
COBALT						0.0173						
COPPER						0.0064						
IRON						1.4						
LEAD						0.0069 U						
MAGNESIUM						2.22						
MANGANESE						0.244						
MERCURY						0.00005 U						
NICKEL						0.0201						
POTASSIUM						2.1						
SELENIUM						0.0089 U						
SILVER						0.0023 U						
SODIUM						12.5						
THALLIUM						0.014 U						
VANADIUM						0.0025 U						
ZINC						0.503						

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
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chemical_name	RS-2C RS-2C-091809 9/18/2009	RS-2C RS-2C-121510 12/15/2010	RS-2C RS-2C-121605 12/16/2005	RW-1 RW-1-020990 2/9/1990	RW-2 RW-2-031208 3/12/2008	RW-2 RW-2-032211 3/22/2011	RW-2 RW-2-090102 9/1/2002	RW-2 RW-2-090705 9/7/2005	RW-2 RW-2-092111 9/21/2011	RW-2 RW-2-121505 12/15/2005	RW-4 RW-4-030198 3/1/1998	RW-4 RW-4-061501 6/15/2001
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon					17.8							
CHEMICAL OXYGEN DEMAND												
CHLORIDE (g/L)												
CHLORIDE (mg/L)					26.2							
FERROUS IRON					7.1							
FREE CARBON DIOXIDE					0.46 U							
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1					0.46 U							
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1					0.46 U							
Nitrate (as N), Nitrogen, Nitrite					0.016							
Nitrate, Nitrogen NO2, NO3					0.04 U							
PH					4							
SULFATE (g/L)												
SULFATE (mg/L)					58.5							
Sulfide					0.8							
TOTAL DISSOLVED SOLIDS					99							
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON					1 U							
TOTAL SUSPENDED SOLIDS					3 U							
CONDUCTIVITY (uS/cm)			3.95							83		
DISSOLVED OXYGEN			1.6					6.85				
PH (pH Units)			6.9									
TEMPERATURE (°C)			11							12		
Dissolved Gases (mg/L)												
ETHANE					0.001 U							
ETHYLENE					0.001 U							
ETHYLENIMINE												
METHANE					0.015							
PROPANE					0.001 U							

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	RW-4 RW-4-120197 12/1/1997	RW-5 RW-5-060197 6/1/1997	WE-2R WE-2R 2ft_-031005 3/10/2005 1-3 ft	WE-2R WE-2R 8ft_-031005 3/10/2005 7-9 ft	WE-2R WE-2R-020305 2/3/2005	WE-2R WE-2R-020807 2/8/2007	WE-2R WE-2R-030103 3/1/2003	WE-2R WE-2R-031302-1110 3/13/2002	WE-2R WE-2R-040605 4/6/2005	WE-2R WE-2R-040903-0845 4/9/2003	WE-2R WE-2R-051403-0835 5/14/2003	WE-2RA WE-2RA-030906 3/9/2006
Volatile Organics (mg/L)												
1,1,1,2-TETRACHLOROETHANE									0.0005 U			
1,1,1-TRICHLOROETHANE						0.0008 U						
1,1,2,2-TETRACHLOROETHANE						0.003 J						
1,1,2-TRICHLOROETHANE						0.0008 U						
1,1-DICHLOROETHANE						0.001 J						
1,1-DICHLOROETHYLENE									0.0005 U			
1,1-DICHLOROPROPYLENE			0.00298 U	0.00298 U								
1,2,3-TRICHLOROBENZENE			0.00215 U	0.00215 U								
1,2,3-TRICHLOROPROPANE			0.00507 U	0.00507 U								
1,2,4-TRICHLOROBENZENE						0.12						
1,2,4-TRIMETHYLBENZENE			0.04553	0.07274								
1,2-CIS-DICHLOROETHYLENE						0.009						
1,2-DIBROMO-3-CHLOROPROPANE			0.01325 U	0.01325 U								
1,2-DIBROMOETHANE						0.001 U						
1,2-DICHLOROBENZENE						0.075						
1,2-DICHLOROETHANE	0.002					0.048						
1,2-DICHLOROETHYLENE							0.0056					
1,2-DICHLOROPROPANE									0.0005 U			
1,2-TRANS-DICHLOROETHYLENE						0.001 J						
1,3,5-TRIMETHYLBENZENE			0.01001	0.0165								
1,3-CIS-DICHLOROPROPYLENE									0.0005 U			
1,3-DICHLOROBENZENE						0.032						
1,3-DICHLOROPROPANE			0.00285 U	0.00285 U								
1,3-TRANS-DICHLOROPROPYLENE									0.0005 U			
1,4-DICHLOROBENZENE						0.097						
1,4-DIOXANE						0.07 U						
1-CHLOROBUTANE			0.00288 U	0.00288 U								
2,2-DICHLOROPROPANE			0.0028 U	0.0028 U								
2-CHLOROETHYL VINYL ETHER												
2-CHLOROTOLUENE			0.00305 U	0.00305 U								
2-HEXANONE			0.00308 U	0.00308 U								
3-CHLOROPROPENE			0.00742 U	0.00742 U								
3-METHYL HEXANE												
ACETONE						0.041						
ACROLEIN												
ACRYLONITRILE									0.01 U			
BENZENE		0.006				0.065						
BROMOBENZENE			0.00411 U	0.00411 U								
BROMOCHLOROMETHANE									0.0005 U			
BROMOFORM									0.0005 U			
CARBON DISULFIDE			0.00312 U	0.00312 U								
CARBON TETRACHLORIDE						0.001 U						
CHLOROBENZENE		0.028				0.89						
CHLORODIBROMOMETHANE									0.0005 U			
CHLOROETHANE									0.001 U			
CHLOROFORM						0.001 J						
CYCLOHEXANE, METHYL-												
DICHLOROBROMOMETHANE									0.0005 U			

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chemical_name	RW-4 RW-4-120197 12/1/1997	RW-5 RW-5-060197 6/1/1997	WE-2R WE-2R 2ft_-031005 3/10/2005 1-3 ft	WE-2R WE-2R 8ft_-031005 3/10/2005 7-9 ft	WE-2R WE-2R-020305 2/3/2005	WE-2R WE-2R-020807 2/8/2007	WE-2R WE-2R-030103 3/1/2003	WE-2R WE-2R-031302-1110 3/13/2002	WE-2R WE-2R-040605 4/6/2005	WE-2R WE-2R-040903-0845 4/9/2003	WE-2R WE-2R-051403-0835 5/14/2003	WE-2RA WE-2RA-030906 3/9/2006
DICHLORODIFLUOROMETHANE			0.0028 U	0.0028 U								
DIETHYL ETHER			0.00434 U	0.00434 U								
DIMETHYLSULFIDE												
ETHYL METHACRYLATE			0.00291 U	0.00291 U								
ETHYLBENZENE						0.075						
HEXACHLOROBUTADIENE			0.00276 U	0.00276 U								
HEXACHLOROETHANE			0.0058 U	0.0058 U								
ISOPROPYLBENZENE			0.00155 U	0.00155 U								
M+P-XYLENE												
METHACRYLONITRILE			0.01065 U	0.01065 U								
METHYL ACETATE												
METHYL ACRYLATE			0.0039 U	0.0039 U								
METHYL BROMIDE									0.0005 U			
METHYL CHLORIDE									0.001 U			
METHYL ETHYL KETONE			0.01116 U	0.01116 U								
METHYL IODIDE			0.01235 U	0.01235 U								
METHYL ISOBUTYL KETONE			0.0035 U	0.0035 U								
METHYL METHACRYLATE			0.00451 U	0.00451 U								
METHYLENE BROMIDE			0.00355 U	0.00355 U								
METHYLENE CHLORIDE						0.002 U						
METHYL-T-BUTYL ETHER			0.00235 U	0.00235 U								
NAPHTHALENE			0.01403	0.01843								
N-BUTYLBENZENE			0.00109 U	0.00109 U								
N-PROPYLBENZENE			0.00175 U	0.00458								
O-XYLENE									0.002			
P-CHLOROTOLUENE			0.0028 U	0.0028 U								
PENTACHLOROETHANE			0.0089 U	0.0089 U								
P-ISOPROPYLTOLUENE			0.00164 U	0.00164 U								
PROPANENITRILE			0.02705 U	0.02705 U								
PROPYLENE (PROPENE)										0.006 J		
SEC-BUTYLBENZENE			0.00215 U	0.00215 U								
STYRENE			0.00275 U	0.00275 U								
SULFUR DIOXIDE											0.18 J	
t-Butyl Alcohol												
TERT-BUTYLBENZENE			0.00215 U	0.00215 U								
TETRACHLOROETHYLENE						0.001 J						
TETRAHYDROFURAN			0.0295 U	0.0295 U								
TOLUENE						0.96						
TRANS-1,4-DICHLORO-2-BUTENE			0.00584 U	0.00584 U								
TRICHLOROETHYLENE	0.001					0.004 J						
TRICHLOROFLUOROMETHANE			0.00263 U	0.00263 U								
VINYL CHLORIDE						0.003 J						
XYLENES,TOTAL						0.37						

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chemical_name	RW-4 RW-4-120197 12/1/1997	RW-5 RW-5-060197 6/1/1997	WE-2R WE-2R 2ft_-031005 3/10/2005 1-3 ft	WE-2R WE-2R 8ft_-031005 3/10/2005 7-9 ft	WE-2R WE-2R-020305 2/3/2005	WE-2R WE-2R-020807 2/8/2007	WE-2R WE-2R-030103 3/1/2003	WE-2R WE-2R-031302-1110 3/13/2002	WE-2R WE-2R-040605 4/6/2005	WE-2R WE-2R-040903-0845 4/9/2003	WE-2R WE-2R-051403-0835 5/14/2003	WE-2RA WE-2RA-030906 3/9/2006
Semivolatile Organics (mg/L)												
1,2-DICHLOROBENZENE												
1,4-DICHLOROBENZENE												
2,4,5-TRICHLOROPHENOL					0.00151 U							
2,4,6-TRICHLOROPHENOL					0.00119 U							
2,4-DICHLOROPHENOL					0.00127 U							
2,4-DIMETHYLPHENOL					0.00202 U							
2,4-DINITROPHENOL					0.00176 U							
2,4-DINITROTOLUENE					0.00148 U							
2,6-DINITROTOLUENE					0.00182 U							
2-CHLORONAPHTHALENE					0.00105 U							
2-CHLOROPHENOL					0.00053 J							
2-METHYL-4,6-DINITROPHENOL					0.00118 U							
2-METHYLNAPHTHALENE					0.0004 J							
2-NITROANILINE					0.0013 U							
2-NITROPHENOL					0.00091 U							
3,3-DICHLOROBENZIDINE					0.00142 U							
3-NITROANILINE					0.00058 J							
4-BROMOPHENYL PHENYL ETHER					0.00063 U							
4-CHLORO-3-METHYLPHENOL					0.00182 U							
4-CHLOROANILINE					0.00146 U							
4-CHLOROPHENYL PHENYL ETHER					0.0006 U							
4-NITROANILINE					0.00194 U							
4-NITROPHENOL					0.00346 U							
ACENAPHTHENE					0.00072 U							
ACENAPHTHYLENE					0.00091 U							
ANILINE					0.03464							
ANTHRACENE					0.00046 U							
AZOBENZENE					0.00064 U							
BENZIDINE					0.02 U							
BENZO(A)ANTHRACENE					0.00039 U							
BENZO(A)PYRENE					0.00078 U							
BENZO(B)FLUORANTHENE												
Benzo(b+k)Fluoranthene					0.00069 U							
BENZO(GHI)PERYLENE					0.00101 U							
BENZO(K)FLUORANTHENE												
BENZOIC ACID					0.00222							
BENZYL ALCOHOL					0.00168							
BENZYL BUTYL PHTHALATE					0.00014 J							
BIS(2-CHLOROETHOXY) METHANE					0.00093 U							
BIS(2-CHLOROETHYL) ETHER					0.00109 U							
Bis(2-chloroisopropyl) ether					0.00164 U							
BIS(2-CHLOROISOPROPYL)ETHER												
BIS(2-ETHYLHEXYL)PHTHALATE					0.00789							
CARBAZOLE					0.00055 U							
CHRYSENE					0.00066 U							
CRESOL,O					0.00132 U							
CRESOL,P					0.00146 U							

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chemical_name	RW-4 RW-4-120197 12/1/1997	RW-5 RW-5-060197 6/1/1997	WE-2R WE-2R 2ft_-031005 3/10/2005 1-3 ft	WE-2R WE-2R 8ft_-031005 3/10/2005 7-9 ft	WE-2R WE-2R-020305 2/3/2005	WE-2R WE-2R-020807 2/8/2007	WE-2R WE-2R-030103 3/1/2003	WE-2R WE-2R-031302-1110 3/13/2002	WE-2R WE-2R-040605 4/6/2005	WE-2R WE-2R-040903-0845 4/9/2003	WE-2R WE-2R-051403-0835 5/14/2003	WE-2RA WE-2RA-030906 3/9/2006
DIBENZO(A,H)ANTHRACENE					0.00073 U							
DIBENZOFURAN					0.00079 U							
DIETHYL PHTHALATE					0.0003 U							
DIMETHYL PHTHALATE					0.00044 U							
DI-N-BUTYL PHTHALATE					0.0053							
DI-N-OCTYL PHTHALATE					0.00083 U							
FLUORANTHENE					0.00039 U							
FLUORENE					0.00078 U							
HEXACHLOROBENZENE					0.00064 U							
HEXACHLOROBUTADIENE												
HEXACHLOROCYCLOPENTADIENE					0.00119 U							
HEXACHLOROETHANE												
INDENO(1,2,3-CD)PYRENE					0.00073 U							
ISOPHORONE					0.00093 U							
NITROBENZENE					0.00997							
N-NITROSODIMETHYLAMINE					0.01 U							
N-NITROSODI-N-PROPYLAMINE					0.00077 U							
N-NITROSODIPHENYLAMINE					0.0004 U							
PENTACHLOROPHENOL					0.00194 U							
PHENANTHRENE					0.00052 U							
PHENOL					0.00114 U							
PYRENE					0.00048 U							
PYRIDINE					0.01 U							
Pesticide/PCBs (mg/L)												
4,4'-DDD								0.0000038 U				
4,4'-DDE								0.0000038 U				
4,4'-DDT								0.0000067 U				
ALDRIN								0.0000079 J				
ALPHA-BHC								0.0000019 U				
BETA-BHC								0.00001				
CHLORDANE								0.00004 U				
DELTA-BHC								0.000004 U				
DIELDRIN								0.0000038 U				
ENDOSULFAN I								0.0000038 U				
ENDOSULFAN II								0.00001 U				
ENDOSULFAN SULFATE								0.0000038 U				
ENDRIN								0.0000038 U				
ENDRIN ALDEHYDE								0.0000076 U				
GAMMA-BHC (LINDANE)								0.0000019 U				
HEPTACHLOR								0.0000019 U				
HEPTACHLOR EPOXIDE								0.0000026 J				
PCB-1016 (AROCLOR 1016)								0.00009 U				
PCB-1221 (AROCLOR 1221)								0.00019 U				
PCB-1232 (AROCLOR 1232)								0.00009 U				
PCB-1242 (AROCLOR 1242)								0.00009 U				
PCB-1248 (AROCLOR 1248)								0.00009 U				
PCB-1254 (AROCLOR 1254)								0.00009 U				
PCB-1260 (AROCLOR 1260)								0.00009 U				
TOXAPHENE								0.00029 U				

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chemical_name	RW-4 RW-4-120197 12/1/1997	RW-5 RW-5-060197 6/1/1997	WE-2R WE-2R 2ft_-031005 3/10/2005 1-3 ft	WE-2R WE-2R 8ft_-031005 3/10/2005 7-9 ft	WE-2R WE-2R-020305 2/3/2005	WE-2R WE-2R-020807 2/8/2007	WE-2R WE-2R-030103 3/1/2003	WE-2R WE-2R-031302-1110 3/13/2002	WE-2R WE-2R-040605 4/6/2005	WE-2R WE-2R-040903-0845 4/9/2003	WE-2R WE-2R-051403-0835 5/14/2003	WE-2RA WE-2RA-030906 3/9/2006
Metals, Total (mg/L)												
ALUMINUM												
ANTIMONY												
ARSENIC												
BARIUM												
BERYLLIUM												
CADMIUM												
CALCIUM												
CHROMIUM												
COBALT												
COPPER												
IRON												15.5
LEAD												
MAGNESIUM												4.69
MANGANESE												0.495
MERCURY												
NICKEL												
POTASSIUM												
SELENIUM												
SILVER												
SODIUM												
THALLIUM												
VANADIUM												
ZINC												
Metals, Dissolved (mg/L)												
ALUMINUM												
ANTIMONY												
ARSENIC												
BARIUM												
BERYLLIUM												
CADMIUM												
CALCIUM												
CHROMIUM												
COBALT												
COPPER												
IRON												14.1
LEAD												
MAGNESIUM												4.48
MANGANESE												0.479
MERCURY												
NICKEL												
POTASSIUM												
SELENIUM												
SILVER												
SODIUM												
THALLIUM												
VANADIUM												
ZINC												

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chemical_name	RW-4 RW-4-120197 12/1/1997	RW-5 RW-5-060197 6/1/1997	WE-2R WE-2R 2ft_-031005 3/10/2005 1-3 ft	WE-2R WE-2R 8ft_-031005 3/10/2005 7-9 ft	WE-2R WE-2R-020305 2/3/2005	WE-2R WE-2R-020807 2/8/2007	WE-2R WE-2R-030103 3/1/2003	WE-2R WE-2R-031302-1110 3/13/2002	WE-2R WE-2R-040605 4/6/2005	WE-2R WE-2R-040903-0845 4/9/2003	WE-2R WE-2R-051403-0835 5/14/2003	WE-2RA WE-2RA-030906 3/9/2006
Inorganics (mg/L)												
BIOCHEMICAL OXYGEN DEMAND												
Carbon												27.2
CHEMICAL OXYGEN DEMAND												
CHLORIDE (g/L)												
CHLORIDE (mg/L)												86
FERROUS IRON												15.5
FREE CARBON DIOXIDE												0.46 U
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1												0.46 U
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1												0.46 U
Nitrate (as N), Nitrogen, Nitrite												0.02
Nitrate, Nitrogen NO2, NO3												0.29
PH												3.9
SULFATE (g/L)												
SULFATE (mg/L)												156
Sulfide												5.7
TOTAL DISSOLVED SOLIDS												341
TOTAL HARDNESS-CALCIUM CARBONATE												
TOTAL ORGANIC CARBON												4.7
TOTAL SUSPENDED SOLIDS												10
CONDUCTIVITY (uS/cm)									743			
DISSOLVED OXYGEN									1.69			
PH (pH Units)									5.69			
TEMPERATURE (°C)									15			
Dissolved Gases (mg/L)												
ETHANE												0.012
ETHYLENE												0.001 U
ETHYLENIMINE						9.5 U						
METHANE												0.83
PROPANE												

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-8
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chemical_name	WE-2RA WE-2RA-031705 3/17/2005	WE-2RA WE2RA-062107 6/21/2007	WE-2RA WE2RA-09-04-08 9/4/2008	WE-2RA WE-2RA-091994 9/19/1994	WE-2RA WE-2RA-121406 12/14/2006	WE-2RA WE-2RA-121504 12/15/2004	WE-2RA WE-2RA-121605 12/16/2005	WE-2RA WE2R-Discharge-010406 1/4/2006
Volatile Organics (mg/L)								
1,1,1,2-TETRACHLOROETHANE					0.001 U			
1,1,1-TRICHLOROETHANE			0.0008 U					
1,1,2,2-TETRACHLOROETHANE			0.008					
1,1,2-TRICHLOROETHANE			0.0008 U					
1,1-DICHLOROETHANE			0.001 U					
1,1-DICHLOROETHYLENE					0.001 U			
1,1-DICHLOROPROPYLENE								0.0006 U
1,2,3-TRICHLOROBENZENE								
1,2,3-TRICHLOROPROPANE								0.00101 U
1,2,4-TRICHLOROBENZENE			0.28					
1,2,4-TRIMETHYLBENZENE								0.01321
1,2-CIS-DICHLOROETHYLENE			0.006					
1,2-DIBROMO-3-CHLOROPROPANE								0.00265 U
1,2-DIBROMOETHANE			0.001 U					
1,2-DICHLOROBENZENE			0.12					
1,2-DICHLOROETHANE			0.043					
1,2-DICHLOROETHYLENE								
1,2-DICHLOROPROPANE					0.001 U			
1,2-TRANS-DICHLOROETHYLENE			0.002 J					
1,3,5-TRIMETHYLBENZENE								0.003
1,3-CIS-DICHLOROPROPYLENE					0.001 U			
1,3-DICHLOROBENZENE			0.033					
1,3-DICHLOROPROPANE								0.00057 U
1,3-TRANS-DICHLOROPROPYLENE					0.001 U			
1,4-DICHLOROBENZENE			0.094					
1,4-DIOXANE			0.07 U					
1-CHLOROBUTANE								
2,2-DICHLOROPROPANE								0.00056 U
2-CHLOROETHYL VINYL ETHER				0 U				
2-CHLOROTOLUENE								
2-HEXANONE								0.00062 U
3-CHLOROPROPENE								0.00148 U
3-METHYL HEXANE								
ACETONE			0.031					
ACROLEIN				0 U				
ACRYLONITRILE					0.02 U			
BENZENE			0.038					
BROMOBENZENE								0.00082 U
BROMOCHLOROMETHANE					0.001 U			
BROMOFORM					0.001 U			
CARBON DISULFIDE								0.00062 U
CARBON TETRACHLORIDE			0.001 U					
CHLOROBENZENE			0.42					
CHLORODIBROMOMETHANE					0.001 U			
CHLOROETHANE					0.002 U			
CHLOROFORM			0.001 J					
CYCLOHEXANE, METHYL-								
DICHLOROBROMOMETHANE					0.001 U			

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chemical_name	WE-2RA WE-2RA-031705 3/17/2005	WE-2RA WE2RA-062107 6/21/2007	WE-2RA WE2RA-09-04-08 9/4/2008	WE-2RA WE-2RA-091994 9/19/1994	WE-2RA WE-2RA-121406 12/14/2006	WE-2RA WE-2RA-121504 12/15/2004	WE-2RA WE-2RA-121605 12/16/2005	WE-2RA WE2R-Discharge-010406 1/4/2006
DICHLORODIFLUOROMETHANE								0.00056 U
DIETHYL ETHER								0.00087 U
DIMETHYLSULFIDE								
ETHYL METHACRYLATE								0.00058 U
ETHYLBENZENE			0.057					
HEXACHLOROBUTADIENE								0.00055 U
HEXACHLOROETHANE								0.00116 U
ISOPROPYLBENZENE								0.00199
M+P-XYLENE								
METHACRYLONITRILE								0.00213 U
METHYL ACETATE								
METHYL ACRYLATE								0.00078 U
METHYL BROMIDE					0.001 U			
METHYL CHLORIDE					0.002 U			
METHYL ETHYL KETONE								0.00223 U
METHYL IODIDE								0.00247 U
METHYL ISOBUTYL KETONE								0.0007 U
METHYL METHACRYLATE								0.0009 U
METHYLENE BROMIDE								0.00071 U
METHYLENE CHLORIDE			0.009					
METHYL-T-BUTYL ETHER					0.0013			
NAPHTHALENE					0.0026			
N-BUTYLBENZENE								0.00022 U
N-PROPYLBENZENE								0.00144
O-XYLENE					0.039			
P-CHLOROTOLUENE								
PENTACHLOROETHANE								0.00178 U
P-ISOPROPYLTOLUENE								0.00033 U
PROPANENITRILE								0.00541 U
PROPYLENE (PROPENE)								
SEC-BUTYLBENZENE								0.00043 U
STYRENE					0.001 U			
SULFUR DIOXIDE								
t-Butyl Alcohol								
TERT-BUTYLBENZENE								0.00043 U
TETRACHLOROETHYLENE			0.003 J					
TETRAHYDROFURAN								
TOLUENE			0.71					
TRANS-1,4-DICHLORO-2-BUTENE								0.00117 U
TRICHLOROETHYLENE			0.007					
TRICHLOROFLUOROMETHANE								0.00053 U
VINYL CHLORIDE			0.002 J					
XYLENES,TOTAL			0.28					

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RA WE-2RA-031705 3/17/2005	WE-2RA WE2RA-062107 6/21/2007	WE-2RA WE2RA-09-04-08 9/4/2008	WE-2RA WE-2RA-091994 9/19/1994	WE-2RA WE-2RA-121406 12/14/2006	WE-2RA WE-2RA-121504 12/15/2004	WE-2RA WE-2RA-121605 12/16/2005	WE-2RA WE2R-Discharge-010406 1/4/2006
Semivolatile Organics (mg/L)								
1,2-DICHLOROBENZENE								
1,4-DICHLOROBENZENE								
2,4,5-TRICHLOROPHENOL								
2,4,6-TRICHLOROPHENOL								
2,4-DICHLOROPHENOL								
2,4-DIMETHYLPHENOL								
2,4-DINITROPHENOL								
2,4-DINITROTOLUENE								
2,6-DINITROTOLUENE								
2-CHLORONAPHTHALENE								
2-CHLOROPHENOL								
2-METHYL-4,6-DINITROPHENOL								
2-METHYLNAPHTHALENE								
2-NITROANILINE								
2-NITROPHENOL								
3,3-DICHLOROBENZIDINE								
3-NITROANILINE								
4-BROMOPHENYL PHENYL ETHER								
4-CHLORO-3-METHYLPHENOL								
4-CHLOROANILINE								
4-CHLOROPHENYL PHENYL ETHER								
4-NITROANILINE								
4-NITROPHENOL								
ACENAPHTHENE								
ACENAPHTHYLENE								
ANILINE								
ANTHRACENE								
AZOBENZENE								
BENZIDINE								
BENZO(A)ANTHRACENE								
BENZO(A)PYRENE								
BENZO(B)FLUORANTHENE								
Benzo(b+k)Fluoranthene								
BENZO(GHI)PERYLENE								
BENZO(K)FLUORANTHENE								
BENZOIC ACID								
BENZYL ALCOHOL								
BENZYL BUTYL PHTHALATE								
BIS(2-CHLOROETHOXY) METHANE								
BIS(2-CHLOROETHYL) ETHER								
Bis(2-chloroisopropyl) ether								
BIS(2-CHLOROISOPROPYL)ETHER								
BIS(2-ETHYLHEXYL)PHTHALATE								
CARBAZOLE								
CHRYSENE								
CRESOL,O								
CRESOL,P								

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RA WE-2RA-031705 3/17/2005	WE-2RA WE2RA-062107 6/21/2007	WE-2RA WE2RA-09-04-08 9/4/2008	WE-2RA WE-2RA-091994 9/19/1994	WE-2RA WE-2RA-121406 12/14/2006	WE-2RA WE-2RA-121504 12/15/2004	WE-2RA WE-2RA-121605 12/16/2005	WE-2RA WE2R-Discharge-010406 1/4/2006
DIBENZO(A,H)ANTHRACENE								
DIBENZOFURAN								
DIETHYL PHTHALATE								
DIMETHYL PHTHALATE								
DI-N-BUTYL PHTHALATE								
DI-N-OCTYL PHTHALATE								
FLUORANTHENE								
FLUORENE								
HEXACHLOROBENZENE								
HEXACHLOROBUTADIENE								
HEXACHLOROCYCLOPENTADIENE								
HEXACHLOROETHANE								
INDENO(1,2,3-CD)PYRENE								
ISOPHORONE								
NITROBENZENE								
N-NITROSODIMETHYLAMINE								
N-NITROSODI-N-PROPYLAMINE								
N-NITROSODIPHENYLAMINE								
PENTACHLOROPHENOL								
PHENANTHRENE								
PHENOL								
PYRENE								
PYRIDINE								
Pesticide/PCBs (mg/L)								
4,4'-DDD								
4,4'-DDE								
4,4'-DDT								
ALDRIN								
ALPHA-BHC								
BETA-BHC								
CHLORDANE								
DELTA-BHC								
DIELDRIN								
ENDOSULFAN I								
ENDOSULFAN II								
ENDOSULFAN SULFATE								
ENDRIN								
ENDRIN ALDEHYDE								
GAMMA-BHC (LINDANE)								
HEPTACHLOR								
HEPTACHLOR EPOXIDE								
PCB-1016 (AROCLOR 1016)								
PCB-1221 (AROCLOR 1221)								
PCB-1232 (AROCLOR 1232)								
PCB-1242 (AROCLOR 1242)								
PCB-1248 (AROCLOR 1248)								
PCB-1254 (AROCLOR 1254)								
PCB-1260 (AROCLOR 1260)								
TOXAPHENE								

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RA WE-2RA-031705 3/17/2005	WE-2RA WE2RA-062107 6/21/2007	WE-2RA WE2RA-09-04-08 9/4/2008	WE-2RA WE-2RA-091994 9/19/1994	WE-2RA WE-2RA-121406 12/14/2006	WE-2RA WE-2RA-121504 12/15/2004	WE-2RA WE-2RA-121605 12/16/2005	WE-2RA WE2R-Discharge-010406 1/4/2006
Metals, Total (mg/L)								
ALUMINUM				0.36				
ANTIMONY				0.005 U				
ARSENIC				0.011				
BARIUM				0.2 U				
BERYLLIUM				0.005 U				
CADMIUM						0.00076 U		
CALCIUM	13.3							
CHROMIUM				0.01 U				
COBALT				0.05 U				
COPPER						0.0034		
IRON								
LEAD						0.01 U		
MAGNESIUM								
MANGANESE								
MERCURY				0.0002 U				
NICKEL				0.04 U				
POTASSIUM				6.4				
SELENIUM				0.005 U				
SILVER				0.01 U				
SODIUM				76				
THALLIUM				0.005 U				
VANADIUM				0.05 U				
ZINC						0.164		
Metals, Dissolved (mg/L)								
ALUMINUM				0.2 U				
ANTIMONY				0.005 U				
ARSENIC				0.0094				
BARIUM				0.2 U				
BERYLLIUM				0.005 U				
CADMIUM				0.004 U				
CALCIUM				10				
CHROMIUM				0.01 U				
COBALT				0.05 U				
COPPER				0.025 U				
IRON								
LEAD				0.0037				
MAGNESIUM								
MANGANESE								
MERCURY				0.0002 U				
NICKEL				0.04 U				
POTASSIUM				6.5				
SELENIUM				0.005 U				
SILVER				0.01 U				
SODIUM				76				
THALLIUM				0.005 U				
VANADIUM				0.05 U				
ZINC				0.02 U				

Attachment A-8
Laboratory Analytical Data - Groundwater within CPS Plume
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

chemical_name	WE-2RA WE-2RA-031705 3/17/2005	WE-2RA WE2RA-062107 6/21/2007	WE-2RA WE2RA-09-04-08 9/4/2008	WE-2RA WE-2RA-091994 9/19/1994	WE-2RA WE-2RA-121406 12/14/2006	WE-2RA WE-2RA-121504 12/15/2004	WE-2RA WE-2RA-121605 12/16/2005	WE-2RA WE2R-Discharge-010406 1/4/2006
Inorganics (mg/L)								
BIOCHEMICAL OXYGEN DEMAND								
Carbon								
CHEMICAL OXYGEN DEMAND								
CHLORIDE (g/L)								
CHLORIDE (mg/L)								
FERROUS IRON								
FREE CARBON DIOXIDE								
MEASUREMENT OF ALKALINITY TO pH 4.5 MTHD EPA 310.1								
MEASUREMENT OF ALKALINITY TO pH 8.3 MTHD EPA 310.1								
Nitrate (as N), Nitrogen, Nitrite								
Nitrate, Nitrogen NO2, NO3								
PH								
SULFATE (g/L)								
SULFATE (mg/L)								
Sulfide								
TOTAL DISSOLVED SOLIDS								
TOTAL HARDNESS-CALCIUM CARBONATE								
TOTAL ORGANIC CARBON								
TOTAL SUSPENDED SOLIDS								
CONDUCTIVITY (uS/cm)							634	
DISSOLVED OXYGEN							2.3	
PH (pH Units)								
TEMPERATURE (°C)							14	
Dissolved Gases (mg/L)								
ETHANE								
ETHYLENE								
ETHYLENIMINE		9.5 U						
METHANE								
PROPANE								

mg/L = milligram per liter
uS/cm = microSiemen per centimeter
U = not detected value is the reporting limit
J = value is estimated

Attachment A-9
Laboratory Analytical Data - Shallow Groundwater within Area 1
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	CPS-01 CPS-1-072612 7/26/2012	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A-012012 1/20/2012	CPS-03A CPS-03A-021612 2/16/2012	CPS-03A CPS-03A-042712 4/27/2012	CPS-03A CPS-03A-051612 5/16/2012	CPS-03A CPS-03A-071812 7/18/2012	CPS-03A CPS-03A-072712 7/27/2012	CPS-03A CPS-03A-081712 8/17/2012	CPS-03A CPS-03A-091712 9/17/2012	CPS-03A CPS-03A-101911 10/19/2011	CPS-03A CPS-03A-111611 11/16/2011	CPS-03A CPS-03A-121311 12/13/2011	CPS-03A CPS-3A-031912 3/19/2012	CPS-03A CPS-3A-042312 4/23/2012	CPS-03A CPS-3A-101911 10/19/2011	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-08 CPS-8-072712 7/27/2012
Volatile Organics (mg/L)																							
1,1,1-TRICHLOROETHANE	0 / 35	0.0001 : 0.005		0.0004	0.0005 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0001 U	0.0008 U	0.0008 U		0.0008 U		0.0008 U		0.0008 U	0.005 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	28 / 35	0.0001 : 0.005	0.0002 - 0.008	0.0027	0.0009	0.001 J	0.003 J	0.003 J	0.002 J	0.002 J	0.002 J	0.0019	0.002 J	0.002 J		0.003 J		0.003 J		0.003 J	0.005 U	0.0002	0.0001 U
1,1,2-TRICHLOROETHANE	0 / 35	0.0001 : 0.005		0.0004	0.0005 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0001 U	0.0008 U	0.0008 U		0.0008 U		0.0008 U		0.0008 U	0.005 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	3 / 35	0.0001 : 0.005	0.0001 - 0.0005	0.0004	0.0005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002	0.001 U	0.001 U		0.001 U		0.001 U		0.001 U	0.005 U	0.0001	0.0001 U
1,1-DICHLOROETHYLENE	3 / 13	0.0001 : 0.005	0.0001 - 0.0023	0.0005	0.0005 U							0.0006									0.005 U	0.0023	0.0001 U
1,2,4-TRICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0001 - 0.3	0.16	0.029	0.18	0.2	0.2	0.14	0.17	0.14	0.16	0.16	0.15		0.18		0.18		0.17	0.011	0.019	0.0001
1,2-CIS-DICHLOROETHYLENE	32 / 35	0.0008 : 0.005	0.0002 - 0.075	0.012	0.0025	0.017	0.028	0.023	0.01	0.011	0.034	0.036	0.048	0.028		0.054		0.012		0.075	0.005 U	0.0026	0.0002
1,2-DIBROMOETHANE	0 / 22	0.001 : 0.001		0.0005		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U		0.001 U		0.001 U		0.001 U			
1,2-DICHLOROBENZENE	32 / 35	0.0001 : 0.0005	0.0001 - 0.59	0.096	0.034	0.15	0.2	0.18	0.14	0.15	0.13	0.14	0.13	0.13		0.2		0.17		0.21	0.023	0.0036	0.0001
1,2-DICHLOROETHANE	33 / 35	0.0001 : 0.005	0.0003 - 0.036	0.012	0.0043	0.018	0.02	0.018	0.017	0.018	0.014	0.015	0.015	0.013		0.02		0.019		0.027	0.005 U	0.0052	0.0005 J
1,2-DICHLOROPROPANE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	20 / 35	0.0001 : 0.005	0.0001 - 0.008	0.0019	0.0016	0.003 J	0.004 J	0.004 J	0.001 J	0.001 J	0.005 J	0.006	0.007	0.005		0.007		0.002 J		0.008	0.005 U	0.0002	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0005 - 0.065	0.017	0.032	0.004 J	0.009	0.006	0.004 J	0.004 J	0.004 J	0.0038	0.003 J	0.003 J		0.009		0.005		0.01	0.019	0.0005	0.0001 U
1,3-TRANS-DICHLOROPROPYLENE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0015 - 0.18	0.042	0.084	0.014	0.028	0.021	0.013	0.013	0.013	0.014	0.013	0.012		0.029		0.018		0.031	0.043	0.0018	0.0001 U
1,4-DIOXANE	3 / 35	0.02 : 1	0.026 - 0.14	0.049	0.1 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.02 U	0.07 U	0.07 U		0.07 U		0.07 U		0.07 U	1 U	0.02 U	0.026
ACETONE	6 / 35	0.003 : 0.15	0.004 - 0.02	0.0069	0.015 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0067	0.006 U	0.006 U		0.006 U		0.006 U		0.006 U	0.15 U	0.003 U	0.003 U
ACROLEIN	0 / 13	0.004 : 0.2		0.012	0.02 U							0.004 U									0.2 U	0.004 U	0.004 U
ACRYLONITRILE	0 / 13	0.001 : 0.05		0.003	0.005 U							0.001 U									0.05 U	0.001 U	0.001 U
BENZENE	32 / 35	0.0001 : 0.0001	0.0005 - 1.8	0.07	0.034	0.021	0.032	0.027	0.012	0.015	0.03	0.03	0.038	0.026		0.043		0.019		0.063	1.8	0.0017	0.0001 U
BROMOFORM	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
CARBON DISULFIDE	2 / 13	0.0004 : 0.02	0.0006 - 0.0009	0.0013	0.002 U							0.0006									0.02 U	0.0004 U	0.0004 U
CARBON TETRACHLORIDE	0 / 35	0.0001 : 0.005		0.00043	0.0005 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0001 U	0.001 U	0.001 U		0.001 U		0.001 U		0.001 U	0.005 U	0.0001 U	0.0001 U
CHLOROBENZENE	34 / 35	0.0005 : 0.0005	0.0001 - 8.1	0.44	0.72	0.1	0.14	0.12	0.064	0.078	0.091	0.088	0.093	0.081		0.18		0.084		0.2	8.1	0.0017	0.0001
CHLORODIBROMOMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
CHLOROETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
CHLOROFORM	9 / 35	0.0001 : 0.005	0.0003 - 0.002	0.0005	0.0005 U	0.0008 U	0.001 J	0.001 J	0.0008 U	0.001 J	0.0008 U	0.0007	0.0008 U	0.0008 U		0.001 J		0.001 J		0.002 J	0.005 U	0.0003	0.0001 U
DICHLOROBROMOMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
ETHYLBENZENE	31 / 35	0.0001 : 0.0001	0.0001 - 0.28	0.030	0.038	0.01	0.017	0.014	0.008	0.009	0.009	0.0098	0.009	0.007		0.021		0.011		0.025	0.28	0.0004	0.0001 U
METHYL ACETATE	0 / 13	0.0003 : 0.015		0.0009	0.0015 U							0.0003 U									0.015 U	0.0003 U	0.0003 U
METHYL BROMIDE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
METHYL CHLORIDE	0 / 13	0.0002 : 0.01		0.001	0.001 U							0.0002 U									0.01 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0 / 13	0.001 : 0.05		0.003	0.005 U							0.001 U									0.05 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0 / 13	0.001 : 0.05		0.003	0.005 U							0.001 U									0.05 U	0.001 U	0.001 U
METHYLENE CHLORIDE	1 / 35	0.0002 : 0.01	0.003 - 0.003	0.001	0.001 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0002 U	0.002 U	0.002 U		0.002 U		0.002 U		0.002 U	0.01 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	10 / 13	0.0001 : 0.005	0.0003 - 0.0014	0.0009	0.0005							0.0005									0.005 U	0.0003	0.001
NAPHTHALENE	7 / 13	0.0001 : 0.0005	0.0005 - 0.036	0.005	0.0031							0.0009									0.036	0.0001 U	0.0001 U
STYRENE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
t-Butyl Alcohol	1 / 13	0.004 : 0.2	0.013 - 0.013	0.013	0.02 U							0.004 U									0.2 U	0.004 U	0.004 U
TETRACHLOROETHYLENE	27 / 35	0.0001 : 0.005	0.0001 - 0.003	0.001	0.0005 U	0.001 J	0.001 J	0.001 J	0.001 J	0.001 J	0.0009 J	0.0012	0.001 J	0.001 J		0.001 J		0.001 J		0.001 J	0.005 U	0.0001	0.0001 U
TOLUENE	31 / 35	0.0001 : 0.0001	0.0002 - 4	0.20	0.06	0.057	0.11	0.095	0.027	0.033	0.069	0.064	0.087	0.073		0.16		0.064		0.24	4	0.0001 U	0.0001 U
TRICHLOROETHYLENE	32 / 35	0.0001 : 0.005	0.0002 - 0.007	0.0035	0.0008	0.004 J	0.004 J	0.004 J	0.004 J	0.004 J	0.004 J	0.004	0.005 J	0.004 J		0.005 J		0.004 J		0.004 J	0.005 U	0.0015	0.0002
TRICHLOROFLUOROMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0005 U							0.0001 U									0.005 U	0.0001 U	0.0001 U
VINYL CHLORIDE	16 / 35	0.00008 : 0.004	0.0001 - 0.015	0.003	0.0029	0.001 U	0.007	0.007	0.001 U	0.002 J	0.008	0.012	0.001 U	0.007		0.01		0.001 U		0.015	0.004 U	0.0015	0.00008 U
XYLENES,TOTAL	32 / 35	0.0001 : 0.0001	0.0003 - 1.2	0.12	0.17	0.033	0.058	0.049	0.026	0.027	0.031	0.034	0.031	0.023		0.074		0.035		0.097	1.2	0.0012	0.0001 U
Semivolatile Organics (mg/L)																							
1,2,4,5-TETRACHLOROBENZENE	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
1,4-DIOXANE	5 / 6	0.0009 : 0.0009	0.002 - 0.039	0.015																	0.039	0.005	0.025 J
2,3,4,6-Tetrachlorophenol	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
2,4,5-TRICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
2,4,6-TRICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
2,4-DICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
2,4-DIMETHYLPHENOL	1 / 6	0.0005 : 0.0005	0.1 - 0.1	0.0169																	0.1	0.0005 U	0.0005 U
2,4-DINITROPHENOL	0 / 6	0.009 : 0.009		0.005																	0.009 U	0.009 U	0.009 U
2,4-DINITROTOLUENE	0 / 6	0.0009 : 0.0009		0.0005																	0.0009 U	0.0009 U	0.0009 U
2,6-DINITROTOLUENE	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
2-CHLORONAPHTHALENE	0 6	0.0004 0.0004		0.0002																	0.0004 U	0.0004 U	0.0004 U
2-CHLOROPHENOL	1 / 6	0.0005 : 0.0005	0.006 - 0.006	0.001																	0.006	0.0005 U	0.0005 U
2-METHYL-4,6-DINITROPHENOL	0 / 6	0.005 : 0.005		0.0025																	0.005 U	0.005 U	0.005 U
2-METHYLNAPHTHALENE	1 / 6	0.00009 : 0.00009	0.005 - 0.005	0.0009																	0.005	0.00009 U	0.00009 U
2-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
2-NITROPHENOL	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
3,3-DICHLOROBENZIDINE	0 / 6	0.002 : 0.002		0.0010																	0.002 U	0.002 U	0.002 U
3-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
4-BROMOPHENYL PHENYL ETHER	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U

Attachment A-9
Laboratory Analytical Data - Shallow Groundwater within Area 1
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	CPS-01 CPS-1-072612 7/26/2012	CPS-03A CPS-03A 061812 6/18/2012	CPS-03A CPS-03A-012012 1/20/2012	CPS-03A CPS-03A-021612 2/16/2012	CPS-03A CPS-03A-042712 4/27/2012	CPS-03A CPS-03A-051612 5/16/2012	CPS-03A CPS-03A-071812 7/18/2012	CPS-03A CPS-03A-072712 7/27/2012	CPS-03A CPS-03A-081712 8/17/2012	CPS-03A CPS-03A-091712 9/17/2012	CPS-03A CPS-03A-101911 10/19/2011	CPS-03A CPS-03A-111611 11/16/2011	CPS-03A CPS-03A-121311 12/13/2011	CPS-03A CPS-3A-031912 3/19/2012	CPS-03A CPS-3A-042312 4/23/2012	CPS-03A CPS-3A-101911 10/19/2011	CPS-06 CPS-6-072612 7/26/2012	CPS-07 CPS-7-072612 7/26/2012	CPS-08 CPS-8-072712 7/27/2012
4-CHLORO-3-METHYLPHENOL	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
4-CHLOROANILINE	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
4-CHLOROPHENYL PHENYL ETHER	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
4-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003																	0.0005 U	0.0005 U	0.0005 U
4-NITROPHENOL	0 / 6	0.009 : 0.009		0.0045																	0.009 U	0.009 U	0.009 U
ACENAPHTHENE	2 / 6	0.00009 : 0.00009	0.0003 - 0.0003	0.0001																	0.00009 U	0.00009 U	0.0003
ACENAPHTHYLENE	0 / 6	0.00009 : 0.00009		0.0000																	0.00009 U	0.00009 U	0.00009 U
ACETOPHENONE	1 / 6	0.0005 : 0.0005	0.006 - 0.006	0.0012																	0.006	0.0005 U	0.0005 U
ANTHRACENE	0 / 6	0.00009 : 0.00009		0.00005																	0.00009 U	0.00009 U	0.00009 U
ATRAZINE	0 / 6	0.002 : 0.002		0.001																	0.002 U	0.002 U	0.002 U
BENZALDEHYDE	0 / 6	0.0009 : 0.0009		0.00045																	0.0009 U	0.0009 U	0.0009 U
BENZIDINE	0 / 6	0.019 : 0.019		0.010																	0.019 U	0.019 U	0.019 U
BENZO(A)ANTHRACENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
BENZO(A)PYRENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
BENZO(B)FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
BENZO(GHI)PERYLENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
BENZO(K)FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
BENZYL BUTYL PHTHALATE	0 / 6	0.002 : 0.002		0.001																	0.002 U	0.002 U	0.002 U
Biphenyl	2 / 6	0.0005 : 0.0005	0.001 - 0.024	0.0043																	0.024	0.001	0.0005 U
BIS(2-CHLOROETHOXY) METHANE	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
BIS(2-CHLOROETHYL) ETHER	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
Bis(2-chloroisopropyl) ether	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
BIS(2-CHLOROISOPROPYL)ETHER	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
BIS(2-ETHYLHEXYL)PHTHALATE	0 / 6	0.002 : 0.002		0.001																	0.002 U	0.002 U	0.002 U
CAPROLACTAM	0 / 6	0.005 : 0.005		0.0025																	0.005 U	0.005 U	0.005 U
CARBAZOLE	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
CHRYSENE	0 / 6	0.00009 : 0.00009		0.00005																	0.00009 U	0.00009 U	0.00009 U
CRESOL,O	1 / 6	0.0005 : 0.0005	0.023 - 0.023	0.0040																	0.023	0.0005 U	0.0005 U
CRESOL,P	1 / 6	0.0005 : 0.0005	0.02 - 0.02	0.0035																	0.02	0.0005 U	0.0005 U
DIBENZO(A,H)ANTHRACENE	0 / 6	0.00009 : 0.00009		0.00005																	0.00009 U	0.00009 U	0.00009 U
DIBENZOFURAN	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
DIETHYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010																	0.002 U	0.002 U	0.002 U
DIMETHYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010																	0.002 U	0.002 U	0.002 U
DI-N-BUTYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010																	0.002 U	0.002 U	0.002 U
DI-N-OCTYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010																	0.002 U	0.002 U	0.002 U
FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
FLUORENE	3 / 6	0.00009 : 0.00009	0.0001 - 0.0005	0.00016																	0.0005	0.00009 U	0.0002 J
HEXACHLOROBENZENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
HEXACHLOROBUTADIENE	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
HEXACHLOROCYCLOPENTADIENE	0 / 6	0.005 : 0.005		0.0025																	0.005 U	0.005 U	0.005 U
HEXACHLOROETHANE	0 / 6	0.0009 : 0.0009		0.00045																	0.0009 U	0.0009 U	0.0009 U
INDENO(1,2,3-CD)PYRENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
ISOPHORONE	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
NAPHTHALENE	2 / 6	0.00009 : 0.00009	0.0001 - 0.018	0.0030																	0.018	0.0001	0.00009 U
NITROBENZENE	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
N-NITROSODI-N-PROPYLAMINE	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
N-NITROSODIPHENYLAMINE	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
PENTACHLOROPHENOL	0 / 6	0.0009 : 0.0009		0.00045																	0.0009 U	0.0009 U	0.0009 U
PHENANTHRENE	0 / 6	0.00009 : 0.00009		0.000045																	0.00009 U	0.00009 U	0.00009 U
PHENOL	0 / 6	0.0005 : 0.0005		0.00025																	0.0005 U	0.0005 U	0.0005 U
PYRENE	0 / 6	0.00009 : 0.00009		0.00005																	0.00009 U	0.00009 U	0.00009 U
Other (mg/L)																							
ETHYLENIMINE	0 / 18	0.5 : 0.5		0.2500		0.5 U	0.5 U	0.5 U		0.5 U					0.5 U	0.5 U	0.5 U	0.5 U	0.5 U				

Notes:
[1] Average calculated using 1/2 the reporting limit for non-detects.
mg/L - milligrams per liter
U - not detected, value is reporting limit
J - value is estimated concentration

Attachment A-9
Laboratory Analytical Data - Shallow Groundwater within Area 1
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	CPS-08 CPS-8-D-072712 7/27/2012	IRM-PZ-4 IRM-PZ-4-072612 7/26/2012	IRM-PZ-9 IRM-PZ-9-072612 7/26/2012	IRM-TP-2 IRM-TP-2-072612 7/26/2012	IRM-TP-4 IRM-TP-4-072612 7/26/2012	MI-04 MI-04-072612 7/26/2012	SRI-GW-16 SRI-GW-16-092512 9/25/2012 7-8 ft	SRI-GW-18 SRI-GW-18-092512 9/25/2012 7-8 ft	WCC-6S WCC-6S-072712 7/27/2012	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2Rb-012012 1/20/2012	WE-2RB WE-2RB-021612 2/16/2012	WE-2RB WE-2RB-031912 3/19/2012	WE-2RB WE-2RB-042312 4/23/2012	WE-2RB WE-2Rb-042712 4/27/2012	WE-2RB WE-2RB-051612 5/16/2012	WE-2RB WE-2Rb-071812 7/18/2012	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2RB-081712 8/17/2012
Volatile Organics (mg/L)																							
1,1,1-TRICHLOROETHANE	0 / 35	0.0001 : 0.005		0.0004	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U	0.0005 U	0.0008 U
1,1,2,2-TETRACHLOROETHANE	28 / 35	0.0001 : 0.005	0.0002 - 0.008	0.0027	0.0001 U	0.0001 U	0.0001 U	0.003	0.0006		0.0001 U	0.0005 U		0.003 J	0.007	0.007	0.006		0.004 J	0.004 J	0.003 J	0.0036	0.005 J
1,1,2-TRICHLOROETHANE	0 / 35	0.0001 : 0.005		0.0004	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U	0.0005 U	0.0008 U
1,1-DICHLOROETHANE	3 / 35	0.0001 : 0.005	0.0001 - 0.0005	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0005		0.0001 U	0.0005 U		0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U	0.0005 U	0.001 U
1,1-DICHLOROETHYLENE	3 / 13	0.0001 : 0.005	0.0001 - 0.0023	0.0005	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001		0.0001 U	0.0005 U										0.0005 U	
1,2,4-TRICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0001 - 0.3	0.16	0.0001 U	0.0015	0.0001 U	0.17	0.008		0.0001 U	0.0005 U		0.3	0.3	0.28	0.26		0.26	0.24	0.24	0.29	0.24
1,2-CIS-DICHLOROETHYLENE	32 / 35	0.0008 : 0.005	0.0002 - 0.075	0.012	0.0002	0.0012	0.0002	0.0024	0.007		0.0004	0.0035		0.002 J	0.001 J	0.0008 U	0.0009 J		0.0008 U	0.001 J	0.004 J	0.003	0.003 J
1,2-DIBROMOETHANE	0 / 22	0.001 : 0.001		0.0005										0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U		0.001 U
1,2-DICHLOROBENZENE	32 / 35	0.0001 : 0.0005	0.0001 - 0.59	0.096	0.0001 U	0.0049	0.0011	0.59	0.018		0.0001 U	0.0005 U		0.072	0.063	0.056	0.063		0.059	0.071	0.07	0.066	0.069
1,2-DICHLOROETHANE	33 / 35	0.0001 : 0.005	0.0003 - 0.036	0.012	0.0004 J	0.0003	0.0001 U	0.005	0.036		0.0035	0.0022		0.014	0.015	0.014	0.015		0.014	0.012	0.011	0.011	0.014
1,2-DICHLOROPROPANE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
1,2-TRANS-DICHLOROETHYLENE	20 / 35	0.0001 : 0.005	0.0001 - 0.008	0.0019	0.0001 U	0.0001	0.0001 U	0.0015	0.0004		0.0001 U	0.0005 U		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0009 J	0.0007	0.0008 U
1,3-CIS-DICHLOROPROPYLENE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
1,3-DICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0005 - 0.065	0.017	0.0001 U	0.007	0.0005	0.065	0.0022		0.0001 U	0.0005 U		0.039	0.036	0.029	0.034		0.032	0.039	0.039	0.036	0.037
1,3-TRANS-DICHLOROPROPYLENE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
1,4-DICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0015 - 0.18	0.042	0.0001 U	0.021	0.0015	0.18	0.0041		0.0001 U	0.0005 U		0.088	0.075	0.064	0.074		0.068	0.088	0.094	0.089	0.093
1,4-DIOXANE	3 / 35	0.02 : 1	0.026 - 0.14	0.049	0.02 U	0.02 U	0.02 U	0.1 U	0.033		0.14	0.1 U		0.07 U	0.07 U	0.07 U	0.07 U		0.07 U	0.07 U	0.07 U	0.1 U	0.07 U
ACETONE	6 / 35	0.003 : 0.15	0.004 - 0.02	0.0069	0.003 U	0.004	0.003 U	0.015 U	0.003 U		0.003 U	0.015 U		0.006 U	0.006 U	0.006 U	0.006 U		0.006 U	0.006 U	0.017 J	0.02	0.013 J
ACROLEIN	0 / 13	0.004 : 0.2		0.012	0.004 U	0.004 U	0.004 U	0.02 U	0.004 U		0.004 U	0.02 U										0.02 U	
ACRYLONITRILE	0 / 13	0.001 : 0.05		0.003	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U										0.005 U	
BENZENE	32 / 35	0.0001 : 0.0001	0.0005 - 1.8	0.07	0.0001 U	0.0096	0.0011	0.0088	0.026		0.0001 U	0.0005		0.019	0.018	0.013	0.016		0.015	0.021	0.029	0.025	0.027
BROMOFORM	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
CARBON DISULFIDE	2 / 13	0.0004 : 0.02	0.0006 - 0.0009	0.0013	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0009		0.0004 U	0.002 U										0.002 U	
CARBON TETRACHLORIDE	0 / 35	0.0001 : 0.005		0.00043	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U		0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U	0.0005 U	0.001 U
CHLOROBENZENE	34 / 35	0.0005 : 0.0005	0.0001 - 8.1	0.44	0.0001	0.096	0.0091	0.12	0.021		0.0002	0.0005 U		0.44	0.41	0.36	0.37		0.32	0.42	0.47	0.53	0.45
CHLORODIBROMOMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
CHLOROETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
CHLOROFORM	9 / 35	0.0001 : 0.005	0.0003 - 0.002	0.0005	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0005		0.0001 U	0.0005 U		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U	0.0005 U	0.0008 U
DICHLOROBROMOMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
DICHLORODIFLUOROMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
ETHYLBENZENE	31 / 35	0.0001 : 0.0001	0.0001 - 0.28	0.030	0.0001 U	0.0003	0.0001 U	0.0077	0.0001		0.0001 U	0.16		0.039	0.028	0.017	0.029		0.021	0.038	0.047	0.038	0.06
METHYL ACETATE	0 / 13	0.0003 : 0.015		0.0009	0.0003 U	0.0003 U	0.0003 U	0.0015 U	0.0003 U		0.0003 U	0.0015 U										0.0015 U	
METHYL BROMIDE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
METHYL CHLORIDE	0 / 13	0.0002 : 0.01		0.001	0.0002 U	0.0002 U	0.0002 U	0.001 U	0.0002 U		0.0002 U	0.001 U										0.001 U	
METHYL ETHYL KETONE	0 / 13	0.001 : 0.05		0.003	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U										0.005 U	
METHYL ISOBUTYL KETONE	0 / 13	0.001 : 0.05		0.003	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U										0.005 U	
METHYLENE CHLORIDE	1 / 35	0.0002 : 0.01	0.003 - 0.003	0.001	0.0002 U	0.0002 U	0.0002 U	0.001 U	0.0002 U		0.0002 U	0.001 U		0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U	0.002 U	0.001 U	0.002 U
METHYL-T-BUTYL ETHER	10 / 13	0.0001 : 0.005	0.0003 - 0.0014	0.0009	0.001	0.0001 U	0.0001 U	0.0007	0.0014		0.0013	0.0013										0.0008	
NAPHTHALENE	7 / 13	0.0001 : 0.0005	0.0005 - 0.036	0.005	0.0001 U	0.011	0.0001 U	0.0036	0.0005		0.0001 U	0.0005 U										0.0047	
STYRENE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
t-Butyl Alcohol	1 / 13	0.004 : 0.2	0.013 - 0.013	0.013	0.004 U	0.004 U	0.004 U	0.02 U	0.013		0.004 U	0.02 U										0.02 U	
TETRACHLOROETHYLENE	27 / 35	0.0001 : 0.005	0.0001 - 0.003	0.001	0.0001 U	0.0001 U	0.0001 U	0.0016	0.0003		0.0001 U	0.0005 U		0.002 J	0.002 J	0.003 J	0.002 J		0.002 J	0.002 J	0.001 J	0.0013	0.002 J
TOLUENE	31 / 35	0.0001 : 0.0001	0.0002 - 4	0.20	0.0001 U	0.0012	0.0002	0.0025	0.0003		0.0001 U	0.0011		0.15	0.08	0.042	0.071		0.058	0.12	0.29	0.4	0.29
TRICHLOROETHYLENE	32 / 35	0.0001 : 0.005	0.0002 - 0.007	0.0035	0.0002	0.0001 U	0.0001 U	0.0024	0.0047		0.0002	0.0016		0.004 J	0.006	0.006	0.005		0.005 J	0.004 J	0.003 J	0.003	0.005 J
TRICHLOROFLUOROMETHANE	0 / 13	0.0001 : 0.005		0.0003	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U										0.0005 U	
VINYL CHLORIDE	16 / 35	0.00008 : 0.004	0.0001 - 0.015	0.003	0.00008 U	0.0001	0.00008 U	0.0026	0.0021		0.00008 U	0.0004 U		0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.002 J	0.0014	0.001 U
XYLENES,TOTAL	32 / 35	0.0001 : 0.0001	0.0003 - 1.2	0.12	0.0001 U	0.057	0.0003	0.012	0.0003		0.0001 U	0.52		0.16	0.1	0.058	0.11		0.078	0.15	0.2	0.13	0.27
Semivolatile Organics (mg/L)																							
1,2,4,5-TETRACHLOROBENZENE	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
1,4-DIOXANE	5 / 6	0.0009 : 0.0009	0.002 - 0.039	0.015	0.02 J					0.0009 U			0.002										
2,3,4,6-Tetrachlorophenol	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
2,4,5-TRICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
2,4,6-TRICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
2,4-DICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
2,4-DIMETHYLPHENOL	1 / 6	0.0005 : 0.0005	0.1 - 0.1	0.0169	0.0005 U					0.0005 U			0.0005 U										
2,4-DINITROPHENOL	0 / 6	0.009 : 0.009		0.005	0.009 U					0.009 U			0.009 U										
2,4-DINITROTOLUENE	0 / 6	0.0009 : 0.0009		0.0005	0.0009 U					0.0009 U			0.0009 U										
2,6-DINITROTOLUENE	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
2-CHLORONAPHTHALENE	0 6	0.0004 0.0004		0.0002	0.0004 U					0.0004 U			0.0004 U										
2-CHLOROPHENOL	1 / 6	0.0005 : 0.0005	0.006 - 0.006	0.001	0.0005 U					0.0005 U			0.0005 U										
2-METHYL-4,6-DINITROPHENOL	0 / 6	0.005 : 0.005		0.0025	0.005 U					0.005 U			0.005 U										
2-METHYLNAPHTHALENE	1 / 6	0.00009 : 0.00009	0.005 - 0.005	0.0009	0.00009 U					0.00009 U			0.00009 U										
2-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
2-NITROPHENOL	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
3,3-DICHLOROBENZIDINE	0 / 6	0.002 : 0.002		0.0010	0.002 U					0.002 U			0.002 U										
3-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
4-BROMOPHENYL PHENYL ETHER	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										

Attachment A-9
Laboratory Analytical Data - Shallow Groundwater within Area 1
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	CPS-08 CPS-8-D-072712 7/27/2012	IRM-PZ-4 IRM-PZ-4-072612 7/26/2012	IRM-PZ-9 IRM-PZ-9-072612 7/26/2012	IRM-TP-2 IRM-TP-2-072612 7/26/2012	IRM-TP-4 IRM-TP-4-072612 7/26/2012	MI-04 MI-04-072612 7/26/2012	SRI-GW-16 SRI-GW-16-092512 9/25/2012 7-8 ft	SRI-GW-18 SRI-GW-18-092512 9/25/2012 7-8 ft	WCC-6S WCC-6S-072712 7/27/2012	WE-2RB WE-2Rb 061812 6/18/2012	WE-2RB WE-2Rb-012012 1/20/2012	WE-2RB WE-2RB-021612 2/16/2012	WE-2RB WE-2RB-031912 3/19/2012	WE-2RB WE-2RB-042312 4/23/2012	WE-2RB WE-2Rb-042712 4/27/2012	WE-2RB WE-2RB-051612 5/16/2012	WE-2RB WE-2Rb-071812 7/18/2012	WE-2RB WE-2Rb-072712 7/27/2012	WE-2RB WE-2RB-081712 8/17/2012
4-CHLORO-3-METHYLPHENOL	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
4-CHLOROANILINE	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
4-CHLOROPHENYL PHENYL ETHER	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
4-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003	0.0005 U					0.0005 U			0.0005 U										
4-NITROPHENOL	0 / 6	0.009 : 0.009		0.0045	0.009 U					0.009 U			0.009 U										
ACENAPHTHENE	2 / 6	0.00009 : 0.00009	0.0003 - 0.0003	0.0001	0.0003					0.00009 U			0.00009 U										
ACENAPHTHYLENE	0 / 6	0.00009 : 0.00009		0.0000	0.00009 U					0.00009 U			0.00009 U										
ACETOPHENONE	1 / 6	0.0005 : 0.0005	0.006 - 0.006	0.0012	0.0005 U					0.0005 U			0.0005 U										
ANTHRACENE	0 / 6	0.00009 : 0.00009		0.00005	0.00009 U					0.00009 U			0.00009 U										
ATRAZINE	0 / 6	0.002 : 0.002		0.001	0.002 U					0.002 U			0.002 U										
BENZALDEHYDE	0 / 6	0.0009 : 0.0009		0.00045	0.0009 U					0.0009 U			0.0009 U										
BENZIDINE	0 / 6	0.019 : 0.019		0.010	0.019 U					0.019 U			0.019 U										
BENZO(A)ANTHRACENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
BENZO(A)PYRENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
BENZO(B)FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
BENZO(GHI)PERYLENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
BENZO(K)FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
BENZYL BUTYL PHTHALATE	0 / 6	0.002 : 0.002		0.001	0.002 U					0.002 U			0.002 U										
Biphenyl	2 / 6	0.0005 : 0.0005	0.001 - 0.024	0.0043	0.0005 U					0.0005 U			0.0005 U										
BIS(2-CHLOROETHOXY) METHANE	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
BIS(2-CHLOROETHYL) ETHER	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
Bis(2-chloroisopropyl) ether	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
BIS(2-CHLOROISOPROPYL)ETHER	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
BIS(2-ETHYLHEXYL)PHTHALATE	0 / 6	0.002 : 0.002		0.001	0.002 U					0.002 U			0.002 U										
CAPROLACTAM	0 / 6	0.005 : 0.005		0.0025	0.005 U					0.005 U			0.005 U										
CARBAZOLE	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
CHRYSENE	0 / 6	0.00009 : 0.00009		0.00005	0.00009 U					0.00009 U			0.00009 U										
CRESOL,O	1 / 6	0.0005 : 0.0005	0.023 - 0.023	0.0040	0.0005 U					0.0005 U			0.0005 U										
CRESOL,P	1 / 6	0.0005 : 0.0005	0.02 - 0.02	0.0035	0.0005 U					0.0005 U			0.0005 U										
DIBENZO(A,H)ANTHRACENE	0 / 6	0.00009 : 0.00009		0.00005	0.00009 U					0.00009 U			0.00009 U										
DIBENZOFURAN	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
DIETHYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010	0.002 U					0.002 U			0.002 U										
DIMETHYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010	0.002 U					0.002 U			0.002 U										
DI-N-BUTYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010	0.002 U					0.002 U			0.002 U										
DI-N-OCTYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010	0.002 U					0.002 U			0.002 U										
FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
FLUORENE	3 / 6	0.00009 : 0.00009	0.0001 - 0.0005	0.00016	0.0001 J					0.00009 U			0.00009 U										
HEXACHLOROBENZENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
HEXACHLOROBUTADIENE	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
HEXACHLOROCYCLOPENTADIENE	0 / 6	0.005 : 0.005		0.0025	0.005 U					0.005 U			0.005 U										
HEXACHLOROETHANE	0 / 6	0.0009 : 0.0009		0.00045	0.0009 U					0.0009 U			0.0009 U										
INDENO(1,2,3-CD)PYRENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
ISOPHORONE	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
NAPHTHALENE	2 / 6	0.00009 : 0.00009	0.0001 - 0.018	0.0030	0.00009 U					0.00009 U			0.00009 U										
NITROBENZENE	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
N-NITROSODI-N-PROPYLAMINE	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
N-NITROSODIPHENYLAMINE	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
PENTACHLOROPHENOL	0 / 6	0.0009 : 0.0009		0.00045	0.0009 U					0.0009 U			0.0009 U										
PHENANTHRENE	0 / 6	0.00009 : 0.00009		0.000045	0.00009 U					0.00009 U			0.00009 U										
PHENOL	0 / 6	0.0005 : 0.0005		0.00025	0.0005 U					0.0005 U			0.0005 U										
PYRENE	0 / 6	0.00009 : 0.00009		0.00005	0.00009 U					0.00009 U			0.00009 U										
Other (mg/L)																							
ETHYLENIMINE	0 / 18	0.5 : 0.5		0.2500										0.5 U	0.5 U	0.5 U	0.5 U	0.5 U		0.5 U			

Notes:
[1] Average calculated using 1/2 the reporting limit for non-detects.
mg/L - milligrams per liter
U - not detected, value is reporting limit
J - value is estimated concentration

Attachment A-9
Laboratory Analytical Data - Shallow Groundwater within Area 1
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	WE-2RB WE-2Rb-091712 9/17/2012	WE-2RB WE-2RB-101911 10/19/2011	WE-2RB WE-2RB-102111 10/21/2011	WE-2RB WE-2Rb-111611 11/16/2011	WE-2RB WE-2RB-121311 12/13/2011
Volatile Organics (mg/L)									
1,1,1-TRICHLOROETHANE	0 / 35	0.0001 : 0.005		0.0004	0.0008 U	0.0008 U		0.0008 U	
1,1,2,2-TETRACHLOROETHANE	28 / 35	0.0001 : 0.005	0.0002 - 0.008	0.0027	0.004 J	0.008		0.006	
1,1,2-TRICHLOROETHANE	0 / 35	0.0001 : 0.005		0.0004	0.0008 U	0.0008 U		0.0008 U	
1,1-DICHLOROETHANE	3 / 35	0.0001 : 0.005	0.0001 - 0.0005	0.0004	0.001 U	0.001 U		0.001 U	
1,1-DICHLOROETHYLENE	3 / 13	0.0001 : 0.005	0.0001 - 0.0023	0.0005					
1,2,4-TRICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0001 - 0.3	0.16	0.27	0.24		0.29	
1,2-CIS-DICHLOROETHYLENE	32 / 35	0.0008 : 0.005	0.0002 - 0.075	0.012	0.003 J	0.001 J		0.0009 J	
1,2-DIBROMOETHANE	0 / 22	0.001 : 0.001		0.0005	0.001 U	0.001 U		0.001 U	
1,2-DICHLOROBENZENE	32 / 35	0.0001 : 0.0005	0.0001 - 0.59	0.096	0.077	0.052		0.049	
1,2-DICHLOROETHANE	33 / 35	0.0001 : 0.005	0.0003 - 0.036	0.012	0.012	0.017		0.014	
1,2-DICHLOROPROPANE	0 / 13	0.0001 : 0.005		0.0003					
1,2-TRANS-DICHLOROETHYLENE	20 / 35	0.0001 : 0.005	0.0001 - 0.008	0.0019	0.001 J	0.0008 U		0.0008 U	
1,3-CIS-DICHLOROPROPYLENE	0 / 13	0.0001 : 0.005		0.0003					
1,3-DICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0005 - 0.065	0.017	0.035	0.026		0.026	
1,3-TRANS-DICHLOROPROPYLENE	0 / 13	0.0001 : 0.005		0.0003					
1,4-DICHLOROBENZENE	31 / 35	0.0001 : 0.0005	0.0015 - 0.18	0.042	0.09	0.052		0.053	
1,4-DIOXANE	3 / 35	0.02 : 1	0.026 - 0.14	0.049	0.07 U	0.07 U		0.07 U	
ACETONE	6 / 35	0.003 : 0.15	0.004 - 0.02	0.0069	0.017 J	0.006 U		0.006 U	
ACROLEIN	0 / 13	0.004 : 0.2		0.012					
ACRYLONITRILE	0 / 13	0.001 : 0.05		0.003					
BENZENE	32 / 35	0.0001 : 0.0001	0.0005 - 1.8	0.07	0.028	0.015		0.012	
BROMOFORM	0 / 13	0.0001 : 0.005		0.0003					
CARBON DISULFIDE	2 / 13	0.0004 : 0.02	0.0006 - 0.0009	0.0013					
CARBON TETRACHLORIDE	0 / 35	0.0001 : 0.005		0.00043	0.001 U	0.001 U		0.001 U	
CHLOROBENZENE	34 / 35	0.0005 : 0.0005	0.0001 - 8.1	0.44	0.45	0.34		0.32	
CHLORODIBROMOMETHANE	0 / 13	0.0001 : 0.005		0.0003					
CHLOROETHANE	0 / 13	0.0001 : 0.005		0.0003					
CHLOROFORM	9 / 35	0.0001 : 0.005	0.0003 - 0.002	0.0005	0.0008 U	0.0008 U		0.0008 U	
DICHLOROBROMOMETHANE	0 / 13	0.0001 : 0.005		0.0003					
DICHLORODIFLUOROMETHANE	0 / 13	0.0001 : 0.005		0.0003					
ETHYLBENZENE	31 / 35	0.0001 : 0.0001	0.0001 - 0.28	0.030	0.05	0.021		0.016	
METHYL ACETATE	0 / 13	0.0003 : 0.015		0.0009					
METHYL BROMIDE	0 / 13	0.0001 : 0.005		0.0003					
METHYL CHLORIDE	0 / 13	0.0002 : 0.01		0.001					
METHYL ETHYL KETONE	0 / 13	0.001 : 0.05		0.003					
METHYL ISOBUTYL KETONE	0 / 13	0.001 : 0.05		0.003					
METHYLENE CHLORIDE	1 / 35	0.0002 : 0.01	0.003 - 0.003	0.001	0.003 J	0.002 U		0.002 U	
METHYL-T-BUTYL ETHER	10 / 13	0.0001 : 0.005	0.0003 - 0.0014	0.0009					
NAPHTHALENE	7 / 13	0.0001 : 0.0005	0.0005 - 0.036	0.005					
STYRENE	0 / 13	0.0001 : 0.005		0.0003					
t-Butyl Alcohol	1 / 13	0.004 : 0.2	0.013 - 0.013	0.013					
TETRACHLOROETHYLENE	27 / 35	0.0001 : 0.005	0.0001 - 0.003	0.001	0.001 J	0.003 J		0.002 J	
TOLUENE	31 / 35	0.0001 : 0.0001	0.0002 - 4	0.20	0.3	0.14		0.066	
TRICHLOROETHYLENE	32 / 35	0.0001 : 0.005	0.0002 - 0.007	0.0035	0.004 J	0.007		0.006	
TRICHLOROFLUOROMETHANE	0 / 13	0.0001 : 0.005		0.0003					
VINYL CHLORIDE	16 / 35	0.00008 : 0.004	0.0001 - 0.015	0.003	0.002 J	0.001 U		0.001 U	
XYLENES,TOTAL	32 / 35	0.0001 : 0.0001	0.0003 - 1.2	0.12	0.22	0.075		0.056	
Semivolatile Organics (mg/L)									
1,2,4,5-TETRACHLOROBENZENE	0 / 6	0.0005 : 0.0005		0.0003					
1,4-DIOXANE	5 / 6	0.0009 : 0.0009	0.002 - 0.039	0.015					
2,3,4,6-Tetrachlorophenol	0 / 6	0.0005 : 0.0005		0.0003					
2,4,5-TRICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003					
2,4,6-TRICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003					
2,4-DICHLOROPHENOL	0 / 6	0.0005 : 0.0005		0.0003					
2,4-DIMETHYLPHENOL	1 / 6	0.0005 : 0.0005	0.1 - 0.1	0.0169					
2,4-DINITROPHENOL	0 / 6	0.009 : 0.009		0.005					
2,4-DINITROTOLUENE	0 / 6	0.0009 : 0.0009		0.0005					
2,6-DINITROTOLUENE	0 / 6	0.0005 : 0.0005		0.0003					
2-CHLORONAPHTHALENE	0 6	0.0004 0.0004		0.0002					
2-CHLOROPHENOL	1 / 6	0.0005 : 0.0005	0.006 - 0.006	0.001					
2-METHYL-4,6-DINITROPHENOL	0 / 6	0.005 : 0.005		0.0025					
2-METHYLNAPHTHALENE	1 / 6	0.00009 : 0.00009	0.005 - 0.005	0.0009					
2-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003					
2-NITROPHENOL	0 / 6	0.0005 : 0.0005		0.0003					
3,3-DICHLOROBENZIDINE	0 / 6	0.002 : 0.002		0.0010					
3-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003					
4-BROMOPHENYL PHENYL ETHER	0 / 6	0.0005 : 0.0005		0.0003					

Attachment A-9
Laboratory Analytical Data - Shallow Groundwater within Area 1
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	WE-2RB WE-2Rb-091712 9/17/2012	WE-2RB WE-2RB-101911 10/19/2011	WE-2RB WE-2RB-102111 10/21/2011	WE-2RB WE-2Rb-111611 11/16/2011	WE-2RB WE-2RB-121311 12/13/2011
4-CHLORO-3-METHYLPHENOL	0 / 6	0.0005 : 0.0005		0.0003					
4-CHLOROANILINE	0 / 6	0.0005 : 0.0005		0.0003					
4-CHLOROPHENYL PHENYL ETHER	0 / 6	0.0005 : 0.0005		0.0003					
4-NITROANILINE	0 / 6	0.0005 : 0.0005		0.0003					
4-NITROPHENOL	0 / 6	0.009 : 0.009		0.0045					
ACENAPHTHENE	2 / 6	0.00009 : 0.00009	0.0003 - 0.0003	0.0001					
ACENAPHTHYLENE	0 / 6	0.00009 : 0.00009		0.0000					
ACETOPHENONE	1 / 6	0.0005 : 0.0005	0.006 - 0.006	0.0012					
ANTHRACENE	0 / 6	0.00009 : 0.00009		0.00005					
ATRAZINE	0 / 6	0.002 : 0.002		0.001					
BENZALDEHYDE	0 / 6	0.0009 : 0.0009		0.00045					
BENZIDINE	0 / 6	0.019 : 0.019		0.010					
BENZO(A)ANTHRACENE	0 / 6	0.00009 : 0.00009		0.000045					
BENZO(A)PYRENE	0 / 6	0.00009 : 0.00009		0.000045					
BENZO(B)FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045					
BENZO(GHI)PERYLENE	0 / 6	0.00009 : 0.00009		0.000045					
BENZO(K)FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045					
BENZYL BUTYL PHTHALATE	0 / 6	0.002 : 0.002		0.001					
Biphenyl	2 / 6	0.0005 : 0.0005	0.001 - 0.024	0.0043					
BIS(2-CHLOROETHOXY) METHANE	0 / 6	0.0005 : 0.0005		0.00025					
BIS(2-CHLOROETHYL) ETHER	0 / 6	0.0005 : 0.0005		0.00025					
Bis(2-chloroisopropyl) ether	0 / 6	0.0005 : 0.0005		0.00025					
BIS(2-CHLOROISOPROPYL)ETHER	0 / 6	0.0005 : 0.0005		0.00025					
BIS(2-ETHYLHEXYL)PHTHALATE	0 / 6	0.002 : 0.002		0.001					
CAPROLACTAM	0 / 6	0.005 : 0.005		0.0025					
CARBAZOLE	0 / 6	0.0005 : 0.0005		0.00025					
CHRYSENE	0 / 6	0.00009 : 0.00009		0.00005					
CRESOL,O	1 / 6	0.0005 : 0.0005	0.023 - 0.023	0.0040					
CRESOL,P	1 / 6	0.0005 : 0.0005	0.02 - 0.02	0.0035					
DIBENZO(A,H)ANTHRACENE	0 / 6	0.00009 : 0.00009		0.00005					
DIBENZOFURAN	0 / 6	0.0005 : 0.0005		0.00025					
DIETHYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010					
DIMETHYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010					
DI-N-BUTYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010					
DI-N-OCTYL PHTHALATE	0 / 6	0.002 : 0.002		0.0010					
FLUORANTHENE	0 / 6	0.00009 : 0.00009		0.000045					
FLUORENE	3 / 6	0.00009 : 0.00009	0.0001 - 0.0005	0.00016					
HEXACHLOROBENZENE	0 / 6	0.00009 : 0.00009		0.000045					
HEXACHLOROBUTADIENE	0 / 6	0.0005 : 0.0005		0.00025					
HEXACHLOROCYCLOPENTADIENE	0 / 6	0.005 : 0.005		0.0025					
HEXACHLOROETHANE	0 / 6	0.0009 : 0.0009		0.00045					
INDENO(1,2,3-CD)PYRENE	0 / 6	0.00009 : 0.00009		0.000045					
ISOPHORONE	0 / 6	0.0005 : 0.0005		0.00025					
NAPHTHALENE	2 / 6	0.00009 : 0.00009	0.0001 - 0.018	0.0030					
NITROBENZENE	0 / 6	0.0005 : 0.0005		0.00025					
N-NITROSODI-N-PROPYLAMINE	0 / 6	0.0005 : 0.0005		0.00025					
N-NITROSODIPHENYLAMINE	0 / 6	0.0005 : 0.0005		0.00025					
PENTACHLOROPHENOL	0 / 6	0.0009 : 0.0009		0.00045					
PHENANTHRENE	0 / 6	0.00009 : 0.00009		0.000045					
PHENOL	0 / 6	0.0005 : 0.0005		0.00025					
PYRENE	0 / 6	0.00009 : 0.00009		0.00005					
Other (mg/L)									
ETHYLENIMINE	0 / 18	0.5 : 0.5		0.2500			0.5 U	0.5 U	0.5 U

Notes:
[1] Average calculated using 1/2 the reporting limit for non-detects.
mg/L - milligrams per liter
U - not detected, value is reporting limit
J - value is estimated concentration

Prepared by / Date: KJC 11/12/13
Checked by / Date: KMW 12/9/2013

Attachment A-10
Laboratory Analytical Data - Shallow Groundwater within Area 2
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	SRI-GW-17 SRI-GW-17-092512 9/25/2012 7-8 ft	SRI-GW-19 SRI-GW-19-092612 9/26/2012 7-8 ft	SRI-GW-19 SRI-GW-19-D-092612 9/26/2012 7-8 ft	SRI-GW-20 SRI-GW-20-092612 9/26/2012 7-8 ft	SRI-GW-21 SRI-GW-21-092612 9/26/2012 7-8 ft	SRI-GW-22 SRI-GW-22-092612 9/26/2012 7-8 ft	SRI-GW-23 SRI-GW-23-092712 9/27/2012 7-8 ft	SRI-GW-24 SRI-GW-24-092712 9/27/2012 7-8 ft	SRI-GW-25 SRI-GW-25-092712 9/27/2012 7-8 ft	SRI-GW-26 SRI-GW-26-092712 9/27/2012 7-8 ft	WCC-4S WCC-4S-072712 7/27/2012
Volatile Organics (mg/L)															
1,1,1-TRICHLOROETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,1,2,2-TETRACHLOROETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,1,2-TRICHLOROETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,1-DICHLOROETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,1-DICHLOROETHYLENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,2,4-TRICHLOROBENZENE	2 / 10	0.0001 : 0.0001	0.0001 - 0.0002	0.00007	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001	0.0001 U	
1,2-CIS-DICHLOROETHYLENE	3 / 10	0.0001 : 0.0001	0.0001 - 0.001	0.00017	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001	0.001	
1,2-DICHLOROBENZENE	1 / 10	0.0001 : 0.0001	0.0004 - 0.0004	0.000085	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,2-DICHLOROETHANE	2 / 10	0.0001 : 0.0001	0.0003 - 0.0004	0.00011	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0003	
1,2-DICHLOROPROPANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,2-TRANS-DICHLOROETHYLENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,3-CIS-DICHLOROPROPYLENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,3-DICHLOROBENZENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,3-TRANS-DICHLOROPROPYLENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,4-DICHLOROBENZENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
1,4-DIOXANE	0 / 10	0.02 : 0.02		0.01	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	
ACETONE	0 / 10	0.003 : 0.003		0.0015	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	
ACROLEIN	0 / 10	0.004 : 0.004		0.002	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	
ACRYLONITRILE	0 / 10	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
BENZENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
BROMOFORM	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
CARBON DISULFIDE	0 / 10	0.0004 : 0.0004		0.0002	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	
CARBON TETRACHLORIDE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
CHLOROBENZENE	4 / 10	0.0001 : 0.0001	0.0001 - 0.0004	0.00012	0.0004	0.0002	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001	
CHLORODIBROMOMETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
CHLOROETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
CHLOROFORM	1 / 10	0.0001 : 0.0001	0.0002 - 0.0002	0.000065	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002	0.0001 U	0.0001 U	0.0001 U	
DICHLOROBROMOMETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
DICHLORODIFLUOROMETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
ETHYLBENZENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
METHYL ACETATE	0 / 10	0.0003 : 0.0003		0.00015	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	
METHYL BROMIDE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
METHYL CHLORIDE	0 / 10	0.0002 : 0.0002		0.0001	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	
METHYL ETHYL KETONE	0 / 10	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
METHYL ISOBUTYL KETONE	0 / 10	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	
METHYLENE CHLORIDE	0 / 10	0.0002 : 0.0002		0.0001	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	
METHYL-T-BUTYL ETHER	8 / 10	0.0001 : 0.0001	0.0001 - 0.0009	0.00024	0.0009	0.0001	0.0001	0.0001 U	0.0002	0.0001 U	0.0002	0.0001	0.0001	0.0006	
NAPHTHALENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
STYRENE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
t-Butyl Alcohol	0 / 10	0.004 : 0.004		0.002	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	
TETRACHLOROETHYLENE	1 / 10	0.0001 : 0.0001	0.0002 - 0.0002	0.000065	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
TOLUENE	2 / 10	0.0001 : 0.0001	0.0001 - 0.0002	0.00007	0.0001	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
TRICHLOROETHYLENE	3 / 10	0.0001 : 0.0001	0.0001 - 0.0003	0.000095	0.0002	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0003	
TRICHLOROFLUOROMETHANE	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
VINYL CHLORIDE	0 / 10	0.00008 : 0.00008		0.00004	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	
XYLENES,TOTAL	0 / 10	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	
Semivolatile Organics (mg/L)															
1,2,4,5-TETRACHLOROBENZENE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
1,4-DIOXANE	1 / 1		0.01 - 0.01	0.01											0.01
2,3,4,6-Tetrachlorophenol	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
2,4,5-TRICHLOROPHENOL	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
2,4,6-TRICHLOROPHENOL	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
2,4-DICHLOROPHENOL	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U

Attachment A-10
Laboratory Analytical Data - Shallow Groundwater within Area 2
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	SRI-GW-17 SRI-GW-17-092512 9/25/2012 7-8 ft	SRI-GW-19 SRI-GW-19-092612 9/26/2012 7-8 ft	SRI-GW-19 SRI-GW-19-D-092612 9/26/2012 7-8 ft	SRI-GW-20 SRI-GW-20-092612 9/26/2012 7-8 ft	SRI-GW-21 SRI-GW-21-092612 9/26/2012 7-8 ft	SRI-GW-22 SRI-GW-22-092612 9/26/2012 7-8 ft	SRI-GW-23 SRI-GW-23-092712 9/27/2012 7-8 ft	SRI-GW-24 SRI-GW-24-092712 9/27/2012 7-8 ft	SRI-GW-25 SRI-GW-25-092712 9/27/2012 7-8 ft	SRI-GW-26 SRI-GW-26-092712 9/27/2012 7-8 ft	WCC-4S WCC-4S-072712 7/27/2012
2,4-DIMETHYLPHENOL	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
2,4-DINITROPHENOL	0 / 1	0.009 : 0.009		0.0045											0.009 U
2,4-DINITROTOLUENE	0 / 1	0.0009 : 0.0009		0.00045											0.0009 U
2,6-DINITROTOLUENE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
2-CHLORONAPHTHALENE	0 / 1	0.0004 : 0.0004		0.0002											0.0004 U
2-CHLOROPHENOL	0 1	0.0005 0.0005		0.00025											0.0005 U
2-METHYL-4,6-DINITROPHENOL	0 / 1	0.005 : 0.005		0.0025											0.005 U
2-METHYLNAPHTHALENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
2-NITROANILINE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
2-NITROPHENOL	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
3,3-DICHLOROBENZIDINE	0 / 1	0.002 : 0.002		0.001											0.002 U
3-NITROANILINE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
4-BROMOPHENYL PHENYL ETHER	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
4-CHLORO-3-METHYLPHENOL	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
4-CHLOROANILINE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
4-CHLOROPHENYL PHENYL ETHER	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
4-NITROANILINE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
4-NITROPHENOL	0 / 1	0.009 : 0.009		0.0045											0.009 U
ACENAPHTHENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
ACENAPHTHYLENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
ACETOPHENONE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
ANTHRACENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
ATRAZINE	0 / 1	0.002 : 0.002		0.001											0.002 U
BENZALDEHYDE	0 / 1	0.0009 : 0.0009		0.00045											0.0009 U
BENZIDINE	0 / 1	0.019 : 0.019		0.0095											0.019 U
BENZO(A)ANTHRACENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
BENZO(A)PYRENE	1 / 1		0.0001 - 0.0001	0.0001											0.0001
BENZO(B)FLUORANTHENE	1 / 1		0.0002 - 0.0002	0.0002											0.0002
BENZO(GHI)PERYLENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
BENZO(K)FLUORANTHENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
BENZYL BUTYL PHTHALATE	0 / 1	0.002 : 0.002		0.001											0.002 U
Biphenyl	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
BIS(2-CHLOROETHOXY) METHANE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
BIS(2-CHLOROETHYL) ETHER	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
Bis(2-chloroisopropyl) ether	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
BIS(2-CHLOROISOPROPYL)ETHER	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
BIS(2-ETHYLHEXYL)PHTHALATE	0 / 1	0.002 : 0.002		0.001											0.002 U
CAPROLACTAM	0 / 1	0.005 : 0.005		0.0025											0.005 U
CARBAZOLE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
CHRYSENE	1 / 1		0.0001 - 0.0001	0.0001											0.0001
CRESOL,O	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
CRESOL,P	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
DIBENZO(A,H)ANTHRACENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
DIBENZOFURAN	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
DIETHYL PHTHALATE	0 / 1	0.002 : 0.002		0.001											0.002 U
DIMETHYL PHTHALATE	0 / 1	0.002 : 0.002		0.001											0.002 U
DI-N-BUTYL PHTHALATE	0 / 1	0.002 : 0.002		0.001											0.002 U
DI-N-OCTYL PHTHALATE	0 / 1	0.002 : 0.002		0.001											0.002 U
FLUORANTHENE	1 / 1		0.0002 - 0.0002	0.0002											0.0002
FLUORENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
HEXACHLOROBENZENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
HEXACHLOROBUTADIENE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
HEXACHLOROCYCLOPENTADIENE	0 / 1	0.005 : 0.005		0.0025											0.005 U

Attachment A-10
Laboratory Analytical Data - Shallow Groundwater within Area 2
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	SRI-GW-17 SRI-GW-17-092512 9/25/2012 7-8 ft	SRI-GW-19 SRI-GW-19-092612 9/26/2012 7-8 ft	SRI-GW-19 SRI-GW-19-D-092612 9/26/2012 7-8 ft	SRI-GW-20 SRI-GW-20-092612 9/26/2012 7-8 ft	SRI-GW-21 SRI-GW-21-092612 9/26/2012 7-8 ft	SRI-GW-22 SRI-GW-22-092612 9/26/2012 7-8 ft	SRI-GW-23 SRI-GW-23-092712 9/27/2012 7-8 ft	SRI-GW-24 SRI-GW-24-092712 9/27/2012 7-8 ft	SRI-GW-25 SRI-GW-25-092712 9/27/2012 7-8 ft	SRI-GW-26 SRI-GW-26-092712 9/27/2012 7-8 ft	WCC-4S WCC-4S-072712 7/27/2012
HEXACHLOROETHANE	0 / 1	0.0009 : 0.0009		0.00045											0.0009 U
INDENO(1,2,3-CD)PYRENE	1 / 1		0.0001 - 0.0001	0.0001											0.0001
ISOPHORONE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
NAPHTHALENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
NITROBENZENE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
N-NITROSODI-N-PROPYLAMINE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
N-NITROSODIPHENYLAMINE	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
PENTACHLOROPHENOL	0 / 1	0.0009 : 0.0009		0.00045											0.0009 U
PHENANTHRENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U
PHENOL	0 / 1	0.0005 : 0.0005		0.00025											0.0005 U
PYRENE	0 / 1	0.00009 : 0.00009		0.000045											0.00009 U

Notes:
[1] Average calculated using 1/2 the reporting limit for non-detects.
mg/L - milligrams per liter
U - not detected, value is reporting limit
J - value is estimated concentration

Prepared by / Date: KJC 11/12/13
Checked by / Date: KMW 12/9/2013

Attachment A-11
Laboratory Analytical Data - Shallow Groundwater within Area 3
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	SRI-GW-27 SRI-GW-27-092412 9/24/2012 7-8 ft	SRI-GW-28 SRI-GW-28-092412 9/24/2012 7-8 ft	SRI-GW-29 SRI-GW-29-092412 9/24/2012 7-8 ft
Volatile Organics (mg/L)							
1,1,1-TRICHLOROETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,1,2-TRICHLOROETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHYLENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,2,4-TRICHLOROBENZENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,2-CIS-DICHLOROETHYLENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROBENZENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROPROPANE	0 / 3	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,3-TRANS-DICHLOROPROPYLENE	0 / 3	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
1,4-DIOXANE	0 / 3	0.02 : 0.02		0.0100	0.02 U	0.02 U	0.02 U
ACETONE	1 / 3	0.003 : 0.003	0.0044 - 0.0044	0.0025	0.003 U	0.0044	0.003 U
ACROLEIN	0 / 3	0.004 : 0.004		0.0020	0.004 U	0.004 U	0.004 U
ACRYLONITRILE	0 / 3	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U
BENZENE	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U
BROMOFORM	0 / 3	0.0001 : 0.0001		0.00	0.0001 U	0.0001 U	0.0001 U
CARBON DISULFIDE	3 / 3		0.0004 - 0.0006	0.0005	0.0006	0.0005	0.0004
CARBON TETRACHLORIDE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
CHLOROBENZENE	0 / 3	0.0001 : 0.0001		0.00	0.0001 U	0.0001 U	0.0001 U
CHLORODIBROMOMETHANE	0 / 3	0.0001 : 0.0001		0.00	0.0001 U	0.0001 U	0.0001 U
CHLOROETHANE	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U
CHLOROFORM	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
DICHLOROBROMOMETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
ETHYLBENZENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
METHYL ACETATE	0 / 3	0.0003 : 0.0003		0.0002	0.0003 U	0.0003 U	0.0003 U
METHYL BROMIDE	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U
METHYL CHLORIDE	0 / 3	0.0002 : 0.0002		0.0001	0.0002 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0 / 3	0.001 : 0.001		0.001	0.001 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0 / 3	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U
METHYLENE CHLORIDE	0 / 3	0.0002 : 0.0002		0.0001	0.0002 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	1 / 3	0.0001 : 0.0001	0.0003 - 0.0003	0.000	0.0001 U	0.0001 U	0.0003
NAPHTHALENE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
STYRENE	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U
t-Butyl Alcohol	0 / 3	0.004 : 0.004		0.002	0.004 U	0.004 U	0.004 U
TETRACHLOROETHYLENE	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U
TOLUENE	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U
TRICHLOROETHYLENE	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U
TRICHLOROFLUOROMETHANE	0 / 3	0.0001 : 0.0001		0.0001	0.0001 U	0.0001 U	0.0001 U
VINYL CHLORIDE	0 / 3	0.00008 : 0.00008		0.0000	0.00008 U	0.00008 U	0.00008 U
XYLENES,TOTAL	0 / 3	0.0001 : 0.0001		0.000	0.0001 U	0.0001 U	0.0001 U

Notes:
[1] Average calculated using 1/2 the reporting limit for non-detects.
mg/L - milligrams per liter
U - not detected, value is reporting limit
J - value is estimated concentration

Prepared by / Date: KJC 11/12/13
Checked by / Date: KMW 12/9/2013

Attachment A-12
Summary of Analytical Results Representative of the Groundwater/Surface Water Interaction
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	GW-SW-3 GW-SW-3-2-3-121510 12/15/2010 2-3 ft	GW-SW-4 GW-SW-4-2.8-3.8-121510 12/15/2010 2.8-3.8 ft	GW-SW-5 GW-SW-5-1.5-2.5-121410 12/14/2010 1.5-2.5 ft	GW-SW-6 GW-SW-6-4-5-121410 12/14/2010 4-5 ft	GW-SW-7 GW-SW-7-2.5-3.5-121010 12/10/2010 2.5-3.5 ft
Volatile Organics (mg/L)									
1,1,1-TRICHLOROETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	1 / 5	0.0001 : 0.0001	0.0002 - 0.0002	0.00008	0.0001 U	0.0001 U	0.0002	0.0001 U	0.0001 U
1,1,2-TRICHLOROETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHYLENE	3 / 5	0.0001 : 0.0001	0.0003 - 0.001	0.00048	0.0003	0.001	0.001	0.0001 U	0.0001 U
1,2,4-TRICHLOROBENZENE	3 / 5	0.0001 : 0.0001	0.0002 - 0.017	0.00364	0.0001 U	0.0002	0.017	0.0001 U	0.0009
1,2-CIS-DICHLOROETHYLENE	4 / 5	0.0001 : 0.0001	0.0001 - 0.0005	0.00023	0.0001 U	0.0001	0.0005	0.0002	0.0003
1,2-DIBROMO-3-CHLOROPROPANE	0 / 5	0.0000095 : 0.0000098		0.00000484	0.0000095 U	0.0000098 U	0.0000097 U	0.0000097 U	0.0000097 U
1,2-DIBROMOETHANE	0 / 5	0.0000095 : 0.0000098		0.00000484	0.0000095 U	0.0000098 U	0.0000097 U	0.0000097 U	0.0000097 U
1,2-DICHLOROBENZENE	4 / 5	0.0001 : 0.0001	0.0008 - 0.0034	0.00121	0.0001 U	0.0008	0.0034	0.0008	0.001
1,2-DICHLOROETHANE	5 / 5		0.0002 - 0.0015	0.00068	0.0005	0.0007	0.0015	0.0002	0.0005
1,2-DICHLOROPROPANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	1 / 5	0.0001 : 0.0001	0.0001 - 0.0001	0.00006	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	4 / 5	0.0001 : 0.0001	0.0001 - 0.0016	0.00059	0.0001 U	0.0002	0.0016	0.0001	0.001
1,3-TRANS-DICHLOROPROPYLENE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	4 / 5	0.0001 : 0.0001	0.0008 - 0.0022	0.00109	0.0001 U	0.0009	0.0015	0.0008	0.0022
ACETONE	2 / 5	0.003 : 0.012	0.011 - 0.1	0.024	0.003 U	0.1	0.011	0.003 U	0.012 U
ACROLEIN	0 / 5	0.004 : 0.004		0.002	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
ACRYLONITRILE	0 / 5	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
BENZENE	3 / 5	0.0001 : 0.0001	0.0005 - 0.0009	0.00044	0.0001 U	0.0007	0.0009	0.0005	0.0001 U
BROMOFORM	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CARBON DISULFIDE	0 / 5	0.0004 : 0.0004		0.0002	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CARBON TETRACHLORIDE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROBENZENE	4 / 5	0.0001 : 0.0001	0.0002 - 0.0024	0.00115	0.0001 U	0.0002	0.0024	0.0022	0.0009
CHLORODIBROMOMETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROFORM	0 / 5	0.0001 : 0.0004		0.00009	0.0004 U	0.0001 U	0.0002 U	0.0001 U	0.0001 U
DICHLOROBROMOMETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
ETHYLBENZENE	1 / 5	0.0001 : 0.0001	0.0001 - 0.0001	0.00006	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0001 U
METHYL ACETATE	0 / 5	0.0003 : 0.0005		0.00017	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0005 U
METHYL BROMIDE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
METHYL CHLORIDE	0 / 5	0.0002 : 0.0002		0.0001	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0 / 5	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0 / 5	0.001 : 0.001		0.0005	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
METHYLENE CHLORIDE	0 / 5	0.0002 : 0.0002		0.0001	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	5 / 5		0.0001 - 0.024	0.00572	0.0001	0.0001	0.0005	0.0039	0.024
NAPHTHALENE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
STYRENE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
t-Butyl Alcohol	4 / 5	0.004 : 0.004	0.0044 - 0.05	0.01608	0.004 U	0.011	0.013	0.0044	0.05
TETRACHLOROETHYLENE	1 / 5	0.0001 : 0.0001	0.0001 - 0.0001	0.00006	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0001 U
TOLUENE	1 / 5	0.0001 : 0.0001	0.0005 - 0.0005	0.00014	0.0001 U	0.0005	0.0001 U	0.0001 U	0.0001 U
TRICHLOROETHYLENE	3 / 5	0.0001 : 0.0001	0.0001 - 0.0007	0.00022	0.0001	0.0002	0.0007	0.0001 U	0.0001 U
TRICHLOROFLUOROMETHANE	0 / 5	0.0001 : 0.0001		0.00005	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
VINYL CHLORIDE	4 / 5	0.00008 : 0.00008	0.0001 - 0.0005	0.000248	0.00008 U	0.0005	0.0005	0.0001	0.0001
XYLENES,TOTAL	0 / 5	0.0001 : 0.0002		0.00006	0.0001 U	0.0002 U	0.0001 U	0.0001 U	0.0001 U

Attachment A-12
Summary of Analytical Results Representative of the Groundwater/Surface Water Interaction
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	GW-SW-3 GW-SW-3-2-3-121510 12/15/2010 2-3 ft	GW-SW-4 GW-SW-4-2.8-3.8-121510 12/15/2010 2.8-3.8 ft	GW-SW-5 GW-SW-5-1.5-2.5-121410 12/14/2010 1.5-2.5 ft	GW-SW-6 GW-SW-6-4-5-121410 12/14/2010 4-5 ft	GW-SW-7 GW-SW-7-2.5-3.5-121010 12/10/2010 2.5-3.5 ft
Semivolatile Organics (mg/L)									
1,4-DIOXANE	3 / 4	0.002 : 0.002	0.001 - 0.007	0.00325	0.001		0.004	0.007	0.002 U
2,4,5-TRICHLOROPHENOL	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
2,4,6-TRICHLOROPHENOL	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
2,4-DICHLOROPHENOL	0 / 4	0.0005 : 0.005		0.0008125	0.0005 U		0.0005 U	0.0005 U	0.005 U
2,4-DIMETHYLPHENOL	0 / 4	0.0005 : 0.005		0.0008125	0.0005 U		0.0005 U	0.0005 U	0.005 U
2,4-DINITROPHENOL	0 / 4	0.002 : 0.02		0.00325	0.002 U		0.002 U	0.002 U	0.02 UJ
2,4-DINITROTOLUENE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
2,6-DINITROTOLUENE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
2-CHLOROPHENOL	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
2-METHYL-4,6-DINITROPHENOL	0 / 4	0.002 : 0.02		0.00325	0.002 U		0.002 U	0.002 U	0.02 U
2-METHYLNAPHTHALENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 UJ
2-NITROANILINE	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
3,3-DICHLOROBENZIDINE	0 / 4	0.001 : 0.01		0.001625	0.001 U		0.001 U	0.001 U	0.01 U
4-CHLORO-3-METHYLPHENOL	0 / 4	0.0005 : 0.005		0.0008125	0.0005 U		0.0005 U	0.0005 U	0.005 U
ACENAPHTHENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
ACENAPHTHYLENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
ACETOPHENONE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
ANTHRACENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
BENZALDEHYDE	0 / 4	0.0005 : 0.005		0.0008125	0.0005 U		0.0005 U	0.0005 U	0.005 U
BENZIDINE	0 / 4	0.01 : 0.1		0.016375	0.01 U		0.011 U	0.01 U	0.1 U
BENZO(A)ANTHRACENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
BENZO(A)PYRENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
BENZO(B)FLUORANTHENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
BENZO(GHI)PERYLENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
BENZO(K)FLUORANTHENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
BENZYL BUTYL PHTHALATE	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
Biphenyl	1 / 4	0.0001 : 0.001	0.0002 - 0.0002	0.0002	0.0001 U		0.0002	0.0001 U	0.001 U
BIS(2-CHLOROETHYL) ETHER	1 / 4	0.0001 : 0.001	0.0002 - 0.0002	0.0002	0.0001 U		0.0002	0.0001 U	0.001 U
Bis(2-chloroisopropyl) ether	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
BIS(2-ETHYLHEXYL)PHTHALATE	0 / 4	0.0002 : 0.002		0.000425	0.0002 U		0.001 U	0.0002 U	0.002 U
CAPROLACTAM	0 / 4	0.001 : 0.01		0.001625	0.001 U		0.001 U	0.001 U	0.01 U
CARBAZOLE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
CHRYSENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
CRESOL,O	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
CRESOL,P	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
DIBENZO(A,H)ANTHRACENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
DIETHYL PHTHALATE	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
DIMETHYL PHTHALATE	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
DI-N-BUTYL PHTHALATE	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
DI-N-OCTYL PHTHALATE	0 / 4	0.0005 : 0.005		0.0008125	0.0005 U		0.0005 U	0.0005 U	0.005 U
FLUORANTHENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
FLUORENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
HEXACHLOROBENZENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
HEXACHLOROBUTADIENE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
HEXACHLOROCYCLOPENTADIENE	0 / 4	0.001 : 0.01		0.001625	0.001 U		0.001 U	0.001 U	0.01 U
HEXACHLOROETHANE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
INDENO(1,2,3-CD)PYRENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U

Attachment A-12
Summary of Analytical Results Representative of the Groundwater/Surface Water Interaction
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	GW-SW-3 GW-SW-3-2-3-121510 12/15/2010 2-3 ft	GW-SW-4 GW-SW-4-2.8-3.8-121510 12/15/2010 2.8-3.8 ft	GW-SW-5 GW-SW-5-1.5-2.5-121410 12/14/2010 1.5-2.5 ft	GW-SW-6 GW-SW-6-4-5-121410 12/14/2010 4-5 ft	GW-SW-7 GW-SW-7-2.5-3.5-121010 12/10/2010 2.5-3.5 ft
ISOPHORONE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
NAPHTHALENE	1 / 4	0.00005 : 0.0005	0.0002 - 0.0002	0.000125	0.0002		0.00005 U	0.00005 U	0.0005 U
NITROBENZENE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
N-NITROSODI-N-PROPYLAMINE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
N-NITROSODIPHENYLAMINE	0 / 4	0.0001 : 0.001		0.0001625	0.0001 U		0.0001 U	0.0001 U	0.001 U
PENTACHLOROPHENOL	0 / 4	0.0002 : 0.002		0.000325	0.0002 U		0.0002 U	0.0002 U	0.002 U
PHENANTHRENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
PHENOL	1 / 4	0.0001 : 0.001	0.0001 - 0.0001	0.000175	0.0001 U		0.0001	0.0001 U	0.001 U
PYRENE	0 / 4	0.00005 : 0.0005		0.00008125	0.00005 U		0.00005 U	0.00005 U	0.0005 U
Metals, Total (mg/L)									
ALUMINUM	4 / 4		16.4 - 7.11	7.87	3.52		7.11	4.45	16.4
ANTIMONY	0 / 4	0.01 : 0.01		0.005	0.0100 U		0.0100 U	0.0100 U	0.0100 U
ARSENIC	1 / 4	0.0098 : 0.0098	0.0118 - 0.0118	0.006625	0.0098 U		0.0098 U	0.0098 U	0.0118
BARIUM	4 / 4		0.0427 - 0.0932	0.0576	0.0427 J		0.0449 J	0.0932 J	0.0496
BERYLLIUM	4 / 4		0.0019 - 0.0062	0.004025	0.0056		0.0062	0.0019	0.0024
CADMIUM	1 / 4	0.002 : 0.002	0.0132 - 0.0132	0.00405	0.0132		0.0020 U	0.0020 U	0.0020 U
CALCIUM	4 / 4		10.3 - 6.06	6.4225	6.06		10.3	3.78	5.55
CHROMIUM	4 / 4		0.0036 - 0.0588	0.019	0.0036		0.0038	0.0098	0.0588
COBALT	4 / 4		0.0061 - 0.0584	0.02315	0.0216		0.0584	0.0065	0.0061
COPPER	3 / 4	0.0027 : 0.0027	0.0051 - 0.583	0.1595125	0.583		0.0027 U	0.0051	0.0486
IRON	4 / 4		0.73 - 87.2	35.6	0.730		5.27	49.2	87.2
LEAD	3 / 4	0.0069 : 0.0069	0.0072 - 0.0128	0.0083125	0.0098		0.0069 U	0.0072	0.0128
MAGNESIUM	4 / 4		2.31 - 4.95	3.6075	3.58		4.95	3.59	2.31
MANGANESE	4 / 4		0.19 - 0.719	0.357	0.247		0.719	0.190	0.272
MERCURY	0 / 4	0.00005 : 0.00005		0.000025	0.000050 U		0.000050 U	0.000050 U	0.000050 U
NICKEL	4 / 4		0.0184 - 0.0621	0.034225	0.0251		0.0621	0.0313	0.0184
POTASSIUM	4 / 4		1.88 - 3.31	2.43	1.88		2.55	1.98	3.31
SELENIUM	0 / 4	0.0089 : 0.0089		0.00445	0.0089 U		0.0089 U	0.0089 U	0.0089 U
SILVER	0 / 4	0.0023 : 0.0023		0.00115	0.0023 U		0.0023 U	0.0023 U	0.0023 U
SODIUM	4 / 4		10.1 - 9.98	11.195	10.1		14.0	10.7	9.98
THALLIUM	0 / 4	0.014 : 0.014		0.007	0.0140 U		0.0140 U	0.0140 U	0.0140 U
VANADIUM	4 / 4		0.0072 - 0.124	0.0645	0.0072		0.0751	0.0517	0.124
ZINC	4 / 4		0.414 - 1.63	0.9325	0.414		0.996	1.63	0.690
Metals, Dissolved (mg/L)									
ALUMINUM	3 / 4	0.0834 : 0.0834	0.0905 - 6.98	2.61805	3.36		6.98	0.0905	0.0834 U
ANTIMONY	0 / 4	0.01 : 0.01		0.005	0.0100 U		0.0100 U	0.0100 U	0.0100 U
ARSENIC	0 / 4	0.0098 : 0.0098		0.0049	0.0098 U		0.0098 U	0.0098 U	0.0098 U
BARIUM	4 / 4		0.0184 - 0.0785	0.046425	0.0435		0.0453	0.0785	0.0184
BERYLLIUM	3 / 4	0.0014 : 0.0014	0.0017 - 0.0063	0.003625	0.0058		0.0063	0.0017	0.0014 U
CADMIUM	1 / 4	0.002 : 0.002	0.0134 - 0.0134	0.0041	0.0134		0.0020 U	0.0020 U	0.0020 U
CALCIUM	4 / 4		10.3 - 5.88	6.1775	5.88 J		10.3 J	3.25 J	5.28
CHROMIUM	1 / 4	0.0034 : 0.0034	0.0034 - 0.0034	0.002125	0.0034 U		0.0034	0.0034 U	0.0034 U
COBALT	4 / 4		0.0049 - 0.0592	0.023225	0.0224		0.0592	0.0064	0.0049
COPPER	2 / 4	0.0027 : 0.0027	0.0053 - 0.595	0.15075	0.595 J		0.0027 U	0.0027 U	0.0053
IRON	3 / 4	0.0522 : 0.0522	22.5 - 5.29	13.779025	0.0522 U		5.29	27.3	22.5
LEAD	1 / 4	0.0069 : 0.0069	0.0091 - 0.0091	0.0048625	0.0091		0.0069 U	0.0069 U	0.0069 U
MAGNESIUM	4 / 4		1.78 - 4.83	2.9975	3.49 J		4.83 J	1.78 J	1.89
MANGANESE	4 / 4		0.185 - 0.731	0.35425	0.252		0.731	0.185	0.249

Attachment A-12
Summary of Analytical Results Representative of the Groundwater/Surface Water Interaction
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

chemical_name	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average of All Samples	GW-SW-3 GW-SW-3-2-3-121510 12/15/2010 2-3 ft	GW-SW-4 GW-SW-4-2.8-3.8-121510 12/15/2010 2.8-3.8 ft	GW-SW-5 GW-SW-5-1.5-2.5-121410 12/14/2010 1.5-2.5 ft	GW-SW-6 GW-SW-6-4-5-121410 12/14/2010 4-5 ft	GW-SW-7 GW-SW-7-2.5-3.5-121010 12/10/2010 2.5-3.5 ft
MERCURY	0 / 4	0.00005 : 0.00005		0.000025	0.000050 U		0.000050 U	0.000050 U	0.000050 U
NICKEL	4 / 4		0.0061 - 0.0642	0.03035	0.0239		0.0642	0.0272	0.0061
POTASSIUM	4 / 4		1.35 - 2.47	1.8925	1.85		2.47	1.35	1.90
SELENIUM	0 / 4	0.0089 : 0.0089		0.00445	0.0089 U		0.0089 U	0.0089 U	0.0089 U
SILVER	0 / 4	0.0023 : 0.0023		0.00115	0.0023 U		0.0023 U	0.0023 U	0.0023 U
SODIUM	4 / 4		13 - 9.84	9.715	9.27		13.0	6.75	9.84
THALLIUM	0 / 4	0.014 : 0.014		0.007	0.0140 U		0.0140 U	0.0140 U	0.0140 U
VANADIUM	2 / 4	0.0025 : 0.0025	0.0043 - 0.0648	0.0179	0.0043		0.0648	0.0025 U	0.0025 U
ZINC	4 / 4		0.418 - 1.57	0.86775	0.418		0.958	1.57	0.525

mg/L = milligram per liter
U = not detected, value is the reporting limit
J = value is estimated

Prepared by / Date: KJC 11/06/13
Checked by / Date: MW 12/10/13

Attachment A-13
Laboratory Analytical Data - On-site Indoor Air, Ambient Air, and Soil Gas
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

Chemical	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average [1]	IA-01 IA-01-091609 9/16/2009	IA-02 IA-02-091609 9/16/2009	IA-03 IA-03 DUP-091609 9/16/2009	IA-03 IA-03-091609 9/16/2009	IA-04 IA-04-091609 9/16/2009	IA-BG-05 IA-BG-05-091609 9/16/2009	IA-BG-06 IA-BG-06-091609 9/16/2009	IA-BG-07 IA-BG-07-091609 9/16/2009	SG-01 SG-01-091709 9/17/2009	SG-02 SG-02-091709 9/17/2009	SG-03 SG-03 DUP-091709 9/17/2009	SG-03 SG-03-091709 9/17/2009	SG-04 SG-04-091709 9/17/2009
Volatile Organics (mg/m³)																	
1,1,1-TRICHLOROETHANE	0 / 13	0.00014 : 0.0016		0.00021	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.0011 U	0.0016 U	0.00053 U	0.00053 U	0.00053 U
1,1,2,2-TETRACHLOROETHANE	0 / 13	0.00016 : 0.0019		0.00024	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.0012 U	0.0019 U	0.00062 U	0.00062 U	0.00062 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5 / 13	0.00017 : 0.0021	0.00092 - 0.0026	0.0008	0.0014 J	0.0021	0.00092 J	0.00017 U	0.001 J	0.00017 U	0.0026	0.00017 U	0.0014 U	0.0021 U	0.00067 U	0.00067 U	0.00067 U
1,1,2-TRICHLOROETHANE	0 / 13	0.00011 : 0.0014		0.00018	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00093 U	0.0014 U	0.00046 U	0.00046 U	0.00046 U
1,1-DICHLOROETHANE	0 / 13	0.00013 : 0.0016		0.00021	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.0011 U	0.0016 U	0.00053 U	0.00053 U	0.00053 U
1,1-DICHLOROETHYLENE	0 / 13	0.00017 : 0.0021		0.00027	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.0014 U	0.0021 U	0.00071 U	0.00071 U	0.00071 U
1,2,4-TRICHLOROBENZENE	0 / 13	0.00048 : 0.0059		0.00074	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.00048 U	0.0039 U	0.0059 U	0.0019 U	0.0019 U	0.0019 U
1,2,4-TRIMETHYLBENZENE	12 / 13	0.0001 : 0.0001	0.0011 - 0.152	0.032	0.0017	0.0022	0.0014	0.0012	0.0026	0.0024	0.0011	0.0001 U	0.0708	0.152	0.0762	0.043	0.0585
1,2-CIS-DICHLOROETHYLENE	0 / 13	0.00011 : 0.0014		0.00017	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00091 U	0.0014 U	0.00044 U	0.00044 U	0.00044 U
1,2-DIBROMOETHANE	0 / 13	0.00016 : 0.0019		0.00024	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.0012 U	0.0019 U	0.00063 U	0.00063 U	0.00063 U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0 / 13	0.00015 : 0.0019		0.00024	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.0013 U	0.0019 U	0.00062 U	0.00062 U	0.00062 U
1,2-DICHLOROBENZENE	0 / 13	0.00022 : 0.0028		0.00035	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.00022 U	0.0018 U	0.0028 U	0.0009 U	0.0009 U	0.0009 U
1,2-DICHLOROETHANE	0 / 13	0.00015 : 0.0018		0.00023	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.00015 U	0.0012 U	0.0018 U	0.00057 U	0.00057 U	0.00057 U
1,2-DICHLOROPROPANE	0 / 13	0.00013 : 0.0016		0.00020	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.00013 U	0.0011 U	0.0016 U	0.00051 U	0.00051 U	0.00051 U
1,2-TRANS-DICHLOROETHYLENE	0 / 13	0.00014 : 0.0017		0.00022	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.0011 U	0.0017 U	0.00056 U	0.00056 U	0.00056 U
1,3,5-TRIMETHYLBENZENE	8 / 13	0.00013 : 0.00013	0.00059 - 0.035	0.007	0.00013 U	0.00059 J	0.00013 U	0.00013 U	0.00069 J	0.00059 J	0.00013 U	0.00013 U	0.016	0.035	0.016	0.0088	0.013
1,3-Butadiene	0 / 13	0.00008 : 0.00097		0.00012	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00064 U	0.00097 U	0.00031 U	0.00031 U	0.00031 U
1,3-CIS-DICHLOROPROPYLENE	0 / 13	0.000086 : 0.001		0.00013	0.000086 U	0.000086 U	0.000086 U	0.000086 U	0.000086 U	0.000086 U	0.000086 U	0.000086 U	0.00068 U	0.001 U	0.00035 U	0.00035 U	0.00035 U
1,3-DICHLOROBENZENE	0 / 13	0.00019 : 0.0023		0.00029	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.0015 U	0.0023 U	0.00078 U	0.00078 U	0.00078 U
1,3-TRANS-DICHLOROPROPYLENE	0 / 13	0.000073 : 0.00091		0.00011	0.000073 U	0.000073 U	0.000073 U	0.000073 U	0.000073 U	0.000073 U	0.000073 U	0.000073 U	0.00059 U	0.00091 U	0.00029 U	0.00029 U	0.00029 U
1,4-DICHLOROBENZENE	0 / 13	0.00019 : 0.0023		0.00030	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.0016 U	0.0023 U	0.00078 U	0.00078 U	0.00078 U
1,4-DIOXANE	0 / 13	0.00023 : 0.0028		0.00035	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.0018 U	0.0028 U	0.0009 U	0.0009 U	0.0009 U
1-Ethyl-4-methylbenzene	6 / 13	0.00021 : 0.00021	0.00054 - 0.0669	0.014	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00054 J	0.00021 U	0.00021 U	0.00021 U	0.029	0.0669	0.035	0.019	0.026
2,2,4-Trimethylpentane	8 / 13	0.000093 : 0.00038	0.00084 - 0.024	0.00321	0.0015	0.0016	0.0011	0.00084 J	0.0016	0.0011	0.000093 U	0.000093 U	0.0093	0.024	0.00038 U	0.00038 U	0.00038 U
2-CHLOROTOLUENE	0 / 13	0.00011 : 0.0014		0.00017	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00088 U	0.0014 U	0.00045 U	0.00045 U	0.00045 U
2-HEXANONE	5 / 13	0.00012 : 0.00012	0.0053 - 0.029	0.005	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.007	0.029	0.0061	0.0053	0.011
3-CHLOROPROPENE	0 / 13	0.000097 : 0.0012		0.00015	0.000097 U	0.000097 U	0.000097 U	0.000097 U	0.000097 U	0.000097 U	0.000097 U	0.000097 U	0.00078 U	0.0012 U	0.00038 U	0.00038 U	0.00038 U
ACETONE	13 / 13		0.012 - 0.186	0.042	0.017	0.0314	0.0335	0.013	0.0259	0.017	0.02	0.012	0.022	0.0934	0.038	0.0397	0.186
BENZENE	12 / 13	0.000067 : 0.000067	0.00048 - 0.0939	0.013	0.00093	0.0012	0.0008	0.00077	0.0012	0.00077	0.00048 J	0.000067 U	0.02	0.0939	0.019	0.014	0.016
Benzyl Chloride	0 / 13	0.00017 : 0.0021		0.00026	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.00017 U	0.0014 U	0.0021 U	0.00067 U	0.00067 U	0.00067 U
Bromoethene	0 / 13	0.000079 : 0.00096		0.00012	0.000079 U	0.000079 U	0.000079 U	0.000079 U	0.000079 U	0.000079 U	0.000079 U	0.000079 U	0.00066 U	0.00096 U	0.00032 U	0.00032 U	0.00032 U
BROMOFORM	0 / 13	0.00023 : 0.0028		0.00036	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.00023 U	0.0019 U	0.0028 U	0.00091 U	0.00091 U	0.00091 U
CARBON DISULFIDE	3 / 13	0.00011 : 0.00084	0.0021 - 0.0779	0.00779	0.00011 U	0.00011 U	0.0021	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00084 U	0.0779	0.0004 U	0.0004 U	0.02
CARBON TETRACHLORIDE	1 / 13	0.00014 : 0.0017	0.00075 - 0.00075	0.0003	0.00014 U	0.00014 U	0.00075 J	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.0011 U	0.0017 U	0.00055 U	0.00055 U	0.00055 U
CHLOROBENZENE	0 / 13	0.00012 : 0.0015		0.00019	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00097 U	0.0015 U	0.00046 U	0.00046 U	0.00046 U
CHLORODIBROMOMETHANE	0 / 13	0.00029 : 0.0036		0.00046	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.00029 U	0.0024 U	0.0036 U	0.0012 U	0.0012 U	0.0012 U
CHLOROETHANE	0 / 13	0.00011 : 0.0013		0.00016	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00011 U	0.00084 U	0.0013 U	0.00042 U	0.00042 U	0.00042 U
CHLOROFORM	5 / 13	0.00014 : 0.00014	0.021 - 0.209	0.038	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.00014 U	0.03	0.202	0.021	0.034	0.209
CYCLOHEXANE	0 / 13	0.00021 : 0.0026		0.00033	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.00021 U	0.0017 U	0.0026 U	0.00083 U	0.00083 U	0.00083 U
DICHLOROBROMOMETHANE	0 / 13	0.00019 : 0.0023		0.00029	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.00019 U	0.0015 U	0.0023 U	0.00074 U	0.00074 U	0.00074 U
DICHLORODIFLUOROMETHANE	0 / 13	0.00012 : 0.0014		0.0002	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00012 U	0.00094 U	0.0014 U	0.00047 U	0.00047 U	0.00047 U
Ethanol	13 / 13		0.0032 - 0.092	0.027	0.0224	0.014	0.015	0.011	0.015	0.0075	0.092	0.0032	0.02	0.0431	0.0364	0.0232	0.045
Ethyl acetate	3 / 13	0.00018 : 0.0023	0.0028 - 0.024	0.003	0.0028	0.0083	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.0015 U	0.0023 U	0.00076 U	0.00076 U	0.024
ETHYLBENZENE	11 / 13	0.000083 : 0.000083	0.00048 - 0.221	0.036	0.00065 J	0.00083 J	0.00048 J	0.00052 J	0.00096	0.00052 J	0.000083 U	0.000083 U	0.073	0.221	0.0695	0.042	0.0647
Heptane	10 / 13	0.00011 : 0.00011	0.00066 - 0.0475	0.0061	0.0009	0.001	0.00011 U	0.0007 J	0.00094	0.00066 J	0.00011 U	0.00011 U	0.0082	0.0475	0.0074	0.0057	0.0066
HEXACHLOROBUTADIENE	0 / 13	0.00046 : 0.0057		0.00071	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.00046 U	0.0036 U	0.0057 U	0.0018 U	0.0018 U	0.0018 U
Hexane (n-Hexane)	11 / 13	0.000067 : 0.000067	0.0014 - 0.0412	0.0066	0.0033	0.0028	0.0014	0.0015	0.0025	0.0015	0.000067 U	0.000067 U	0.01	0.0412	0.0088	0.007	0.0056
ISOPROPANOL	3 / 13	0.000086 : 0.001	0.0013 - 0.011	0.001	0.000086 U	0.0013	0.000086 U	0.000086 U	0.000086 U	0.000086 U	0.0054	0.000086 U	0.00069 U	0.001 U	0.00034 U	0.00034 U	0.011
M+P-XYLENE	12 / 13	0.0002 : 0.0002	0.0011 - 0.804	0.14	0.0023	0.003	0.0018	0.0017	0.0035	0.002	0.0011	0.0002 U	0.298	0.804	0.296	0.178	0.26
METHYL BROMIDE	0 / 13	0.000093 : 0.0011		0.00014	0.000093 U	0.000093 U	0.000093 U	0.000093 U	0.000093 U	0.000093 U	0.000093 U	0.000093 U	0.00074 U	0.0011 U	0.00037 U	0.00037 U	0.00037 U
METHYL CHLORIDE	8 / 13	0.00039 : 0.0012	0.0011 - 0.0035	0.00117	0.0012	0.0035	0.0019	0.0014	0.0012	0.0012	0.0021	0.0011	0.00078 U	0.0012 U	0.00039 U	0.00039 U	0.00039 U
METHYL ETHYL KETONE	13 / 13		0.00065 - 0.0879	0.017	0.0014	0.0041	0.0032	0.0012	0.0035	0.0013	0.0021	0.00065	0.016	0.0879	0.021	0.018	0.0575
METHYL ISOBUTYL KETONE	3 / 13	0.00018 : 0.0015	0.00049 - 0.011	0.00159	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00018 U	0.00049 J	0.00018 U	0.0015 U	0.011	0.00074 U	0.00074 U	0.007
METHYLENE CHLORIDE	9 / 13	0.000087 : 0.0011	0.00063 - 0.0032	0.0014	0.0016	0.0012	0.0014	0.0013	0.00063 J	0.000087 U	0.002	0.000087 U	0.00069 U	0.0011 U	0.0032	0.0029	0.0031
METHYL-T-BUTYL ETHER	6 / 13	0.000079 : 0.00097	0.001 - 0.004	0.00123	0.004	0.0025	0.0012	0.000079 U	0.0021	0.001	0.000079 U	0.000079 U	0.00065 U	0.00097 U	0.00032 U	0.00032 U	0.004
O-XYLENE	12 / 13	0.0001 : 0.0001	0.00048 - 0.185	0.034	0.00078 J	0.001	0.00069 J	0.00061 J	0.0012	0.00069 J	0.00048 J	0.0001 U	0.0738	0.185	0.0682	0.04	0.0639
PROPYLENE (PROPENE)	1 / 13	0.0001 : 0.0013	0.0191 - 0.0191	0.0016	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.00084 U	0.0013 U	0.00043 U	0.00043 U	0.0191
STYRENE	1 / 13	0.000077 : 0.00098	0.0021 - 0.0021	0.0003	0.000077 U	0.000077 U	0.000077 U	0.000077 U	0.000077 U	0.000077 U	0.000077 U	0.000077 U	0.00064 U	0.00098 U	0.00032 U	0.00032 U	0.0021 J
t-Butyl Alcohol	1 / 13	0.00007 : 0.00085	0.0055 - 0.0055	0.0005	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00007 U	0.00055 U	0.00085 U	0.00028 U	0.00028 U	0.0055
TETRACHLOROETHYLENE	10 / 13	0.00014 : 0.00014	0.00034 - 0.936	0.0808	0.00014 U	0.00075	0.00075	0.00014 U	0.00047	0.00054	0.00034	0.00014 U	0.936	0.104	0.0023	0.0015	0.0031
TETRAHYDROFURAN	1 / 13	0.000094 : 0.0012	0.00062 - 0.00062	0.00019	0.000094 U	0.000094 U	0.00062	0.000094 U	0.000094 U	0.000094 U	0.000094 U	0.000094 U	0.00074 U	0.0012 U	0.00038 U	0.00038 U	0.00038 U
TOLUENE	13 / 13		0.00049 - 2.65	0.47	0.0034	0.0041	0.0024	0.0029	0.0045	0.0026	0.0014	0.00049 J	1.04	2.65	1.01	0.72	0.675
TRICHLOROETHYLENE	2 / 13	0.0001 : 0.0012	0.0011 - 0.0028	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0028	0.0012 U	0.0004 U	0.0004 U	0.0011

Attachment A-13
Laboratory Analytical Data - On-site Indoor Air, Ambient Air, and Soil Gas
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

Chemical	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average [1]	IA-01 IA-01-091609 9/16/2009	IA-02 IA-02-091609 9/16/2009	IA-03 IA-03 DUP-091609 9/16/2009	IA-03 IA-03-091609 9/16/2009	IA-04 IA-04-091609 9/16/2009	IA-BG-05 IA-BG-05-091609 9/16/2009	IA-BG-06 IA-BG-06-091609 9/16/2009	IA-BG-07 IA-BG-07-091609 9/16/2009	SG-01 SG-01-091709 9/17/2009	SG-02 SG-02-091709 9/17/2009	SG-03 SG-03 DUP-091709 9/17/2009	SG-03 SG-03-091709 9/17/2009	SG-04 SG-04-091709 9/17/2009
TRICHLOROFLUOROMETHANE	10 / 13	0.00048 : 0.0015	0.0013 - 0.0062	0.0024	0.0041	0.0019	0.0041	0.0025	0.0015	0.0015	0.0062	0.0013	0.00096 U	0.0015 U	0.0033 J	0.00048 U	0.0034 J
VINYL ACETATE	0 / 13	0.00016 : 0.002		0.00025	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.00016 U	0.0013 U	0.002 U	0.00063 U	0.00063 U	0.00063 U
VINYL CHLORIDE	0 / 13	0.000059 : 0.00072		0.00009	0.000059 U	0.000059 U	0.000059 U	0.000059 U	0.000059 U	0.000059 U	0.000059 U	0.000059 U	0.00046 U	0.00072 U	0.00024 U	0.00024 U	0.00024 U
XYLENES,TOTAL	12 / 13	0.0001 : 0.0001	0.0016 - 0.986	0.18	0.003	0.004	0.0025	0.0023	0.0048	0.0026	0.0016	0.0001 U	0.371	0.986	0.364	0.218	0.324
Volatile Organics (ppbv)																	
1,1,1-TRICHLOROETHANE	0 / 13	0.025 : 0.3		0.038	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.025 U	0.2 U	0.3 U	0.098 U	0.098 U	0.098 U
1,1,2,2-TETRACHLOROETHANE	0 / 13	0.023 : 0.28		0.035	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.18 U	0.28 U	0.091 U	0.091 U	0.091 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	5 / 13	0.022 : 0.27	0.12 - 0.34	0.11	0.18 J	0.28	0.12 J	0.022 U	0.13 J	0.022 U	0.34	0.022 U	0.18 U	0.27 U	0.088 U	0.088 U	0.088 U
1,1,2-TRICHLOROETHANE	0 / 13	0.021 : 0.26		0.033	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.17 U	0.26 U	0.085 U	0.085 U	0.085 U
1,1-DICHLOROETHANE	0 / 13	0.032 : 0.4		0.050	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.26 U	0.4 U	0.13 U	0.13 U	0.13 U
1,1-DICHLOROETHYLENE	0 / 13	0.044 : 0.54		0.069	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.044 U	0.35 U	0.54 U	0.18 U	0.18 U	0.18 U
1,2,4-TRICHLOROBENZENE	0 / 13	0.065 : 0.8		0.10	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.065 U	0.52 U	0.8 U	0.26 U	0.26 U	0.26 U
1,2,4-TRIMETHYLBENZENE	12 / 13	0.021 : 0.021	0.23 - 30.9	6.5	0.34	0.44	0.28	0.24	0.53	0.48	0.23	0.021 U	14.4	30.9	15.5	8.8	11.9
1,2-CIS-DICHLOROETHYLENE	0 / 13	0.028 : 0.35		0.044	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.23 U	0.35 U	0.11 U	0.11 U	0.11 U
1,2-DIBROMOETHANE	0 / 13	0.021 : 0.25		0.032	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.021 U	0.16 U	0.25 U	0.082 U	0.082 U	0.082 U
1,2-Dichloro-1,1,2,2-tetrafluoroethane	0 / 13	0.022 : 0.27		0.034	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.18 U	0.27 U	0.088 U	0.088 U	0.088 U
1,2-DICHLOROBENZENE	0 / 13	0.037 : 0.46		0.058	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.037 U	0.3 U	0.46 U	0.15 U	0.15 U	0.15 U
1,2-DICHLOROETHANE	0 / 13	0.036 : 0.44		0.055	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.29 U	0.44 U	0.14 U	0.14 U	0.14 U
1,2-DICHLOROPROPANE	0 / 13	0.029 : 0.35		0.044	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.029 U	0.23 U	0.35 U	0.11 U	0.11 U	0.11 U
1,2-TRANS-DICHLOROETHYLENE	0 / 13	0.035 : 0.43		0.054	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	0.035 U	0.28 U	0.43 U	0.14 U	0.14 U	0.14 U
1,3,5-TRIMETHYLBENZENE	8 / 13	0.026 : 0.026	0.12 - 7.1	1.4	0.026 U	0.12 J	0.026 U	0.026 U	0.14 J	0.12 J	0.026 U	0.026 U	3.3	7.1	3.3	1.8	2.7
1,3-Butadiene	0 / 13	0.036 : 0.44		0.055	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.036 U	0.29 U	0.44 U	0.14 U	0.14 U	0.14 U
1,3-CIS-DICHLOROPROPYLENE	0 / 13	0.019 : 0.23		0.029	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.15 U	0.23 U	0.076 U	0.076 U	0.076 U
1,3-DICHLOROBENZENE	0 / 13	0.032 : 0.39		0.049	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.25 U	0.39 U	0.13 U	0.13 U	0.13 U
1,3-TRANS-DICHLOROPROPYLENE	0 / 13	0.016 : 0.2		0.025	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.016 U	0.13 U	0.2 U	0.064 U	0.064 U	0.064 U
1,4-DICHLOROBENZENE	0 / 13	0.032 : 0.39		0.050	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.26 U	0.39 U	0.13 U	0.13 U	0.13 U
1,4-DIOXANE	0 / 13	0.063 : 0.77		0.10	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.063 U	0.5 U	0.77 U	0.25 U	0.25 U	0.25 U
1-Ethyl-4-methylbenzene	6 / 13	0.043 : 0.043	0.11 - 13.6	2.8	0.043 U	0.043 U	0.043 U	0.043 U	0.11 J	0.043 U	0.043 U	0.043 U	5.9	13.6	7.1	3.8	5.3
2,2,4-Trimethylpentane	8 / 13	0.02 : 0.081	0.18 - 5.2	0.692	0.32	0.35	0.23	0.18 J	0.35	0.23	0.02 U	0.02 U	2	5.2	0.081 U	0.081 U	0.081 U
2-CHLOROTOLUENE	0 / 13	0.022 : 0.27		0.034	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.17 U	0.27 U	0.087 U	0.087 U	0.087 U
2-HEXANONE	5 / 13	0.03 : 0.03	1.3 - 7.1	1.1	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	0.03 U	1.7	7.1	1.5	1.3	2.6
3-CHLOROPROPENE	0 / 13	0.031 : 0.38		0.048	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	0.031 U	0.25 U	0.38 U	0.12 U	0.12 U	0.12 U
ACETONE	13 / 13		5.1 - 78.5	18	7.3	13.2	14.1	5.4	10.9	7.1	8.5	5.1	9.4	39.3	16	16.7	78.5
BENZENE	12 / 13	0.021 : 0.021	0.15 - 29.4	4.1	0.29	0.36	0.25	0.24	0.36	0.24	0.15 J	0.021 U	6.3	29.4	6	4.5	5
Benzyl Chloride	0 / 13	0.033 : 0.41		0.051	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.033 U	0.27 U	0.41 U	0.13 U	0.13 U	0.13 U
Bromoethene	0 / 13	0.018 : 0.22		0.028	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.15 U	0.22 U	0.073 U	0.073 U	0.073 U
BROMOFORM	0 / 13	0.022 : 0.27		0.034	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.18 U	0.27 U	0.088 U	0.088 U	0.088 U
CARBON DISULFIDE	3 / 13	0.034 : 0.27	0.68 - 25	2.490	0.034 U	0.034 U	0.68	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.27 U	25	0.13 U	0.13 U	6.3
CARBON TETRACHLORIDE	1 / 13	0.022 : 0.27	0.12 - 0.12	0.04	0.022 U	0.022 U	0.12 J	0.022 U	0.022 U	0.022 U	0.022 U	0.022 U	0.18 U	0.27 U	0.088 U	0.088 U	0.088 U
CHLOROBENZENE	0 / 13	0.026 : 0.32		0.040	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.026 U	0.21 U	0.32 U	0.1 U	0.1 U	0.1 U
CHLORODIBROMOMETHANE	0 / 13	0.034 : 0.42		0.054	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.034 U	0.28 U	0.42 U	0.14 U	0.14 U	0.14 U
CHLOROETHANE	0 / 13	0.04 : 0.49		0.062	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.32 U	0.49 U	0.16 U	0.16 U	0.16 U
CHLOROFORM	5 / 13	0.028 : 0.028	4.3 - 42.9	7.8	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	6.1	41.4	4.3	6.9	42.9
CYCLOHEXANE	0 / 13	0.061 : 0.75		0.09	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.49 U	0.75 U	0.24 U	0.24 U	0.24 U
DICHLOROBROMOMETHANE	0 / 13	0.028 : 0.34		0.043	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.028 U	0.22 U	0.34 U	0.11 U	0.11 U	0.11 U
DICHLORODIFLUOROMETHANE	0 / 13	0.024 : 0.29		0.04	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.19 U	0.29 U	0.095 U	0.095 U	0.095 U
Ethanol	13 / 13		1.7 - 48.8	14	11.9	7.5	7.8	6.1	8	4	48.8	1.7	10.6	22.9	19.3	12.3	23.9
Ethyl acetate	3 / 13	0.051 : 0.63	0.78 - 6.6	0.8	0.78	2.3	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.051 U	0.41 U	0.63 U	0.21 U	0.21 U	6.6
ETHYLBENZENE	11 / 13	0.019 : 0.019	0.11 - 50.9	8.4	0.15 J	0.19 J	0.11 J	0.12 J	0.22	0.12 J	0.019 U	0.019 U	16.8	50.9	16	9.7	14.9
Heptane	10 / 13	0.026 : 0.026	0.16 - 11.6	1.5	0.22	0.25	0.026 U	0.17 J	0.23	0.16 J	0.026 U	0.026 U	2	11.6	1.8	1.4	1.6
HEXACHLOROBUTADIENE	0 / 13	0.043 : 0.53		0.066	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.34 U	0.53 U	0.17 U	0.17 U	0.17 U
Hexane (n-Hexane)	11 / 13	0.019 : 0.019	0.39 - 11.7	1.9	0.95	0.8	0.39	0.42	0.7	0.42	0.019 U	0.019 U	2.9	11.7	2.5	2	1.6
ISOPROPANOL	3 / 13	0.035 : 0.42	0.52 - 4.4	0.6	0.035 U	0.52	0.035 U	0.035 U	0.035 U	0.035 U	2.2	0.035 U	0.28 U	0.42 U	0.14 U	0.14 U	4.4
M+P-XYLENE	12 / 13	0.045 : 0.045	0.26 - 185	33	0.52	0.69	0.41	0.39	0.8	0.45	0.26	0.045 U	68.6	185	68.1	41	59.9
METHYL BROMIDE	0 / 13	0.024 : 0.29		0.037	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.024 U	0.19 U	0.29 U	0.096 U	0.096 U	0.096 U
METHYL CHLORIDE	8 / 13	0.19 : 0.57	0.51 - 1.7	0.567	0.6	1.7	0.93	0.7	0.59	0.58	1	0.51	0.38 U	0.57 U	0.19 U	0.19 U	0.19 U
METHYL ETHYL KETONE	13 / 13		0.22 - 29.8	5.7	0.47	1.4	1.1	0.4	1.2	0.45	0.72	0.22	5.4	29.8	7	6.1	19.5
METHYL ISOBUTYL KETONE	3 / 13	0.045 : 0.36	0.12 - 2.6	0.380	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.045 U	0.12 J	0.045 U	0.36 U	2.6	0.18 U	0.18 U	1.7
METHYLENE CHLORIDE	9 / 13	0.025 : 0.31	0.18 - 0.92	0.41	0.45	0.35	0.41	0.37	0.18 J	0.025 U	0.57	0.025 U	0.2 U	0.31 U	0.92	0.84	0.9
METHYL-T-BUTYL ETHER	6 / 13	0.022 : 0.27	0.29 - 1.1	0.340	1.1	0.68	0.33	0.022 U	0.57	0.29	0.022 U	0.022 U	0.18 U	0.27 U	0.089 U	0.089 U	1.1
O-XYLENE	12 / 13	0.023 : 0.023	0.11 - 42.6	7.7	0.18 J	0.24	0.16 J	0.14 J	0.28	0.16 J	0.11 J	0.023 U	17	42.6	15.7	9.3	14.7
PROPYLENE (PROPENE)	1 / 13	0.061 : 0.75	11.1 - 11.1	0.94	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.061 U	0.49 U	0.75 U	0.25 U	0.25 U	11.1
STYRENE	1 / 13	0.018 : 0.23	0.49 - 0.49	0.06	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.018 U	0.15 U	0.23 U	0.074 U	0.074 U	0.49 J
t-Butyl Alcohol	1 / 13	0.023 : 0.28	1.8 - 1.8	0.17	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.18 U	0.28 U	0.092 U	0.092 U	1.8

Attachment A-13
Laboratory Analytical Data - On-site Indoor Air, Ambient Air, and Soil Gas
Baseline Human Health Risk Assessment
CPS / Madison Superfund Site
Old Bridge, NJ

Chemical	Frequency of Detection	Range of Reporting Limits for Non-Detects	Range of Detected Concentrations	Average [1]	IA-01 IA-01-091609 9/16/2009	IA-02 IA-02-091609 9/16/2009	IA-03 IA-03 DUP-091609 9/16/2009	IA-03 IA-03-091609 9/16/2009	IA-04 IA-04-091609 9/16/2009	IA-BG-05 IA-BG-05-091609 9/16/2009	IA-BG-06 IA-BG-06-091609 9/16/2009	IA-BG-07 IA-BG-07-091609 9/16/2009	SG-01 SG-01-091709 9/17/2009	SG-02 SG-02-091709 9/17/2009	SG-03 SG-03 DUP-091709 9/17/2009	SG-03 SG-03-091709 9/17/2009	SG-04 SG-04-091709 9/17/2009
TETRACHLOROETHYLENE	10 / 13	0.021 : 0.021	0.05 - 138	11.9	0.021 U	0.11	0.11	0.021 U	0.07	0.08	0.05	0.021 U	138	15.4	0.34	0.22	0.46
TETRAHYDROFURAN	1 / 13	0.032 : 0.39	0.21 - 0.21	0.064	0.032 U	0.032 U	0.21	0.032 U	0.032 U	0.032 U	0.032 U	0.032 U	0.25 U	0.39 U	0.13 U	0.13 U	0.13 U
TOLUENE	13 / 13		0.13 - 702	125	0.89	1.1	0.65	0.76	1.2	0.69	0.36	0.13 J	275	702	269	191	179
TRICHLOROETHYLENE	2 / 13	0.019 : 0.23	0.21 - 0.52	0.08	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.019 U	0.52	0.23 U	0.074 U	0.074 U	0.21
TRICHLOROFLUOROMETHANE	10 / 13	0.085 : 0.26	0.24 - 1.1	0.43	0.73	0.33	0.73	0.44	0.27	0.27	1.1	0.24	0.17 U	0.26 U	0.58 J	0.085 U	0.6 J
VINYL ACETATE	0 / 13	0.046 : 0.56		0.070	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.046 U	0.36 U	0.56 U	0.18 U	0.18 U	0.18 U
VINYL CHLORIDE	0 / 13	0.023 : 0.28		0.035	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.023 U	0.18 U	0.28 U	0.092 U	0.092 U	0.092 U
XYLENES,TOTAL	12 / 13	0.023 : 0.023	0.37 - 227	40	0.7	0.93	0.57	0.53	1.1	0.61	0.37	0.023 U	85.5	227	83.7	50.3	74.6

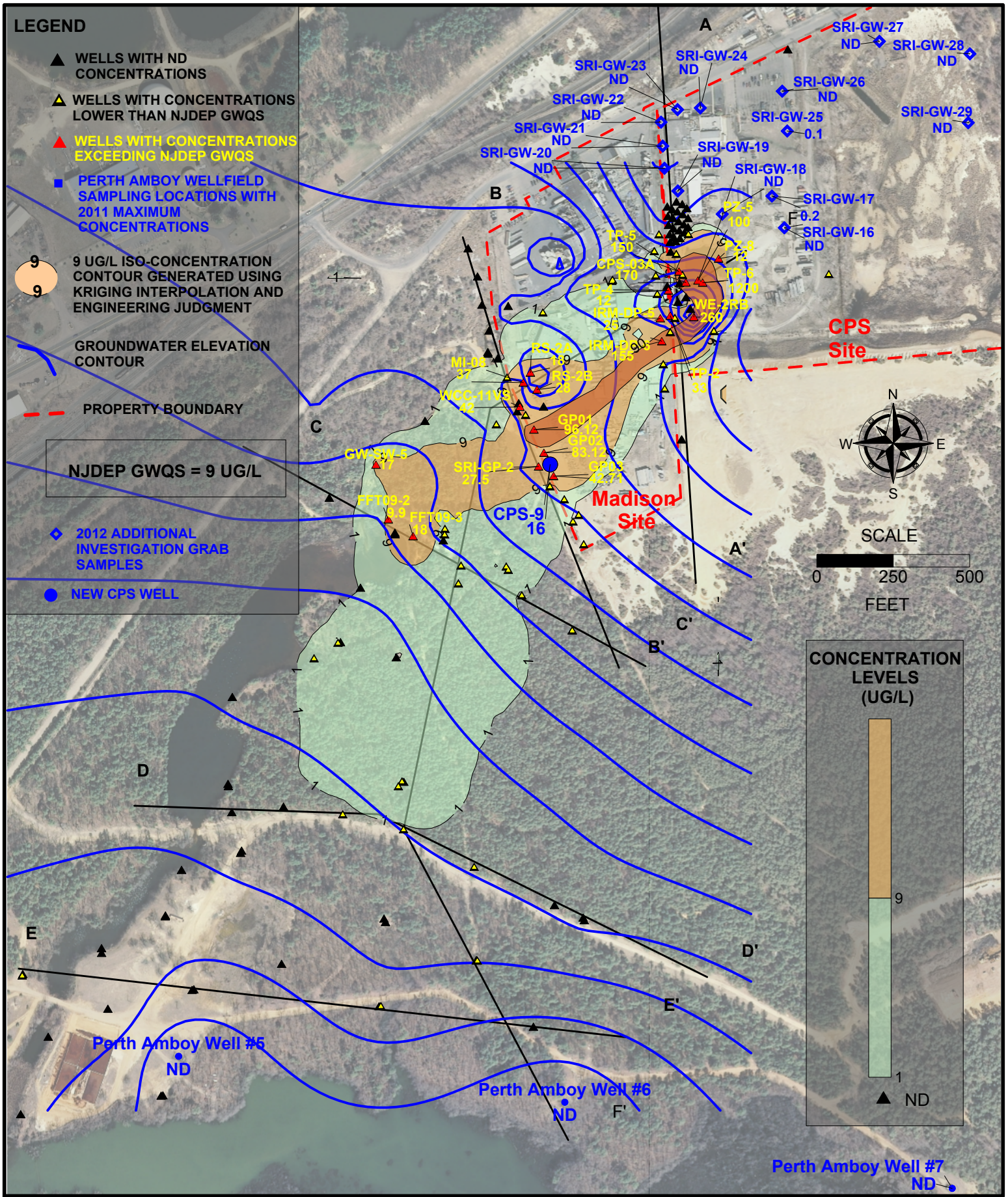
Notes:
[1] Average calculated using 1/2 the reporting limit for non-detects
mg/m³ - milligram per cubic meter
ppbv = parts per billion by volume
U - not detected, value is reporting limit
J - value is estimated concentration

Prepared by / Date: KJC 12/12/13
Checked by / Date: KMW 12/13/13

Attachment B

Figures

This attachment has been included to facilitate review of the BHHRA. In the final RI and BHHRA, the text of the BHHRA will refer to RI Report figures. Therefore, this attachment will not be included in the final BHHRA.



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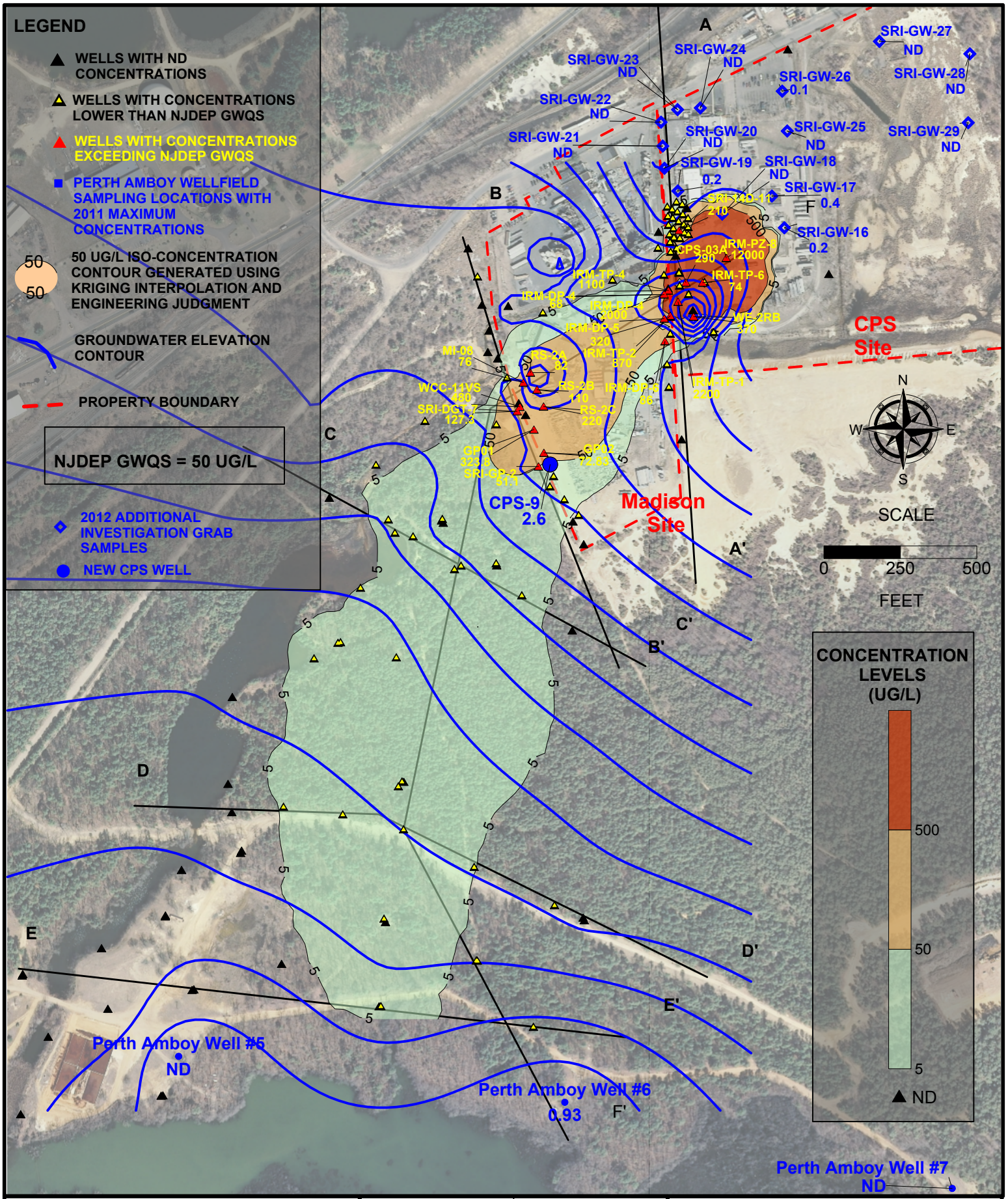
PROJECT NO.: 08104	FILE NAME: 124tcb-planview

FIGURE 25A
1,2,4-TRICHLOROBENZENE
IN GROUNDWATER - PLAN VIEW

CPS/MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY



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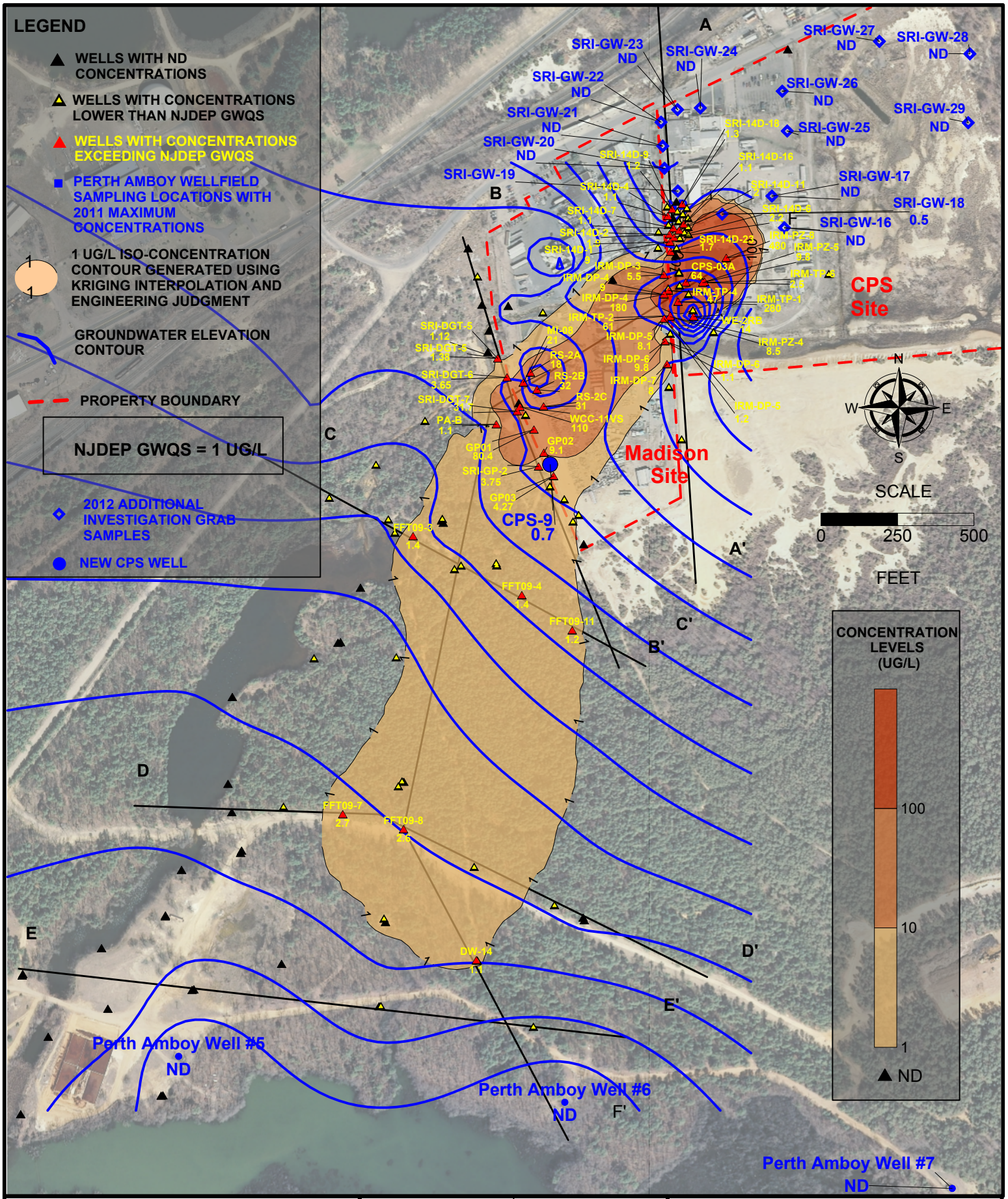
PROJECT NO.: 08104	FILE NAME: cb-planview

FIGURE 26A
CHLOROBENZENE
IN GROUNDWATER
PLAN VIEW

CPS/MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY



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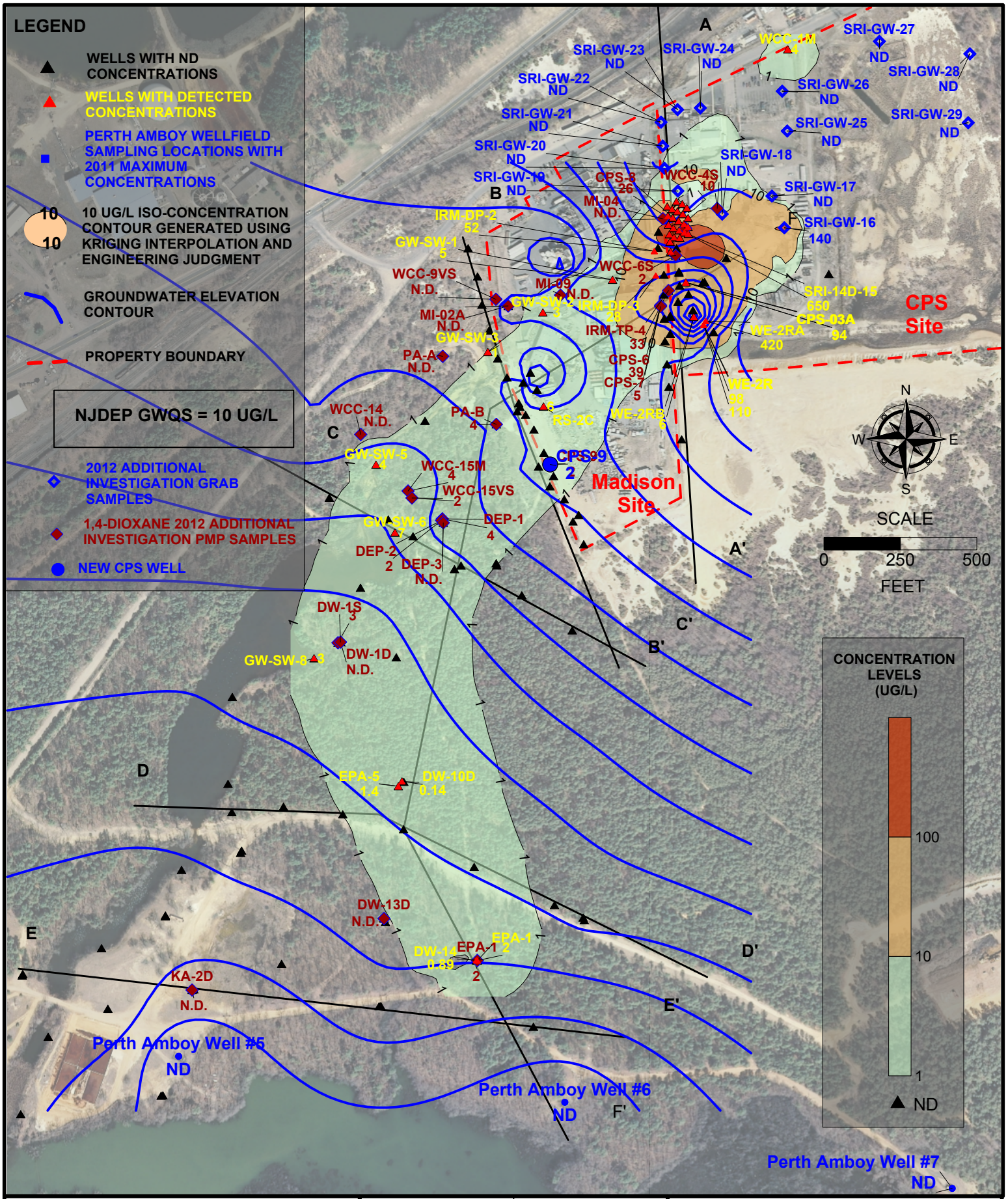
PROJECT NO.: 08104	FILE NAME: vc-planview

FIGURE 27A
BENZENE IN GROUNDWATER
PLAN VIEW

CPS/MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY



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SCALE: SEE MAP	DATE: 9/2/2011
PREPARED BY: LIC	CHECKED BY: JLP
PROJECT NO.: 08104	FILE NAME: 14dioxane-planview

FIGURE 28A
1,4-DIOXANE IN GROUNDWATER
PLAN VIEW

CPS/MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY

Attachment C

GW SW Interaction

This attachment has been included to facilitate review of the BHHRA. In the final RI and BHHRA, the text of the BHHRA will refer to the actual section of the RI Report that discusses the GW/SW Interaction Study. Therefore, this attachment will not be necessary and it will not be included in the final BHHRA.

3.2.3 Task 3: Groundwater/Surface Water Interaction Study (Tier I Evaluation)

The groundwater/surface water interaction study was conducted over 5 days of fieldwork between December 8, 2010 and December 15, 2010. The purposes of this task were to:

- Identify areas of groundwater discharge (upwelling) and stream loss (groundwater recharge) along Pricketts Brook and Pricketts Pond,
- Support a Tier I evaluation of ecological risk by characterizing and comparing sub-streambed groundwater quality at groundwater discharge locations to appropriate Ecological Screening Criteria (defined in Section 3.2.3.2), and
- Assess the potential role of stream sediments as sources of groundwater contamination by characterizing and comparing sub-streambed groundwater quality at groundwater recharge locations to NJDEP GWQS.

Consistent with the Phase 2 FSP and the QAPP, the groundwater/surface water interaction study involved the following activities at each of 14 locations shown on **Figure 10**:

- Installation of a temporary piezometer, Solinst® Model 615N Drive-Point Piezometer, which has a stainless steel, 50 mesh cylindrical filter-screen within a ¾" (20 mm) stainless steel drive-point body.
- Measurement of depths to groundwater within the piezometer and surface water outside the piezometer to allow determination of vertical hydraulic gradient between surface water and groundwater, and
- Collection of groundwater samples from the piezometer
- Validation of the resulting data packages.

Table 2C summarizes piezometer construction, field measurements, sample collection and laboratory analysis performed. There were no significant site access issues, so the field measurements and sampling were conducted at locations corresponding to the planned locations shown in the Phase 2 FSP. As noted in Table 2C, several of the piezometers were installed up to two feet deeper than planned (up to five feet below the top of the sediment), in order to set the piezometer screen below low-permeability surface sediments or iron-cemented soil layers, into the underlying sandy aquifer matrix.

Full analytical results for samples collected during the Groundwater / Surface Water Interaction Study area are presented in tables contained in **Appendix F-3**. Except as noted below, all samples were analyzed for VOCs, SVOCs and total (unfiltered) TAL Metals and dissolved (laboratory filtered) TAL Metals. Analytical methods included EPA Methods 8260 (25 mL purge) and 8011 for VOCs, EPA Method 8270 for SVOCs, and EPA Method 6010B for TAL Metals.

At location GW-SW-4, slow water entry into the temporary piezometer precluded collection of samples for SVOCs and TAL Metals, but samples were obtained for VOCs. Because GW-SW-4 was determined to be a location of groundwater discharge to surface water (see Section 3.2.3.1), CPS-related constituents (i.e., VOCs) are of principal interest at this location. Therefore, the sample data obtained from this point are deemed sufficient to support investigation objectives.

As shown in Table 2C, elevated turbidity persisted at most sampling locations after purging, so it was generally not possible to obtain a low-turbidity (i.e., less than 10 NTU) sample. Therefore, as discussed for the groundwater grab sampling tasks (see Section 3.2.1), total (unfiltered) metals results are non-representative of actual groundwater conditions, overstating metals concentrations. For this reason, dissolved metals values are more appropriate for comparison to surface water quality criteria than are total metals values, and dissolved (filtered) metals data are used to characterize sub-streambed metals concentrations in the Groundwater / Surface Water Interaction Study.

As discussed below, completion of the Groundwater / Surface Water Interaction Study accomplished the SRI Phase 2 objectives for this task. Based on this analysis, the Tier 2 evaluation (Surface Water and Sediment Sampling – Task 4) is not necessary (see Section 3.2.3.3).

3.2.3.1 Hydraulic Head Relationships

Table 3A summarizes hydraulic head relationships and the calculation of the vertical component of hydraulic head between surface water and sub-streambed groundwater at each of the temporary piezometer locations. Vertical hydraulic gradient values are also included on Figure 10, with negative gradient values indicating downward flow potential (stream loss, groundwater recharge) and positive gradient values indicating upward flow potential (stream gain, groundwater discharge).

Results of this assessment indicate that:

- Groundwater recharge (stream loss) occurs along the segment of the stream passing through the Madison Site (study locations GW-SW-1 and GW-SW-2),
- Groundwater discharge (upwelling) occurs along Pricketts Brook downstream of the Madison Site and at the northernmost portion of Pricketts Pond (study locations GW-SW-3 through GW-SW-7), and
- Groundwater recharge (stream loss) occurs along the lower portions of Pricketts Pond and the southern segment of Pricketts Brook downstream of the pond (study locations GW-SW-8 through GW-SW-14 – except for location GW-SW-13, where no vertical flow potential is evident).
- GW-SW-8 is just downgradient of the groundwater discharge zone, which before hydraulic control (1st generation) was a plume discharge zone. The data at this location shows residual contaminant concentrations (below criteria) related to dispersive effects.

This characterization is consistent with previously obtained information (head relationships at permanent monitoring wells, the known purpose of Pricketts Pond as an aquifer recharge feature), and observations made during direct-push groundwater sampling near the Brook (see Section 3.1.5).

3.2.3.2 Findings Relevant to Human and Ecological Receptor Evaluation

Table 3B summarizes all VOC, SVOC and TAL Metals detections at groundwater discharge (upwelling) locations, comparing potential CPS Site-related constituents (VOCs and SVOCs) to appropriate Ecological Screening Criteria. The Ecological Screening Criteria included, in descending order of preference, depending on availability of criteria for specific chemicals:

- NJDEP Ecological Screening Criteria for chronic exposures
- National Ambient Water Quality Criteria for chronic exposures
- Tier II criteria for chronic exposures (described in the EPA's 1993 *Proposed Water Quality Guidance for the Great Lakes System*), or
- National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Table (SQuiRT) values for chronic exposures.

Ecological criteria are not included on the Table 3B because, consistent with the 2005 EPA SOW, and as stated in Section 2.2.4, BASF is not responsible for conducting RI/FS activities for metals in media other than groundwater. As such, potential ecological (as well as human) receptor exposures associated with groundwater discharging to surface water and sediments were evaluated for nonmetal constituents only. Consistent with the approved workplan, in Tier 1 of this evaluation, groundwater VOC and SVOC data were used as a surrogate for surface water to determine if the pathway was complete for VOC and SVOC and if so, whether additional assessment was needed for site-specific constituents of concern (VOC and SVOC). The details of the Tier 1 evaluation will be included in the human and ecological risk assessment deliverables. Based on the results from the Tier 1 evaluation, the Tier 2 evaluation is not warranted, and therefore, no additional surface water and sediment sampling was performed.

To evaluate human health risk for surface water, nonmetal screening criteria for recreational users/trespassers were identified using EPA assumptions and equations. The details of the development of these criteria and the criteria are provided in **Table 3C**. As identified in the footnote from Table 3C, recreator parameters used to derive screening values were as follows: EF = 56 d/yr, ED = 12 yrs, Exp. time= 1hr, BW = 48.85 kg, IRwater = 0.05L/hr. Since the screening criteria was based on a recreational user exposed to surface water via dermal contact and incidental ingestion, the parameters used for the dermal portion of the calculation were as follows: EF= 56 d/yr, ED= 12 yrs, Exp. time= 1hr, BW= 48.85 kg, Skin Surface Area = 7,990 cm2 and compound-specific dermal permeability values (Kp).

Applicability of the EPA National Recommended Water Quality Criteria will be evaluated in the Risk Assessment, per surface water body. Some of the surface water bodies are intermittent and

the criteria for fish consumption may not be applicable if the stream cannot support an edible sized fish population.

Based on the hydraulic gradient assessment and the comparison of sub-streambed groundwater quality sampling results presented in Tables 3B and 3C, there are no areas along the Pricketts Brook drainage where analyte concentrations in discharging groundwater exceed the corresponding Human Health or Ecological Screening Criteria for VOCs or SVOCs. Therefore, CPS impacted groundwater discharging to surface water would not likely produce any potential adverse impacts to aquatic or human receptors.

Based on the approved strategy outlined in the Phase 2 FSP, therefore, further investigation along Pricketts Brook and Pricketts Pond (i.e., surface water or sediment sampling) is not required.

3.2.3.3 Groundwater Source Assessment

Table 3D summarizes all VOC, SVOC and TAL Metals detections at groundwater recharge (stream loss) locations, compared to NJDEP GWQS. Based on the hydraulic gradient assessment and the comparison of sub-streambed groundwater quality sampling results presented in Table 3C, there are no groundwater recharge areas along the Pricketts Brook drainage where the recharging groundwater significantly exceeds the GWQS for VOCs or SVOCs. At location GW-SW-1, the chemical 1,2-dichloroethane (1,2-DCA) was detected in the sub-streambed groundwater at a concentration of 3.5 ug/L, which marginally exceeds the GWQS of 2 ug/L. It must be noted that the stream near locations GW-SW-1 and -2 is in a natural groundwater discharge zone, and that the gradient data reflect the apparent effect of pumping from both the CPS IRM (i.e., CPS-3A) and the Madison P&T (i.e., RS-1-series). Therefore, the VOC detections at these two locations are due to their proximity to the CPS source area (dispersive plume edge) and impact from the upgradient EPLC plume (characterized by the presence of 1,2-DCA and cis-1,2-DCE [Ciba 2005, 2008]). Therefore, the stream sediments are not a source of CPS Site-related groundwater contamination. This is consistent with information presented in Section 2.3 of the Phase 2 FSP; transport of CPS Site-related constituents to surface water bodies via surface runoff was precluded for most of the site's operational history by the presence of impermeable surface cover and curbing at the site perimeter.

The following discussion focuses on Madison COIs (copper, cadmium, lead and zinc). Note that other metals detected above GWQS (aluminum, beryllium, iron and manganese) are naturally occurring. Furthermore, pursuant to NJDEP guidance, Impact to Groundwater pathway does not need to be evaluated for secondary parameters (i.e., developed primarily for aesthetic characteristics) including aluminum, iron, manganese, silver and sodium, unless there is cause to believe their presence is due to a site discharge http://www.nj.gov/dep/srp/guidance/rs/igw_faq.pdf. Based on the discussions in Sections 4.2.1 and 4.2.2 of the SCSR, aluminum, beryllium, iron and manganese are not associated with any known or suspected historical sources on either the CPS or Madison properties.

Considering dissolved metals, several, including cadmium, lead and zinc, do exceed GWQS in two areas of the Pricketts Brook drainage way where groundwater recharge takes place. These areas are:

- On the Madison Site at sampling locations GW-SW-1 and GW-SW-2 at the northern end of area investigated during the groundwater / surface water study, and
- On the Runyon Watershed property, adjacent to Perth Amboy's water treatment sludge management areas, at sampling locations GW-SW-12 and GW-SW-14 at the southern end of area investigated during the groundwater / surface water study (GW-SW-13 also had above-GWQS metals results, but the vertical hydraulic gradient at this location was neutral).

On the Madison Site, above-GWQS dissolved metals detections at stream-loss locations were: zinc at GW-SW-1 (20,800 ug/L) and cadmium, lead and zinc at GW-SW-2 (20; 45.4 and 3,550 ug/L, respectively). Because this area is a natural groundwater discharge zone, these detections are likely groundwater-related.

On the Runyon Watershed property, the dissolved metals detections above the GWQS at stream-loss locations were: cadmium at GW-SW-12 and GW-SW-14 (9.5 and 27.6 ug/L, respectively); lead at GW-SW-12 (9.6 ug/L) and zinc at GW-SW-12 and GW-SW-14 (2,240 and 3,560 ug/L, respectively). Because this area is in an induced groundwater recharge area, these detections imply a potential sediment source for metals impact in groundwater (see Sections 4.2.2 and 4.3.3.2 for discussion on the source for metals impact in this region of the aquifer).

3.2.4 Task 4: Surface Water and Sediment Sampling at Selected Locations (Tier II Evaluation)

As described in Section 2.3 of the Phase 2 FSP, transport of CPS Site-related constituents to surface water bodies via surface runoff was precluded for most of the site's operational history by the presence of impermeable surface cover and curbing at the site perimeter. In addition, a sediment study performed by Wehran Engineering in 1983 found no evidence of sediment impact attributable to runoff from the CPS Site only several years after the pavement and curbing were installed, suggesting that any earlier sediment migration from the CPS Site via runoff was either negligible or non-existent.

While impacts on sediment and surface water quality from CPS surface water runoff are not apparent, site investigation data available prior to SRI Phase 2 indicated that groundwater may discharge along portions of the surface drainage downgradient of the site, and thus this exposure pathway needs to be characterized. Accordingly, a tiered approach was developed for evaluating the groundwater to surface water pathway. The Tier I evaluation (Task 3) included characterizing sub-streambed groundwater quality and flow conditions (groundwater discharge or recharge). A subsequent Tier II evaluation of surface water and sediment would be required only if the Tier I

work identified groundwater discharge areas in which sub-streambed groundwater exhibited CPS Site-related constituents above Ecological Screening Criteria.

As discussed in Section 3.2.3, the Tier I evaluation did not identify any groundwater discharge areas in which sub-streambed groundwater exhibited VOCs or SVOCs above Human Health or Ecological Screening Criteria. Therefore, as provided for in Section 4.4 of the Phase 2 FSP, a Tier II Evaluation to address VOCs and SVOCs in surface water and sediment as part of BASF's SRI was determined to be unnecessary.

Based on the above, BASF has fulfilled its responsibility by conducting the Tier I evaluation and does not propose to conduct a Tier II evaluation.

3.2.5 Task 5: Side Lot Area VOC Source Investigation / Background Vanadium Evaluation

BASF completed two activities under Task 5 during Phase 2, to clarify conditions identified during Phase 1 sampling in the CPS Side Lot. These included:

- Groundwater grab sampling to assess the potential presence and extent of a source of VOC impact in the vicinity of SRI Phase 1 sample location CPS-SRI-SS-8, near the eastern, upgradient edge of the Side Lot, and
- Review of published scientific literature and a site-specific statistical evaluation to assess the origin of vanadium in soils on the CPS Side Lot

The Phase 1 and Phase 2 sampling locations are shown on Figure 11. Results of CPS Side Lot VOC source and background vanadium evaluations are discussed below.

3.2.5.1 CPS Side Lot Area Groundwater VOC Source Investigation

The CPS Side Lot VOC source investigation sampling was conducted on January 17, 2011 and January 23, 2011. As shown on **Figure 11**, shallow groundwater samples were collected at 15 locations surrounding, and upgradient of SRI Phase 1 sampling location CPS-SRI-SS-8, where chlorobenzene had been detected at a low-level concentration of 3.2 mg/kg in a soil sample, at or below the water table (3.5 to 4.0 feet below grade). The purpose of the sampling during SRI Phase 2 was to evaluate the potential presence of a source of VOC impact in this area in the eastern portion of the CPS Side Lot.

Table 2D summarizes the sampling and laboratory analysis performed. There were no significant site access issues, so the sampling was conducted at locations corresponding to the planned locations shown in the Phase 2 FSP. Full analytical results for samples collected during the CPS Side Lot VOC Source Investigation are presented in **Appendix F-4**. Except as noted below, all samples were analyzed for VOCs by EPA Methods 8260 (25 mL purge) and 8011 (for low-level DBCP and EDB characterization).

Table 2C
Sampling and Analysis Summary - SRI Phase 2
Groundwater / Surface Water Interaction Study (Phase 2 Task 3)

CPS/Madison Superfund Site
Old Bridge, New Jersey

Location	Sample ID (with depth)	Date(s) Completed	Coordinates		Boring Total Depth (feet-below sediment surface)		DTW GW (TOC)	DTW SW (TOC)	TOC to Stream Bottom (TOC)	Analyses				Metals Sample Turbidity	Unit at Sampling Depth	Volume Purged (Gallons)	Notes
			Northing	Easting	Planned	Total				VOC	SVOC	EDB/DBCP	Metals				
GW-SW-1	GW-SW-1-3.5-4.5	12/15/2010	583008	539880	3	4.5	1.97	1.03	1.5	X	X	X	X	22 NTU	Sand	3.2	Drove to 4.5 feet in order to sample from sand beneath sediment
	GW-SW-1-3.5-4.5-QC	12/15/2010	583008	539880	3	4.5	1.97	1.03	1.5				X	22 NTU	Sand	3.2	
GW-SW-2	GW-SW-2-2-3	12/15/2010	582901	539652	3	3	2.68	2.64	2.98	X	X	X	X	1.7 NTU	Sand	2.0	
GW-SW-3	GW-SW-3-2-3	12/15/2010	582772	539472	3	3	2.48	2.58	2.92	X	X	X	X	3.4 NTU	Sand	4.3	
	GW-SW-3-2-3-MS	12/15/2010	582772	539472	3	3	2.48	2.58	2.92	X	X	X	X	3.4 NTU	Sand	4.3	Matrix Spike
	GW-SW-3-2-3-MSD	12/15/2010	582772	539472	3	3	2.48	2.58	2.92	X	X	X	X	3.4 NTU	Sand	4.3	Matrix Spike Duplicate
GW-SW-4	GW-SW-4-2.8-3.8	12/15/2010	582547	539266	3	3.8	1.78	1.95	2.37	X		X		---	Sand	0.4	Drove 3.8 feet in order to sample from sand beneath sediment. Not enough water produced to collect SVOCs and metals.
GW-SW-5	GW-SW-5-1.5-2.5	12/14/2010	582403	539106	3	2.5	2.80	3.04	3.60	X	X	X	X	4.0 NTU	Sand	3.0	Could only drive point to 2.5 feet
GW-SW-6	GW-SW-6-4-5	12/14/2010	582181	539168	3	5	0.46	0.91	1.10	X	X	X	X	200 NTU	Sand	2.75	Drove to 5 feet in order to sample from sand beneath sediment
GW-SW-7	GW-SW-7-2.5-3.5	12/10/2010	582001	539055	3	3.5	1.13	1.22	2.7	X	X	X	X	650 NTU	Sand	1.8	Drove to 3.5 feet in order to sample from sand beneath sediment
GW-SW-8	GW-SW-8-2-3	12/10/2010	581770	538903	3	3	1.80	1.75	2.91	X	X	X	X	370 NTU	Sand	1.3	
GW-SW-9	GW-SW-9-4-5	12/10/2010	581643	538636	3	5	1.53	1.45	4.01	X	X	X	X	260 NTU	Sand	3.8	Drove to 5 feet in order to sample from sand beneath sediment
GW-SW-10	GW-SW-10-4-5	12/10/2010	581359	538621	3	5	2.13	1.86	3.42	X	X	X	X	39 NTU	Sand	3.8	Drove to 5 feet in order to sample from sand beneath sediment
	GW-SW-10-4-5-D	12/10/2010	581359	538621	3	5	2.13	1.86	3.42	X	X	X	X	39 NTU	Sand	3.8	Duplicate Sample
GW-SW-11	GW-SW-11-4-5	12/9/2010	581077	538469	3	5	1.45	0.90	2.70	X	X	X	X	29 NTU	Sand	1.1	Drove to 5 feet in order to sample from sand beneath sediment
GW-SW-12	GW-SW-12-2-3	12/9/2010	580821	538208	3	3	1.65	1.48	2.77	X	X	X	X	1.2 NTU	Sand	1.3	
GW-SW-13	GW-SW-13-2-3	12/8/2010	580587	538022	3	3	3.34	3.35	4.05	X	X	X	X	1.7 NTU	Sand	2.2	
GW-SW-14	GW-SW-14-4-5	12/8-9/2010	580278	537943	3	5	2.97	2.74	3	X	X	X	X	9.1 NTU	Sand	1.0	Drove to 5 feet in order to sample from sand beneath sediment

Table 3A
Groundwater / Surface Water Interaction Study Results
Vertical Hydraulic Gradients Measured between Surface Water and Sub-Streambed Groundwater

CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Location	Depth of Screen below Sediment (ft)	Depth to Groundwater (ft)	Depth to Surface Water (ft)	Head Differential (ft)	Hydraulic Gradient [1] (ft/ft)	Direction of Flow Potential
GW-SW-1	3.5 - 4.5	1.86	1.03	-0.83	-0.21	Downward
GW-SW-2	2 - 3	2.68	2.64	-0.04	-0.02	Downward
GW-SW-3	2 - 3	2.48	2.58	0.10	0.04	Upward
GW-SW-4	2.8 - 3.8	1.78	1.95	0.17	0.05	Upward
GW-SW-5	1.5 - 2.5	2.80	3.04	0.24	0.12	Upward
GW-SW-6	4 - 5	0.46	0.91	0.45	0.10	Upward
GW-SW-7	2.5 - 3.5	1.13	1.22	0.09	0.03	Upward
GW-SW-8	2 - 3	1.80	1.75	-0.05	-0.02	Downward
GW-SW-9	4 - 5	1.53	1.45	-0.08	-0.02	Downward
GW-SW-10	4 - 5	2.13	1.86	-0.27	-0.06	Downward
GW-SW-11	4 - 5	1.45	0.90	-0.55	-0.12	Downward
GW-SW-12	2 - 3	1.65	1.48	-0.17	-0.07	Downward
GW-SW-13	2 - 3	3.34	3.35	0.01	0.00	Neutral
GW-SW-14	4 - 5	2.97	2.74	-0.23	-0.05	Downward

Note:
(1) Hydraulic gradient was calculated based on head differences and distances between top of sediment and screen midpoint

Table 3B
Groundwater / Surface Water Interaction Study Results
Analytes Detected at Groundwater Discharge Locations compared to Ecological Screening Criteria

CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical Name	Cas #	Maximum Detected Concentration	Ecological Screening Level	GW-SW-3-2-3	GW-SW-4-2.8-3.8	GW-SW-5-1.5-2.5	GW-SW-6-4-5	GW-SW-7-2.5-3.5
			ESL [1]	Upward	Upward	Upward	Upward	Upward
Volatile Organic Compunds								
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.2	380	0.1 U	0.1 U	0.2	0.1 U	0.1 U
1,1-DICHLOROETHYLENE	75-35-4	1	65	0.3	1	1	0.1 U	0.1 U
1,2,4-TRICHLOROBENZENE	120-82-1	17	30	0.1 U	0.2	17	0.1 U	0.9
1,2-CIS-DICHLOROETHYLENE	156-59-2	0.5	590 [3]	0.1 U	0.1	0.5	0.2	0.3
1,2-DICHLOROBENZENE	95-50-1	3.4	14	0.1 U	0.8	3.4	0.8	1
1,2-DICHLOROETHANE	107-06-2	1.5	910	0.5	0.7	1.5	0.2	0.5
1,3-DICHLOROBENZENE	541-73-1	1.6	38	0.1 U	0.2	1.6	0.1	1
1,4-DICHLOROBENZENE	106-46-7	2.2	9.4	0.1 U	0.9	1.5	0.8	2.2
ACETONE	67-64-1	100	1,500 [2]	3 U	100	11	3 U	3 UB
BENZENE	71-43-2	0.9	824	0.1 U	0.7	0.9	0.5	0.1 U
CHLOROBENZENE	108-90-7	2.4	47	0.1 U	0.2	2.4	2.2	0.9
ETHYLBENZENE	100-41-4	0.1	81	0.1 U	0.1 U	0.1	0.1 U	0.1 U
METHYL-T-BUTYL ETHER	1634-04-4	24	51,000	0.1	0.1	0.5	3.9	24
T-BUTYL ALCOHOL	75-65-0	50	355,000	4 U	11	13	4.4	50
TETRACHLOROETHYLENE	127-18-4	0.1	45	0.1 U	0.1 U	0.1	0.1 U	0.1 U
TOLUENE	108-88-3	0.5	253	0.1 U	0.5	0.1 U	0.1 U	0.1 U
TRICHLOROETHYLENE	79-01-6	0.7	47	0.1	0.2	0.7	0.1 U	0.1 U
VINYL CHLORIDE	75-01-4	0.5	930	0.08 U	0.5	0.5	0.1	0.1
Semi-Volatile Organic Compounds								
1,4-DIOXANE	123-91-1	7	24 [3]	1		4	7	2 U
BIPHENYL	92-52-4	0.2	14 [2]	0.1 U		0.2	0.1 U	1 U
BIS(2-CHLOROETHYL) ETHER	111-44-4	0.2	1,900	0.1 U		0.2	0.1 U	1 U
NAPHTHALENE	91-20-3	0.2	13	0.2		0.05 U	0.05 U	0.5 U
PHENOL	108-95-2	1	180	0.1 U		0.1	0.1 U	1 U

Notes:
Results are in ppb (ug/L)
0.5 - Result exceeds ESL
(1) NJDEP Ecological Screening Criteria (chronic) - http://www.nj.gov/dep/srp/guidance/ecoscreening/
(2) NAWQ or Tier II Secondary Criteria (chronic) - http://www.esd.ornl.gov/programs/ecorisk/documents/tm96r2.pdf - chronic value
(3) NOAA Screening Quick Reference Table (SQuiRT) Values (chronic) - http://response.restoration.noaa.gov/book_shelf/122_NEW-SQuiRTs.pdf - chronic value

Table 3B
Groundwater / Surface Water Interaction Study Results
Analytes Detected at Groundwater Discharge Locations

CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical Name	Cas #	Maximum Detected Dissolved Concentration	GW-SW-3-2-3	GW-SW-5-1.5-2.5	GW-SW-6-4-5	GW-SW-7-2.5-3.5
			Upward Dissolved	Upward Dissolved	Upward Dissolved	Upward Dissolved
CADMIUM	7440-43-9	13.4	13.4	2 U	2 U	2 U
COPPER	7440-50-8	595	595 J	2.7 U	2.7 U	5.3
LEAD	7439-92-1	9.1	9.1	6.9 U	6.9 U	6.9 U
ZINC	7440-66-6	1,570	418	958	1,570	525
ALUMINUM	7429-90-5	6,980	3,360	6,980	90.5	83.4 U
BARIUM	7440-39-3	78.5	43.5	45.3	78.5	18.4
BERYLLIUM	7440-41-7	6.3	5.8	6.3	1.7	1.4 U
CALCIUM	7440-70-2	10,300	5,880 J	10,300 J	3,250 J	5,280
CHROMIUM	7440-47-3	3.4	3.4 U	3.4	3.4 U	3.4 U
COBALT	7440-48-4	59.2	22.4	59.2	6.4	4.9
IRON	7439-89-6	27,300	52.2 U	5,290	27,300	22,500
MAGNESIUM	7439-95-4	4,830	3,490 J	4,830 J	1,780 J	1,890
MANGANESE	7439-96-5	731	252	731	185	249
MERCURY	7439-97-6	0.05	0.05 U	0.05 U	0.05 U	0.05 U
NICKEL	7440-02-0	64.2	23.9	64.2	27.2	6.1
POTASSIUM	7440-09-7	2,470	1,850	2,470	1,350	1,900
SODIUM	7440-23-5	13,000	9,270	13,000	6,750	9,840
VANADIUM	7440-62-2	64.8	4.3	64.8	2.5 U	2.5 U

Notes:
Results are in ppb (ug/L)

Table 3C
Groundwater / Surface Water Interaction Study Results
Analytes Detected at Groundwater Discharge Locations Compared to Human Health Screening Criteria

CPS/Madison Superfund Site
Old Bridge, New Jersey

COMPOUND OF POTENTIAL CONCERN	Maximum Detected Groundwater Concentration	ELCR = 10^{-4} (ug/L)	HI = 10 (ug/L)	Minimum Criteria (ug/L)	Maximum Detect Groundwater Concentration Exceeds Minimum Criteria	ELCR = 10^{-5} (ug/L)	HI = 1 (ug/L)	Minimum Criteria (ug/L)	Maximum Detect Groundwater Concentration Exceeds Minimum Criteria	ELCR = 10^{-6} (ug/L)	HI = 0.1 (ug/L)	Minimum Criteria (ug/L)	Maximum Detect Groundwater Concentration Exceeds Minimum Criteria
Volatile Organics (ug/L)													
1,1,2,2-TETRACHLOROETHANE	0.2	4695	321913	4695	No	469	32191	469	No	47	3219	47	No
1,1-DICHLOROETHYLENE	1		768742	768742	No		76874	76874	No		7687	7687	No
1,2,4-TRICHLOROBENZENE	17		19992	19992	No		1999	1999	No		200	200	No
1,2-CIS-DICHLOROETHYLENE	0.5		32321	32321	No		3232	3232	No		323	323	No
1,2-DICHLOROBENZENE	3.4		349601	349601	No		34960	34960	No		3496	3496	No
1,2-DICHLOROETHANE	1.5	19019	178015	19019	No	1902	17802	1902	No	190	1780	190	No
1,3-DICHLOROBENZENE	1.6		242805	242805	No		24281	24281	No		2428	2428	No
1,4-DICHLOROBENZENE	2.2	41363	38290	38290	No	4136	3829	3829	No	414	383	383	No
ACETONE	100		51791844	51791844	No		5179184	5179184	No		517918	517918	No
BENZENE	0.9	14852	56012	14852	No	1485	5601	1485	No	149	560	149	No
CHLOROBENZENE	2.4		135293	135293	No		13529	13529	No		1353	1353	No
ETHYLBENZENE	0.1		421952	421952	No		42195	42195	No		4220	4220	No
METHYL-T-BUTYL ETHER	24	1345941	415319	415319	No	134594	41532	41532	No	13459	4153	4153	No
T-BUTYL ALCOHOL	50		926101	926101	No		92610	92610	No		9261	9261	No
TETRACHLOROETHYLENE	0.1	3009	42294	3009	No	301	4229	301	No	30	423	30	No
TOLUENE	0.5		558773	558773	No		55877	55877	No		5588	5588	No
TRICHLOROETHYLENE	0.7	24363	3884	3884	No	2436	388	388	No	244	39	39	No
VINYL CHLORIDE	0.5	1202	86532	1202	No	120	8653	120	No	12	865	12	No
Semi-volatile Organics (ug/L)													
1,4-DIOXANE	7	34252	1761533	34252	No	3425	176153	3425	No	343	17615	343	No
BIPHENYL	0.2		85073	85073	No		8507	8507	No		851	851	No
BIS(2-CHLOROETHYL) ETHER	0.2	2053		2053	No	205		205	No	21		21	No
NAPHTHALENE	0.2		77759	77759	No		7776	7776	No		778	778	No
PHENOL	1		8896062	8896062	No		889606	889606	No		88961	88961	No

Notes:
ug/L - microgram per liter
ELCR - Excess Lifetime Cancer Risk
HI - Hazard Index
Screening criteria based on a recreational user exposed to surface water via dermal contact and incidental ingestion with the following parameters:
Exposure Frequency - 56 days per year, Exposure Duration - 12 years, Exposure Time - 1 hour, Body Weight - 48.85 kilograms, Ingestion Rate of Water - 0.05 liters per hour.
Toxicity values were selected using the hierarchy in "Human Health Toxicity Values in Superfund Risk Assessments" OSWER No. 9285.7-53, December 2003.

Prepared By/Date: EYM 09/21/2012
Checked By/Date: SDM 9/26/11

Table 3D
Groundwater / Surface Water Interaction Study Results
Analytes Detected at Groundwater Recharge Locations compared to New Jersey Groundwater Quality Standards

CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical Name	Cas #	Maximum Detected Concentration	NJDEP Groundwater Quality Standard GWQS (1)	GW-SW-1-3.5-4.5	GW-SW-2-2-3	GW-SW-8-2-3	GW-SW-9-4-5	GW-SW-10-4-5	GW-SW-11-4-5	GW-SW-12-2-3	GW-SW-13-2-3	GW-SW-14-4-5
				Downward	Downward	Downward	Downward	Downward	Downward	Downward	Neutral	Downward
Volatile Organic Compunds												
1,1,2,2-TETRACHLOROETHANE	79-34-5	0.5	1	0.5	0.2	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-DICHLOROETHANE	75-34-3	0.1	50	0.1 U	0.1 U	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1-DICHLOROETHYLENE	75-35-4	0.4	1	0.1 U	0.1 U	0.4	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2,4-TRICHLOROBENZENE	120-82-1	5.4	9	0.9	0.9	5.4	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-CIS-DICHLOROETHYLENE	156-59-2	6.2	70	6.2	1.1	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROBENZENE	95-50-1	4.2	600	0.2	0.7	4.2	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROETHANE	107-06-2	***3.5***	2	***3.5***	0.9	0.4	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-TRANS-DICHLOROETHYLENE	156-60-5	0.5	100	0.5	0.1	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1	0.1 U
1,3-DICHLOROBENZENE	541-73-1	1.6	600	0.3	0.1	1.6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,4-DICHLOROBENZENE	106-46-7	3	75	0.4	0.4	3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
ACETONE	67-64-1	290	6,000	5.4	15	3 UB	3 UB	3 UB	3 U	3 UB	3 U	290
BENZENE	71-43-2	0.3	1	0.1 U	0.2	0.3	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
CARBON DISULFIDE	75-15-0	0.9	700	0.9	0.4 U	0.5	0.4 U	0.45 J	0.4 U	0.4 U	0.4 U	0.4 U
CHLOROBENZENE	108-90-7	6.4	50	0.2	0.7	6.4	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
METHYL CHLORIDE/CHLOROMETHANE	74-87-3	0.3	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.3
METHYL-T-BUTYL ETHER	1634-04-4	11	70	0.2	0.1 U	11	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TOLUENE	108-88-3	0.6	600	0.1	0.6	0.1 U	0.1	0.1	0.1 U	0.1 U	0.1 U	0.1 U
TRICHLOROETHYLENE	79-01-6	0.7	1	0.3	0.1 U	0.7	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
VINYL CHLORIDE	75-01-4	0.2	1	0.2	0.08 U	0.08	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
Semi-Volatile Organic Compounds												
1,4-DIOXANE	123-91-1	5	10	5	3	3	2 U	2 U	2 U	2 U	0.2 U	0.2 U
2,6-DINITROTOLUENE	606-20-2	0.3	NA	0.1 U	0.3	1 U	1 U	1 U	1 U	1 U	0.09 U	0.1 U
2-CHLOROPHENOL	95-57-8	0.2	40	0.1 U	0.2	1 U	1 U	1 U	1 U	1 U	0.09 U	0.1 U
BENZO(A)ANTHRACENE	56-55-3	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1	*0.05* U
BENZO(A)PYRENE	50-32-8	0.1	0.1	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.1	*0.05* U
BENZO(B)FLUORANTHENE	205-99-2	0.2	0.2	0.05 U	0.05 U	***0.5*** U	***0.5*** U	***0.5*** U	***0.5*** U	***0.5*** U	0.2	0.05 U
BENZO(GHI)PERYLENE	191-24-2	0.07	100	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.07	0.05 U
BENZO(K)FLUORANTHENE	207-08-9	0.2	0.5	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2	0.05 U
CHRYSENE	218-01-9	0.2	5	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2	0.05 U
FLUORANTHENE	206-44-0	0.2	300	0.05 U	0.07	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2	0.05 U
INDENO(1,2,3-CD)PYRENE	193-39-5	0.07	0.2	0.05 U	0.05 U	***0.5*** U	***0.5*** U	***0.5*** U	***0.5*** U	***0.5*** U	0.07	0.05 U
PHENANTHRENE	85-01-8	0.06	100	0.05 U	0.05 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.06	0.05 U
PHENOL	108-95-2	0.1	2,000	0.1 U	0.1	1 U	1 U	1 U	1 U	1 U	0.09 U	0.1 U
PYRENE	129-00-0	0.07	200	0.05 U	0.07	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.2	0.05 U

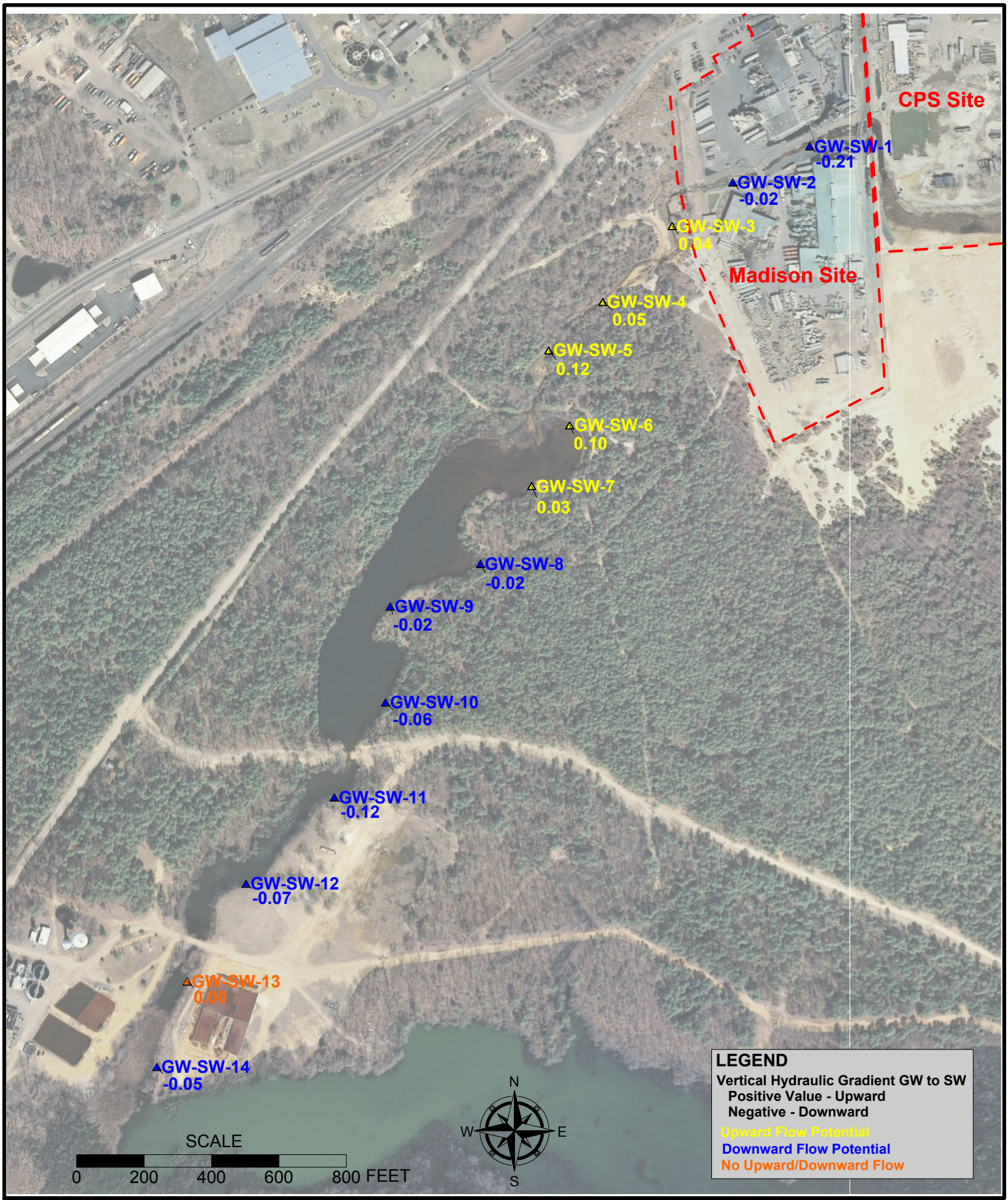
Notes:
Results are in ppb (ug/L)
0.5 - Method Detection Limit exceeds GWQS
3.5 - Result exceeds GWQS
(1) http://www.nj.gov/dep/wms/bwqsa/Appendix_Table_1.htm

Table 3D
Groundwater / Surface Water Interaction Study Results
Analytes Detected at Groundwater Recharge Locations compared to New Jersey Groundwater Quality Standards

CPS/Madison Superfund Site
Old Bridge, New Jersey

Chemical Name	Cas #	Maximum Detected Dissolved Concentration	NJDEP Groundwater Quality Standard GWQS (1)	GW-SW-1-3.5-4.5	GW-SW-2-2-3	GW-SW-8-2-3	GW-SW-9-4-5	GW-SW-10-4-5		GW-SW-11-4-5	GW-SW-12-2-3	GW-SW-13-2-3	GW-SW-14-4-5
				Downward	Downward	Downward	Downward	Downward		Downward	Downward	Neutral	Downward
				Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	D-Dissolved	Dissolved	Dissolved	Dissolved	Dissolved
CADMIUM	7440-43-9	***27.6***	4	2 U	***20***	2 U	2 U	2 U	2 U	2 U	***9.5***	***11.4***	***27.6***
COPPER	7440-50-8	833	1,300	2.7 U	833	5.1	2.7 U	4.3	5.1	14.9	772	407	2.7 U
LEAD	7439-92-1	***45.4***	5	***6.9*** U	***45.4***	***6.9*** U	***6.9*** U	***6.9*** U	***6.9*** U	***6.9*** U	***9.6***	***11.8***	***6.9*** U
ZINC	7440-66-6	***20,800***	2,000	***20,800***	***3,550***	1,500	334	525	519	605	***2,240***	***3,200***	***3,560***
ALUMINUM	7429-90-5	***5,880***	200	83.4 U	***5,880***	***535***	83.4 U	83.4 U	83.4 U	152	***3,050***	***2,610***	***532***
BARIUM	7440-39-3	64.7	6,000	29.7	28.5	30.6	25.9	20.1	19.8	26.2	46.6	60.8	64.7
BERYLLIUM	7440-41-7	***5***	1	***1.5***	***3.8***	***1.7***	***1.4***	***1.4***	***1.4***	***1.5***	***4.9***	***3.9***	***2.2***
CALCIUM	7440-70-2	19,400	NA	19,400 J	18,200 J	9,190	5,960	7,330	7,150	11,100	7,250	8,550	9,460
COBALT	7440-48-4	29	100	25.6	29.1	22.1	3.3	8.6	8.2	16.9	19	22.4	22.6
IRON	7439-89-6	***15,200***	300	***3,870***	52.2 U	***15,200***	***14,800***	***10,400***	***10,200***	***7,010***	52 U	52.2 U	52.2 U
MAGNESIUM	7439-95-4	5,300	NA	5,300 J	5,000 J	3,580	3,360	3,390	3,340	4,200	3,160	3,450	3,370
MANGANESE	7439-96-5	***556***	50	***546***	***556***	***397***	***128***	***225***	***221***	***360***	***268***	***292***	***304***
NICKEL	7440-02-0	58	100	57.8	41.8	34.4	3 U	14.1	14.1	19.9	36.1	43.7	52.6
POTASSIUM	7440-09-7	3,110	NA	3,110	2,760	2,290	1,330	1,430	1,370	1,900	2,000	1,820	2,240
SODIUM	7440-23-5	43,400	50,000	43,400	42,600	15,600	27,100	26,100	25,600	26,000	24,900	25,100	25,300

Notes:
Results are in ppb (ug/L)
0.5 - Method Detection Limit exceeds GWQS
3.5 - Result exceeds GWQS
(1) http://www.nj.gov/dep/wms/bwqsa/Appendix_Table_1.htm



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SCALE: 1" = 400'	DATE: 9/2/2011
PREPARED BY: LIC	CHECKED BY: JLP
PROJECT NO.: 08104	FILE NAME: GW-SW Interaction

FIGURE 10
GW / SW SAMPLING LOCATIONS AND HYDRAULIC HEAD RELATIONSHIP

CPS/MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY

ATTACHMENT D

(PROVIDED ON CD)

Attachment D-1
On-Site Vapor Intrusion Investigation Report (MACTEC, 2009)

Attachment D-2
Off-Site Vapor Intrusion Investigation Report (MACTEC, 2009)

Attachment D-3
First Interim Deliverable BHHRA Vapor Intrusion Tables

Attachment D-4
USEPA Region 2 Vapor Intrusion Matrices

Attachment D
VI Matrix

Attachment D-1

On-Site Vapor Intrusion Investigation Report (MACTEC, 2009)

ON-SITE VAPOR INTRUSION INVESTIGATION REPORT SOIL GAS AND INDOOR AIR SAMPLING RESULTS

CPS/MADISON SUPERFUND SITE
OLD BRIDGE TOWNSHIP
MIDDLESEX COUNTY, NEW JERSEY

MACTEC

DECEMBER 2009

ON-SITE VAPOR INTRUSION INVESTIGATION REPORT
SOIL GAS AND INDOOR AIR SAMPLING RESULTS

CPS/MADISON SUPERFUND SITE
OLD BRIDGE TOWNSHIP, MIDDLESEX COUNTY, NEW JERSEY

Submitted to:

United States Environmental Protection Agency
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December 9, 2009

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GLOSSARY OF ACRONYMS

bgs	Below Ground Surface
CIBA	CIBA Specialty Chemicals
COCs	Contaminants of Concern
°C	Degrees Celsius
1,2-DCA	1,2-Dichloroethane
ft	Feet
GWQS	Groundwater Quality Standards
GWSLs	Groundwater Screening Levels
HASP	Health and Safety Plan
Hg	Mercury
HVAC	Heating, Ventilation, and Air Conditioning
IASLs	Indoor Air Screening Levels
K	Conductivity
MACTEC	MACTEC Engineering and Consulting, Inc.
MCLs	Maximum Contaminant Levels
MSL	Mean Sea Level
MTBE	Methyl Tert Butyl Ether
ml/min	Milliliters per Minute
NAPL	Non-Aqueous Phase Liquid
NJDEP	New Jersey Department of Environmental Protection
PMP	Performance Monitoring Program
ppbv	Parts Per Billion-Volume
RALs	Rapid Action Levels
RI	Remedial Investigation
SGSLs	Soil Gas Screening Levels
Site	CPS/Madison Superfund Site
TCE	Trichloroethylene
USEPA	United States Environmental Protection Agency
VI	Vapor Intrusion
VOCs	Volatile Organic Compounds

1.0 INTRODUCTION

This Vapor Intrusion (VI) Investigation Report was prepared by MACTEC Engineering and Consulting, Inc. (MACTEC) on behalf of CIBA Specialty Chemicals (CIBA) to document the results of on-site VI investigation activities at the CPS/Madison Superfund Site (Site). These investigation activities were carried out in accordance with the CPS On-Site Vapor Intrusion Investigation Work Plan, CPS/Madison Superfund Site, Old Bridge Township, Middlesex County, New Jersey, submitted May 14, 2009 and approved by e-mail from the United States Environmental Protection Agency (USEPA) on June 3, 2009. This report details the results of the on-site investigation conducted at the CPS property. Results of the off-site investigation conducted at the Madison facility are being reported under separate cover. The Site is a former solvent recovery/chemical processing/chemical manufacturing facility that is currently unoccupied and is located on Old Waterworks Road in Old Bridge Township, Middlesex County, New Jersey.

This report presents results of VI investigation activities including sub-slab soil gas and indoor air sampling and analysis completed during September 2009. Work included sampling within the laboratory, office and warehouse portions of the building and submittal of samples for laboratory analysis of volatile organic compounds (VOCs). Sampling results were evaluated with respect to the applicable New Jersey Department of Environmental Protection (NJDEP) Soil Gas Screening Levels (SGSLs), Indoor Air Screening Levels (IASLs), and the NJDEP Decision Flow Chart for the VI Pathway (NJDEP 2005a).

Based on the findings as discussed herein, the VI pathway is not complete, and no further investigation is warranted at this time.

Site background information is provided in Section 2. The VI investigation work and results are discussed in Section 3. A summary of findings and recommendations is presented in Section 4.

2.0 SITE BACKGROUND

2.1 ENVIRONMENTAL SETTING

The Site location is shown in Figure 1. A brief summary of Site geology, Site hydrogeology, and Site topography are presented below (CIBA, 2008).

Geology:

The CPS Site lies in the northeastern part of the Coastal Plain Physiographic Province which consists of a large, regional wedge of unconsolidated and poorly-consolidated sands, gravels, silts and clays. The depth to the top of bedrock near the CPS Site is approximately 270 to 300 feet below ground surface (ft-bgs).

At the CPS Site, the Old Bridge Sand, a member of the Cretaceous-age Raritan Formation, occurs from just below ground surface to 55 ft-bgs. The Old Bridge Sand is primarily a fine- to coarse-grained, well-sorted sand with occasional, discontinuous, thin beds of clay. Locally, a veneer of the Quaternary-age Cape May Formation overlies the Old Bridge Sand. The two units are lithologically similar and are in direct hydraulic connection.

The Old Bridge Sand is underlain by the South Amboy Fire Clay. Where present, the South Amboy Fire Clay is found at a depth varying from 55 to 85 ft-bgs. The clay was found to be thin or absent beneath portions of the CPS and Madison sites. Underlying the South Amboy Fire Clay is a thin layer of the Sayreville Sand, which has a composition similar to the Old Bridge Sand. The laterally continuous Woodbridge Clay with an average thickness of about 100 ft lies beneath the Sayreville Sand and is the confining unit between the Old Bridge Sand and Farrington Sand aquifers. The underlying Farrington Sand is a fine- to medium-grained unit of variable thickness.

Hydrogeology:

The Cape May, Old Bridge and Sayreville Sand units comprise the Old Bridge water-table aquifer at the CPS facility and the Runyon Well Field. The South Amboy Fire Clay is a confining unit existing within the Old Bridge aquifer, but is not laterally continuous. The Woodbridge Clay, a continuous confining unit with a thickness of about 100 ft, separates the Old Bridge Sand and Farrington Sand aquifers. The Farrington Sand is also a major regional aquifer.

Based on local aquifer pumping tests, the average hydraulic conductivity (K) of the Old Bridge aquifer in the vicinity of the CPS Site ranges from approximately 74 to 100 ft/day, and the effective porosity is approximately 40 percent. Storage values range from 0.02 to 0.05, which are typical for unconfined aquifers containing clay layers.

Ground water levels are shallow, encountered from approximately 6 to 10 ft-bgs in monitoring wells located on and downgradient of the CPS Site. Water level fluctuations are coincident with precipitation events due to the permeable recharge characteristics of the ground surface.

Ground water elevation contours indicate a southwest flow direction under both static and pumping conditions. The hydraulic gradient of the water table appears to be consistent and relatively flat at an average value of 0.004 foot/foot. Water table levels measured adjacent to Pricketts Pond indicate that ground water from the north discharges into the pond; to the south the pond appears to recharge the aquifer.

Based on ground water data collected at the CPS Site, the flow direction and hydraulic gradient are similar to the regional values.

Topography:

Regional topography around the CPS Site is relatively flat with little natural relief. The land surface elevation is approximately 25 ft above mean sea level (ft-msl). Local topography slopes gently to the south and southwest, towards Pricketts and Tennent Ponds.

2.2 SITE CONCEPTUAL MODEL – POTENTIAL EXPOSURE PATHWAYS

A Site conceptual exposure model was developed based on the Site conditions, fate and transport characteristics of the Site-related contaminants, mechanisms of toxicity of Site-related contaminants, and potential receptors. A complete exposure pathway is defined as one in which the Site-related constituents can be traced or expected to travel from the source to a receptor that can be affected by each contaminant. If any of these conditions are missing, the pathway is considered to be incomplete. An ecological exposure pathway is considered incomplete if habitat is not present. Potential complete exposure pathways at the Site include potential direct contact with contaminated soils or groundwater or vapor exposure by construction workers and potential for indoor air quality impacts via subsurface vapor transport. Potential exposure pathways were evaluated as follows.

Vapor Transport

Exposure to indoor air impacted by vapor intrusion from groundwater and/or subsurface soil into buildings is recognized as a potential human health risk, particularly where volatiles are present in water table ground water, in subsurface soil, or where free product or non-aqueous phase liquid (NAPL) is present. Federal and state regulatory requirements and guidance (USEPA, 2001, 2002, 2004, NJDEP, 2005a, 2005b, 2006) for evaluation of indoor air list three major techniques or tools for assessing vapor intrusion impacts to indoor air: vapor transport modeling (including the Johnson and Ettinger Vapor Intrusion Model (Johnson & Ettinger, 1991) with numerous technical updates); Soil Gas Sampling; and Indoor Air Monitoring.

Based on the Remedial Investigation (RI) data, VOC-impacted groundwater appears to be limited to the main process area of the CPS Site. Hydropunch and ground water sampling have isolated the most VOC-impacted area to the southern portion of the main process area and Tank Farms 1 through 5. The "hotspot" of the contaminant plume is directly south of the CPS building, with an extent (west to east) of less than 140 ft. The full areal extent of the impact area above maximum contaminant levels (MCLs) is shown in Appendix A. Groundwater at the Site tends to flow in an approximately southwestern direction, and the plume in general moves away from the CPS building. However, Site related contaminants have been found in one well (WCC-1M) located northeast of the CPS building (see section 2.3 for more details). The vertical distribution of contaminant compounds is based primarily on hydropunch sampling data. In general, total VOC concentrations were highest at the water table and decreased with depth. The vertical extent of the hotspot is approximately 40 ft-bgs, but may extend to depths up to 90 ft-bgs. Quarterly groundwater sampling was performed during 2007, and groundwater sample results were reviewed for an initial evaluation of vapor intrusion pathway (see Section 2.3). Additional VI investigation was completed during 2009 and is the subject of this report.

2.3 GROUNDWATER SAMPLING RESULTS

Ground water sampling is conducted quarterly at the Site as part of the Performance Monitoring Program (PMP). In June 2007, CIBA performed work that included a round of water level measurements and sampling of 26 wells. Results of that sampling event will be used to evaluate the VI pathway. The most recent PMP report was submitted in September 2007 for the First and Second Quarter 2007.

Ground water data indicate that chlorinated solvents are the primary contaminants of concern (COCs) for the potential on-site vapor intrusion pathway, consistent with previous RI results. Another on-site COC is benzene. The constituents identified in **Table 1** were detected in monitoring wells at concentrations above the current NJDEP Groundwater Screening Levels (GWSLs) for vapor intrusion in the second quarter 2007. For non-detects, reporting limits that are above the GWSLs are included as a conservative measure.

Ground water sample results for the primary Site-related constituents of concern detected above the NJDEP Groundwater Quality Standards (GWQS) and the GWSL (where applicable) are included in **Appendix A**. Site-wide ground water level measurements indicate that the average depth to the ground water table ranged from approximately 5.6-9.6 ft-bgs, during 2007. Depth to ground water beneath the building (warehouse and office/laboratory space) appears to be approximately 2.5 ft. Based on the June 2007 measured ground water contour, the on-site subject structure is upgradient of the highest ground water contaminant concentration, but within the area of the delineated plume. One well, WCC-1M is upgradient of the building with VOC (1,2-Dichloroethane [1,2-DCA] and trichloroethylene [TCE]) detections above the GWSL. Although the detected exceedances are at a distance of 280 ft from the building, which is greater than the NJDEP recommended screening criteria of 100 ft, further evaluation of the VI pathway was determined to be warranted based on the interpolated extent of the groundwater plume above MCLs (see Appendix A). Further assessment of the VI pathway has been evaluated through the use of concurrent and co-located sub-slab soil gas and indoor air sampling and is the subject of this report. As required by NJDEP, ambient air sampling was also conducted.

Ground water sample results and elevation data for samples collected during the first and second quarter 2007 were included in the VI Work Plan. Complete results for the on-site ground water investigation were transmitted to the USEPA and NJDEP (CIBA, 2007). Groundwater sample results for VOCs exceeding both the NJDEP GWQSs and GWSLs are indicated on tables and figures in Appendix A.

3.0 VAPOR INTRUSION INVESTIGATION AND RESULTS

3.1 TECHNICAL OVERVIEW

The on-site VI investigation was conducted in accordance with the VI Work Plan that was submitted May 14, 2009 and approved by the NJDEP in an e-mail dated June 3, 2009. The work activities completed and discussed in this section are summarized below:

- Site-walk to determine appropriate sampling locations;
- Field mobilization including utility mark-out/geophysical survey to verify the absence of underground utilities at proposed drilling and sample locations;
- Collection of soil gas and indoor air samples and submittal of samples for laboratory analyses of VOCs using Method TO-15; and,
- Data evaluation of results with respect to applicable regulatory criteria.

Field sampling activities during September 2009 included sub-slab and indoor air sampling within the office, laboratory, and warehouse portions of the building (4 sample locations). In addition, three (3) background ambient air samples were collected as part of the sampling program. Two of the background samples were collected from inside the building, one in each of the stairwell landings, and the third background sample was collected outside and upwind of the building location.

Field sampling and laboratory analysis was performed in accordance with the work plan and applicable protocols contained in the NJDEP Vapor Intrusion Guidance Document (October 2005) and Field Sampling Procedures Manual (August 2005). Sub-slab soil gas and indoor air samples were conducted concurrently along with ambient air sampling to provide data on potential background sources of contamination. Indoor air samples were collected first (Day 1) followed by installation of permanent probes and collection of sub-slab samples (Days 2 and 3) to avoid potential contribution or interferences from the sub-slab soil sampling operations on the indoor air samples. Photographs of sample locations and sampling devices are presented in **Appendix B**.

All samples were submitted to Accutest Laboratories (Accutest) of Dayton, New Jersey for analysis of VOCs using Method TO-15. The sampling and laboratory analytical program included applicable quality assurance/quality control requirements specified in the NJDEP VI Guidance and the analytical method, including completion of TO-15 field test data sheets, clean canister

certification, method blanks, instrument blanks, and laboratory control samples. Laboratory analytical reports are included in **Appendix C**. Copies of all chains of custody are included in the laboratory reports. Data validation was performed by CIBA and results indicate that laboratory analytical data is acceptable for use with minor qualifications. Some sample results for methylene chloride were negated due to the presence of this compound in the laboratory method blank. Data validation summary reports will be included in the Final Supplemental RI Report.

The sampling program is summarized on **Table 2**. Indoor air and sub-slab soil gas sample results for the September 2009 investigation are presented in **Tables 3 and 4**, respectively. A summary of detected VOCs is presented in **Table 5**. Sample results exceeding applicable screening levels are indicated on **Figure 2**.

Sampling activities and results are discussed in Sections 3.2 and 3.3. A summary of findings and recommendation is presented in Section 4. Based on the VI investigation results, the vapor intrusion pathway was judged to be incomplete and no further investigation or action is recommended.

3.2 FIELD MOBILIZATION AND SAMPLING

Field mobilization began on September 15th and sampling was completed September 17th, 2009. During this time frame additional samples were collected at the adjacent Madison facility as part of the off-site vapor intrusion work plan; results of the off-site investigation are being submitted under separate cover. Activities for the on-site VI investigation included:

- review of the Site's Health and Safety Plan (HASP) and field mobilization including utility mark-out/geophysical survey to verify the absence of underground utilities at proposed intrusive drilling locations;
- collection of soil gas samples and indoor air samples as well as ambient or outside air samples using Summa canisters at selected locations; and
- submittal of samples for laboratory analysis of VOCs.

A preliminary building inspection was performed on January 30, 2008 to identify sample locations and support work plan preparation. The building evaluation included completion of the NJDEP Indoor Air Building Survey and Sampling Form. The building is currently unoccupied and the Heating, Ventilation, and Air Conditioning (HVAC) is being operated at a minimum level to

prevent cold weather damage. The building inspection addressed the following items consistent with NJDEP VI guidance:

- determination and analysis of building construction;
- analysis of potential background sources of VOCs;
- identification of potential VI pathways into a structure and possible sampling locations; and,
- review of VI sampling procedures with building occupants/owners.

The building is slab-on grade construction (6 to 8-inch thick concrete) and is divided into a 2 floor administration/laboratory and a single-story warehouse (see Figure 2). The office portion is located nearest to the groundwater impacts at the northeast corner of the building and has carpeted flooring. The laboratory has vinyl floor tiles and multiple floor drains that are connected to the sanitary sewer. The warehouse area has a concrete floor and is used for storage of small gas powered equipment and chemicals associated with the groundwater treatment system, including TOLCIDE (an industrial antimicrobial), metafloc-c, FeREMEDE, and calcium chloride.

3.3 SOIL GAS AND INDOOR AIR SAMPLING – SEPTEMBER 2009

This section summarizes the sub-slab soil gas and indoor air sample collection and analysis as well as the evaluation of the associated analytical data.

3.3.1 Sampling and Analysis

Indoor air samples were collected (following the procedures specified in the NJDEP VI Guidance and the Field Sampling Procedures Manual (NJDEP, 2005b)) by MACTEC using laboratory supplied 6-Liter stainless steel canisters over a 24-hour period during September 15-16, 2009. Weather observations during that period of time indicate that the temperature ranged from 16.1-18.8 degrees Celsius (°C), no precipitation was observed and barometric pressure was at 30.27 in mercury (Hg). Indoor air samples were co-located within the same building spaces as sub-slab soil gas samples and collected from breathing zone height (3 to 5 ft). Three (3) background air samples were collected, 2 were located within the 2nd floor stairwell landings and one was located upwind of the building along the southeastern site boundary. Indoor and outdoor air samples were transferred, under chain of custody, to Accutest Laboratories in Dayton, New Jersey. Samples were analyzed for VOCs using USEPA Method TO-15. Field Data Records and field logs are included in **Appendix D**.

Immediately following collection of indoor air samples and removal of canisters from building spaces, permanent sub-slab soil gas probes were installed on September 16-17, 2009 and samples were collected September 17, 2009. During the soil gas sampling temperature was recorded at 15 °C and barometric pressure at 30.30 in Hg, no precipitation was observed during this period of time. A summary of collected sub-slab soil gas, indoor air, and outdoor air samples is presented in Table 2.

Locations of sub-slab soil gas samples, indoor air samples, and outdoor samples are identified in Figure 2. Soil gas samples were collected using direct-push equipment and permanent soil vapor probes in accordance with the work plan, and the NJDEP VI Guidance (NJDEP, 2005a) and the Field Sampling Procedures Manual (2005b). Drilling and soil vapor sampling equipment was provided by TPI Environmental, Inc. with field oversight and sample collection by MACTEC. Concrete coring equipment was used to provide access for probe installation. Field observation indicated that the concrete slab ranged from 6-8” in thickness. Boreholes were advanced approximately 1 ft below slab and permanent probes were set in place at this depth, with the exception of sample point SG-03, which was installed directly below slab due to a high water table at this location. Permanent soil gas probes were constructed from 6” double screened stainless steel vapor sampling implants that were packed in sand, sealed with bentonite, and fitted with 3” aluminum flush mounts that were set in place with concrete.

Prior to soil gas sample collection, the annular seal of each sampling point was tested for leaks using an inert trace compound (helium) to verify the integrity of the seal and confirm no surface air short-circuiting of the sampling point. Helium trace gas was not detected during the sampling activities indicating that all sampling points were effectively sealed. Each sampling point was purged of approximately 3 volumes of air using a purge rate <200 milliliters per minute (ml/min), prior to sample collection. Soil gas samples were collected using laboratory-supplied, stainless steel, 1-Liter Summa canisters using a flow rate of approximately 33 ml/min (sample time 30 minutes). At location SG-03, a duplicate sample was collected using a Y fitting and a flow rate set to one-half the flow of the field sample canisters (sample time 1 hour), thus ensuring that the combined flow rate was equal to the flow of one field sample. All samples were submitted, under chain of custody, to Accutest Laboratories for laboratory analysis of VOCs using USEPA Method TO-15.

3.3.2 Data Evaluation

Data were evaluated with respect to the NJDEP SGSLs and IASLs (as applicable) to determine the need for further investigation or action in accordance with NJDEP VI Guidance and Decision Matrix Flow Chart. Indoor air sample results were also evaluated with respect to the Rapid Action Levels (RALs) to determine the need for any immediate action. The indoor and background air and sub-slab soil gas sample results for the September 2009 sampling event are presented in Tables 3 and 4, respectively. A summary of detected VOCs is presented in **Table 5**. Sample results above the SGSLs and/or IASLs (as applicable) are indicated on Figure 2. Other data evaluation factors included the relative exceedance of the screening level, the presence and concentration of VOCs in sub-slab soil gas and indoor air samples, background sample results and possible effects of background contamination sources.

No VOCs were detected above the RALs. VOCs detected in soil gas samples above SGSLs included benzene, chloroform, and tetrachloroethene (warehouse); and chloroform (administrative/laboratory). Of those constituents none were detected in indoor air samples above the IASL in the warehouse or laboratory/administrative areas. In addition, while not detected in soil gas samples, methyl tert butyl ether (MTBE) was detected at a concentration of 1.1 parts per billion-volume (ppbv) in indoor air sample IA-01 (located in the warehouse), slightly above the IASL of 1.0 ppbv. MTBE was also detected in one of the background air samples, but at a concentration below the IASL. These results suggest that MTBE detections in indoor air samples may be associated with building operations or other sources rather than a subsurface source. No VOCs were detected in both soil gas and indoor air samples above applicable screening levels.

Background Samples: Background air sample results indicate that low levels of VOCs (mainly <1 ppbv) were detected in all three background samples, with generally good correlation with respect to compounds and concentrations. VOCs detected in background samples included: 2-butanone, acetone, benzene, chloromethane, dichlorodifluoromethane, methyl ethyl ketone, methylene chloride, toluene, and trichlorofluoromethane.

Laboratory analytical summary reports for the September 2009 sampling event are provided in Appendix C.

4.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

4.1 FINDINGS

Sub-slab soil gas and indoor air sample data were evaluated with respect to the NJDEP SGSLs and IASLs (as applicable) to determine the need for further investigation or action in accordance with NJDEP VI Guidance and Decision Matrix Flow Chart. Indoor air sample results were also evaluated with respect to the RALs to determine the need for any immediate action. Other factors in the data evaluation included the relative exceedance of the screening level, the presence and concentration of VOCs in sub-slab soil gas and indoor air samples, background sample results and possible effects of background contamination sources. The findings can be summarized as:

- VOCs were not detected above the NJDEP RALs in any of the indoor air samples.
- No VOCs were detected above applicable screening levels in both the sub-slab soil gas and indoor air samples. Some VOCs were detected above SGSLs in soil gas samples (i.e., chloroform, tetrachloroethene, and benzene) but were not detected in indoor air samples, indicating that the VI pathway is not complete for these compounds.
- VOC concentrations in all indoor air samples were below the IASLs, with the exception of the MTBE concentration in IA-01. This exceedance is likely associated with background or other sources, such as the gas powered equipment stored in this area of the warehouse. MTBE was not detected in the associated soil gas sample, indicating that this compound is not attributable to the VI pathway.

4.2 RECOMMENDATIONS

Consistent with the NJDEP Vapor Intrusion Guidance, multiple lines of evidence were evaluated to determine appropriate action for the VI pathway. Based on the VI investigation findings and review of data with respect to NJDEP screening levels and VI Guidance/Decision Flow Chart, there is no immediate adverse health risk or rapid response action required at this time.

Based on the lack of correlation of soil gas and indoor air results, and potential contribution from other sources (i.e., gas powered equipment), no further action is recommended for the on-site VI investigation.

5.0 REFERENCES

CIBA Specialty Chemicals, 2007. *Q1/Q2 Performance Monitoring Program (PMP) Report Performance Monitoring Plan Report*. September 2007.

CIBA Specialty Chemicals, 2008. Supplemental *Remedial Investigation Work Plan, CPS/Madison Superfund Site.* March 2008.

Johnson, P.C., and R. A. Ettinger, 1991. *Heuristic Model for Predicting the Intrusion Rate of Contaminant Vapors Into Buildings*. Environ. Sci. Technol. 25: 1445-1452.

New Jersey Department of Environmental Protection (NJDEP), 2005a. Vapor Intrusion Guidance. Updated October 2005.

NJDEP, 2005b. Field Sampling Procedures Manual. Updated August 2005.

NJDEP, 2006. *New Jersey Johnson & Ettinger Spreadsheets* (NJDEP, 2006); online at http://www.nj.gov/dep/srp/guidance/vaporintrusion/njje.htm

NJDEP, 2007. *Tables for the Vapor Intrusion Guidance* (NJDEP, 2007); online at http://www.state.nj.us/dep//srp/guidance/vaporintrusion/vig.htm. Updated March 2007.

NJDEP, 2008. Technical Requirements for Site Remediation, N.J.A.C. 7:26E. September 2, 2008.

United States Environmental Protection Agency (USEPA), 2001. *Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings.* Version 2.3. U.S. EPA, Office of Emergency and Remedial Response, Toxics Integration Branch, Washington, DC. Available online at: http://www.epa.gov/superfund/programs/risk/airmodel/johnson_ettinger.htm

USEPA, 2002. *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Ground Water and Soils (Subsurface Vapor Intrusion Guidance)*. Federal Register, Vol. 67, No. 230: 71169–72 and EPA530-F-02-052.

USEPA, 2004. *User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings*. February 22, 2004.

TABLES

Table 1
2007 Groundwater Concentrations Above Groundwater Screening Levels
On-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, NJ

Constituent	GWSL	MI-8	RS-2B	RS-2C	CPS-3A	WCC-1M	WE-2RB	CPS-1
Benzene	15		21	32	69		27	64
Trichloroethene	1	2	3.2	3.9	7.7	1.6	8	4 U
1,2-Dichloroethane	2	5.6	13	25	98	5.8	54	14
Vinyl Chloride	1		4.7	5.5	17		3.3	5.8
Tetrachloroethene	1				1.1		2.9	4 U
1,4-Dichlorobenzene	75						85	
1,1,2,2-Tetrachloroethane	4						11	4 U
Chlorobenzene	770							810

Concentrations are reported in ug/l (micrograms per liter)
GWSL – Groundwater screening levels

Prepared by: EMJ
Checked by: DAB

Table 2
Summary of Sampling Program – Soil Gas and Indoor Air Samples
On-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, NJ

Sample Location	Indoor Air Samples	Sub Slab Soil Gas Samples
Warehouse (northern)	IA-01	SG-02
Warehouse (southern)	IA-02	SG-01
Administrative portion	IA-03	SG-03
Laboratory portion	IA-04	SG-04
Background #1 (stairwell 1 landing)	IA-BG-05	N/A
Background #2 (stairwell 2 landing	IA-BG-06	N/A
Background #3 (southeastern perimeter)	IA-BG-07	N/A

Prepared by: EMJ
Checked by: MWV

Table 3
Indoor Air Sample Results
On-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Name:		**NJDEP Nonresidential IASLs**		**NJDEP Rapid Action Levels [c] (RAL)**		IA-01				IA-02				IA-03				IA-03 DUP			
Sample Matrix:						Indoor Air				Indoor Air				Indoor Air				Indoor Air			
Sample Date:						9/16/2009				9/16/2009				9/16/2009				9/16/2009			
Lab ID:						JA2838-1				JA28238-2				JA28238-3				JA28238-4			
Compound	**CAS #**	ppbv	*µg/m³*	ppbv	*µg/m³*	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**
1,1,1-Trichloroethane	71-55-6	260	1,400	na	na	0.025	U	0.14	U	0.025	U	0.14	U	0.025	U	0.14	U	0.025	U	0.14	U
1,1,2,2-Tetrachloroethane	79-34-5	0.5	3	na	na	0.023	U	0.16	U	0.023	U	0.16	U	0.023	U	0.16	U	0.023	U	0.16	U
1,1,2-Trichloro-1,2,2-trifluoroethane (F	76-13-1	5,700	44,000	na	na	0.18	J	1.38	J	0.28		2.15		0.022	U	0.17	U	0.12	J	0.92	J
1,1,2-Trichloroethane	79-00-5	0.5	3	na	na	0.021	U	0.11	U	0.021	U	0.11	U	0.021	U	0.11	U	0.021	U	0.11	U
1,1-Dichloroethane	75-34-3	180	720	na	na	0.032	U	0.13	U	0.032	U	0.13	U	0.032	U	0.13	U	0.032	U	0.13	U
1,1-Dichloroethene	75-35-4	3,900	15,000	na	na	0.044	U	0.17	U	0.044	U	0.17	U	0.044	U	0.17	U	0.044	U	0.17	U
1,2,4-Trichlorobenzene	120-82-1	77	310	na	na	0.065	U	0.48	U	0.065	U	0.48	U	0.065	U	0.48	U	0.065	U	0.48	U
1,2,4-Trimethylbenzene	95-63-6	na	na	na	na	0.34		1.67		0.44		2.16		0.24		1.18		0.28		1.38	
1,2-Dibromoethane	106-93-4	0.5	4	na	na	0.021	U	0.16	U	0.021	U	0.16	U	0.021	U	0.16	U	0.021	U	0.16	U
1,2-Dichlorobenzene	95-50-1	34	200	na	na	0.037	U	0.22	U	0.037	U	0.22	U	0.037	U	0.22	U	0.037	U	0.22	U
1,2-Dichloroethane	107-06-2	0.5	2	na	na	0.036	U	0.15	U	0.036	U	0.15	U	0.036	U	0.15	U	0.036	U	0.15	U
1,2-Dichloroethene (cis)	156-59-2	13	51	66	16	0.028	U	0.11	U	0.028	U	0.11	U	0.028	U	0.11	U	0.028	U	0.11	U
1,2-Dichloroethene (trans)	156-60-5	26	100	66	16	0.035	U	0.14	U	0.035	U	0.14	U	0.035	U	0.14	U	0.035	U	0.14	U
1,2-Dichloropropane	78-87-5	0.5	2	na	na	0.029	U	0.13	U	0.029	U	0.13	U	0.029	U	0.13	U	0.029	U	0.13	U
1,2-Dichlorotetrafluoroethane (Freon 114	76-14-2	na	na	na	na	0.022	U	0.15	U	0.022	U	0.15	U	0.022	U	0.15	U	0.022	U	0.15	U
1,3,5-Trimethylbenzene	108-67-8	na	na	na	na	0.026	U	0.13	U	0.12	J	0.59	J	0.026	U	0.13	U	0.026	U	0.13	U
1,3-Butadiene	106-99-0	0.5	1	na	na	0.036	U	0.08	U	0.036	U	0.08	U	0.036	U	0.08	U	0.036	U	0.08	U
1,3-Dichlorobenzene	541-73-1	3	15	na	na	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U
1,4-Dichlorobenzene	106-46-7	0.5	3	na	na	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U
1,4-Dioxane	123-91-1	na	na	na	na	0.063	U	0.23	U	0.063	U	0.23	U	0.063	U	0.23	U	0.063	U	0.23	U
2,2,4-Trimethylpentane	540-84-1	na	na	na	na	0.32		1.49		0.35		1.63		0.18	J	0.84	J	0.23		1.07	
2-Butanone (Methyl ethyl ketone)	78-93-3	2,400	7,200	na	na	0.47		1.39		1.4		4.13		0.40		1.18		1.1		3.24	
2-Chlorotoluene (o-Chlorotoluene)	95-49-8	20	100	na	na	0.022	U	0.11	U	0.022	U	0.11	U	0.022	U	0.11	U	0.022	U	0.11	U
2-Hexanone	591-78-6	na	na	na	na	0.030	U	0.12	U	0.030	U	0.12	U	0.030	U	0.12	U	0.030	U	0.12	U
3-Chloropropene (allyl chloride)	107-05-1	0.5	2	na	na	0.031	U	0.10	U	0.031	U	0.10	U	0.031	U	0.10	U	0.031	U	0.10	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	na	na	na	na	0.043	U	0.21	U	0.043	U	0.21	U	0.043	U	0.21	U	0.043	U	0.21	U
4-Methyl-2-pentanone (MIBK)	108-10-1	na	na	na	na	0.045	U	0.18	U	0.045	U	0.18	U	0.045	U	0.18	U	0.045	U	0.18	U
Acetone (2-propanone)	67-64-1	1,900	4,600	6,600	2,800	7.3		17.34		13.2		31.36		5.4		12.83		14.1		33.49	
Benzene	71-43-2	0.5	2	14	4	0.29		0.93		0.36		1.15		0.24		0.77		0.25		0.80	
Benzyl Chloride	100-44-7	na	na	na	na	0.033	U	0.17	U	0.033	U	0.17	U	0.033	U	0.17	U	0.033	U	0.17	U
Bromodichloromethane	75-27-4	0.5	3	na	na	0.028	U	0.19	U	0.028	U	0.19	U	0.028	U	0.19	U	0.028	U	0.19	U
Bromoethene	593-60-2	0.5	2	na	na	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U
Bromoform	75-25-2	0.5	5	na	na	0.022	U	0.23	U	0.022	U	0.23	U	0.022	U	0.23	U	0.022	U	0.23	U
Bromomethane (Methyl bromide)	74-83-9	2	7	na	na	0.024	U	0.09	U	0.024	U	0.09	U	0.024	U	0.09	U	0.024	U	0.09	U
Carbon disulfide	75-15-0	330	1,000	na	na	0.034	U	0.11	U	0.034	U	0.11	U	0.034	U	0.11	U	0.68		2.12	
Carbon tetrachloride	56-23-5	0.5	3	10	2	0.022	U	0.14	U	0.022	U	0.14	U	0.022	U	0.14	U	0.12	J	0.75	J
Chlorobenzene	108-90-7	16	72	na	na	0.026	U	0.12	U	0.026	U	0.12	U	0.026	U	0.12	U	0.026	U	0.12	U
Chloroethane	75-00-3	2	5	na	na	0.040	U	0.11	U	0.040	U	0.11	U	0.040	U	0.11	U	0.040	U	0.11	U
Chloroform	67-66-3	0.5	2	8	2	0.028	U	0.14	U	0.028	U	0.14	U	0.028	U	0.14	U	0.028	U	0.14	U
Chloromethane (Methyl chloride)	74-87-3	64	130	na	na	0.60		1.24		1.7		3.51		0.70		1.45		0.93		1.92	
cis-1,3-Dichloropropene	10061-01-5	na	na	na	na	0.019	U	0.09	U	0.019	U	0.09	U	0.019	U	0.09	U	0.019	U	0.09	U
Cyclohexane	110-82-7	2,500	8,700	na	na	0.061	U	0.21	U	0.061	U	0.21	U	0.061	U	0.21	U	0.061	U	0.21	U
Dibromochloromethane	124-48-1	0.5	4	na	na	0.034	U	0.29	U	0.034	U	0.29	U	0.034	U	0.29	U	0.034	U	0.29	U
Dichlorodifluoromethane	75-71-8	52	260	na	na	0.024	U	0.12	U	0.024	U	0.12	U	0.024	U	0.12	U	0.024	U	0.12	U
Ethanol	64-17-5	na	na	na	na	11.9		22.42		7.5		14.13		6.1		11.49		7.8		14.70	
Ethyl Acetate	141-78-6	na	na	na	na	0.78		2.81		2.3		8.28		0.051	U	0.18	U	0.051	U	0.18	U
Ethylbenzene	100-41-4	340	1,500	2,200	480	0.15	J	0.65	J	0.19	J	0.83	J	0.12	J	0.52	J	0.11	J	0.48	J
Hexachlorobutadiene	87-68-3	0.5	5	na	na	0.043	U	0.46	U	0.043	U	0.46	U	0.043	U	0.46	U	0.043	U	0.46	U
Isopropyl Alcohol	67-63-0	na	na	na	na	0.035	U	0.09	U	0.52		1.28		0.035	U	0.09	U	0.035	U	0.09	U
Methylene chloride	75-09-2	2	9	400	100	0.45		1.56		0.35		1.22		0.37		1.29		0.41		1.42	
MTBE (Methyl tert-butyl ether)	1634-04-4	1	4	200	40	**1.1**		3.97		0.68		2.45		0.022	U	0.08	U	0.33		1.19	
n-Heptane	142-82-5	na	na	na	na	0.22		0.90		0.25		1.02		0.17	J	0.70	J	0.026	U	0.11	U
n-Hexane	110-54-3	290	1,000	na	na	0.95		3.35		0.80		2.82		0.42		1.48		0.39		1.37	
Propylene	115-07-1	na	na	na	na	0.061	U	0.10	U	0.061	U	0.10	U	0.061	U	0.10	U	0.061	U	0.10	U
Styrene	100-42-5	340	1,500	na	na	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U
Tertiary butyl alcohol (TBA)	75-65-0	30	92	na	na	0.023	U	0.07	U	0.023	U	0.07	U	0.023	U	0.07	U	0.023	U	0.07	U
Tetrachloroethene (PCE)	127-18-4	0.5	3	30	5	0.021	U	0.14	U	0.11		0.75		0.021	U	0.14	U	0.11		0.75	
Tetrahydrofuran	109-99-9	na	na	na	na	0.032	U	0.09	U	0.032	U	0.09	U	0.032	U	0.09	U	0.21		0.62	
Toluene	108-88-3	1,900	7,200	10,000	2,800	0.89		3.35		1.1		4.15		0.76		2.86		0.65		2.45	
trans-1,3-Dichloropropene	10061-02-6	na	na	na	na	0.016	U	0.07	U	0.016	U	0.07	U	0.016	U	0.07	U	0.016	U	0.07	U
Trichloroethene (TCE)	79-01-6	0.5	3	20	3	0.019	U	0.10	U	0.019	U	0.10	U	0.019	U	0.10	U	0.019	U	0.10	U
Trichlorofluoromethane (Freon 11)	75-69-4	180	1,000	na	na	0.73		4.10		0.33		1.85		0.44		2.47		0.73		4.10	
Vinyl Acetate	108-05-4	na	na	na	na	0.046	U	0.16	U	0.046	U	0.16	U	0.046	U	0.16	U	0.046	U	0.16	U
Vinyl chloride	75-01-4	0.5	1	7	3	0.023	U	0.06	U	0.023	U	0.06	U	0.023	U	0.06	U	0.023	U	0.06	U
Xylenes (m&p)	1330-20-7	na	na	na	na	0.52		2.26		0.69		3.00		0.39		1.69		0.41		1.78	
Xylenes (o)	95-47-6	na	na	na	na	0.18	J	0.78	J	0.24		1.04		0.14	J	0.61	J	0.16	J	0.69	J
Xylenes (total)	1330-20-7	35	150	220	50	0.70		3.04		0.93		4.04		0.53		2.30		0.57		2.48	

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level
Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 3
Indoor Air Sample Results
On-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Name:		**NJDEP Nonresidential IASLs**		IA-04				IA-BG-05				IA-BG-06				IA-BG-07			
Sample Matrix:				Indoor Air				Ambient Air				Ambient Air				Ambient Air			
Sample Date:				9/16/2009				9/16/2009				9/16/2009				9/16/2009			
Lab ID:				JA28238-5				JA28238-6				JA28238-7				JA28238-8			
Compound	**CAS #**	ppbv	*µg/m³*	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**
1,1,1-Trichloroethane	71-55-6	260	1,400	0.025	U	0.14	U	0.025	U	0.14	U	0.025	U	0.14	U	0.025	U	0.14	U
1,1,2,2-Tetrachloroethane	79-34-5	0.5	3	0.023	U	0.16	U	0.023	U	0.16	U	0.023	U	0.16	U	0.023	U	0.16	U
1,1,2-Trichloro-1,2,2-trifluoroethane (F	76-13-1	5,700	44,000	0.13	J	1.00	J	0.022	U	0.17	U	0.34		2.61		0.022	U	0.17	U
1,1,2-Trichloroethane	79-00-5	0.5	3	0.021	U	0.11	U	0.021	U	0.11	U	0.021	U	0.11	U	0.021	U	0.11	U
1,1-Dichloroethane	75-34-3	180	720	0.032	U	0.13	U	0.032	U	0.13	U	0.032	U	0.13	U	0.032	U	0.13	U
1,1-Dichloroethene	75-35-4	3,900	15,000	0.044	U	0.17	U	0.044	U	0.17	U	0.044	U	0.17	U	0.044	U	0.17	U
1,2,4-Trichlorobenzene	120-82-1	77	310	0.065	U	0.48	U	0.065	U	0.48	U	0.065	U	0.48	U	0.065	U	0.48	U
1,2,4-Trimethylbenzene	95-63-6	na	na	0.53		2.61		0.48		2.36		0.23		1.13		0.021	U	0.10	U
1,2-Dibromoethane	106-93-4	0.5	4	0.021	U	0.16	U	0.021	U	0.16	U	0.021	U	0.16	U	0.021	U	0.16	U
1,2-Dichlorobenzene	95-50-1	34	200	0.037	U	0.22	U	0.037	U	0.22	U	0.037	U	0.22	U	0.037	U	0.22	U
1,2-Dichloroethane	107-06-2	0.5	2	0.036	U	0.15	U	0.036	U	0.15	U	0.036	U	0.15	U	0.036	U	0.15	U
1,2-Dichloroethene (cis)	156-59-2	13	51	0.028	U	0.11	U	0.028	U	0.11	U	0.028	U	0.11	U	0.028	U	0.11	U
1,2-Dichloroethene (trans)	156-60-5	26	100	0.035	U	0.14	U	0.035	U	0.14	U	0.035	U	0.14	U	0.035	U	0.14	U
1,2-Dichloropropane	78-87-5	0.5	2	0.029	U	0.13	U	0.029	U	0.13	U	0.029	U	0.13	U	0.029	U	0.13	U
1,2-Dichlorotetrafluoroethane (Freon 114	76-14-2	na	na	0.022	U	0.15	U	0.022	U	0.15	U	0.022	U	0.15	U	0.022	U	0.15	U
1,3,5-Trimethylbenzene	108-67-8	na	na	0.14	J	0.69	J	0.12	J	0.59	J	0.026	U	0.13	U	0.026	U	0.13	U
1,3-Butadiene	106-99-0	0.5	1	0.036	U	0.08	U	0.036	U	0.08	U	0.036	U	0.08	U	0.036	U	0.08	U
1,3-Dichlorobenzene	541-73-1	3	15	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U
1,4-Dichlorobenzene	106-46-7	0.5	3	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U	0.032	U	0.19	U
1,4-Dioxane	123-91-1	na	na	0.063	U	0.23	U	0.063	U	0.23	U	0.063	U	0.23	U	0.063	U	0.23	U
2,2,4-Trimethylpentane	540-84-1	na	na	0.35		1.63		0.23		1.07		0.020	U	0.09	U	0.020	U	0.09	U
2-Butanone (Methyl ethyl ketone)	78-93-3	2,400	7,200	1.2		3.54		0.45		1.33		0.72		2.12		0.22		0.65	
2-Chlorotoluene (o-Chlorotoluene)	95-49-8	20	100	0.022	U	0.11	U	0.022	U	0.11	U	0.022	U	0.11	U	0.022	U	0.11	U
2-Hexanone	591-78-6	na	na	0.030	U	0.12	U	0.030	U	0.12	U	0.030	U	0.12	U	0.030	U	0.12	U
3-Chloropropene (allyl chloride)	107-05-1	0.5	2	0.031	U	0.10	U	0.031	U	0.10	U	0.031	U	0.10	U	0.031	U	0.10	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	na	na	0.11	J	0.54	J	0.043	U	0.21	U	0.043	U	0.21	U	0.043	U	0.21	U
4-Methyl-2-pentanone (MIBK)	108-10-1	na	na	0.045	U	0.18	U	0.045	U	0.18	U	0.12	J	0.49	J	0.045	U	0.18	U
Acetone (2-propanone)	67-64-1	1,900	4,600	10.9		25.89		7.1		16.87		8.5		20.19		5.1		12.11	
Benzene	71-43-2	0.5	2	0.36		1.15		0.24		0.77		0.15	J	0.48	J	0.021	U	0.07	U
Benzyl Chloride	100-44-7	na	na	0.033	U	0.17	U	0.033	U	0.17	U	0.033	U	0.17	U	0.033	U	0.17	U
Bromodichloromethane	75-27-4	0.5	3	0.028	U	0.19	U	0.028	U	0.19	U	0.028	U	0.19	U	0.028	U	0.19	U
Bromoethene	593-60-2	0.5	2	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U
Bromoform	75-25-2	0.5	5	0.022	U	0.23	U	0.022	U	0.23	U	0.022	U	0.23	U	0.022	U	0.23	U
Bromomethane (Methyl bromide)	74-83-9	2	7	0.024	U	0.09	U	0.024	U	0.09	U	0.024	U	0.09	U	0.024	U	0.09	U
Carbon disulfide	75-15-0	330	1,000	0.034	U	0.11	U	0.034	U	0.11	U	0.034	U	0.11	U	0.034	U	0.11	U
Carbon tetrachloride	56-23-5	0.5	3	0.022	U	0.14	U	0.022	U	0.14	U	0.022	U	0.14	U	0.022	U	0.14	U
Chlorobenzene	108-90-7	16	72	0.026	U	0.12	U	0.026	U	0.12	U	0.026	U	0.12	U	0.026	U	0.12	U
Chloroethane	75-00-3	2	5	0.040	U	0.11	U	0.040	U	0.11	U	0.040	U	0.11	U	0.040	U	0.11	U
Chloroform	67-66-3	0.5	2	0.028	U	0.14	U	0.028	U	0.14	U	0.028	U	0.14	U	0.028	U	0.14	U
Chloromethane (Methyl chloride)	74-87-3	64	130	0.59		1.22		0.58		1.20		1.0		2.07		0.51		1.05	
cis-1,3-Dichloropropene	10061-01-5	na	na	0.019	U	0.09	U	0.019	U	0.09	U	0.019	U	0.09	U	0.019	U	0.09	U
Cyclohexane	110-82-7	2,500	8,700	0.061	U	0.21	U	0.061	U	0.21	U	0.061	U	0.21	U	0.061	U	0.21	U
Dibromochloromethane	124-48-1	0.5	4	0.034	U	0.29	U	0.034	U	0.29	U	0.034	U	0.29	U	0.034	U	0.29	U
Dichlorodifluoromethane	75-71-8	52	260	0.024	U	0.12	U	0.024	U	0.12	U	0.024	U	0.12	U	0.024	U	0.12	U
Ethanol	64-17-5	na	na	8.0		15.07		4.0		7.54		48.8	E	91.95	E	1.7		3.20	
Ethyl Acetate	141-78-6	na	na	0.051	U	0.18	U	0.051	U	0.18	U	0.051	U	0.18	U	0.051	U	0.18	U
Ethylbenzene	100-41-4	340	1,500	0.22		0.96		0.12	J	0.52	J	0.019	U	0.08	U	0.019	U	0.08	U
Hexachlorobutadiene	87-68-3	0.5	5	0.043	U	0.46	U	0.043	U	0.46	U	0.043	U	0.46	U	0.043	U	0.46	U
Isopropyl Alcohol	67-63-0	na	na	0.035	U	0.09	U	0.035	U	0.09	U	2.2		5.41		0.035	U	0.09	U
Methylene chloride	75-09-2	2	9	0.18	J	0.63	J	0.025	U	0.09	U	0.57		1.98		0.025	U	0.09	U
MTBE (Methyl tert-butyl ether)	1634-04-4	1	4	0.57		2.06		0.29		1.05		0.022	U	0.08	U	0.022	U	0.08	U
n-Heptane	142-82-5	na	na	0.23		0.94		0.16	J	0.66	J	0.026	U	0.11	U	0.026	U	0.11	U
n-Hexane	110-54-3	290	1,000	0.70		2.47		0.42		1.48		0.019	U	0.07	U	0.019	U	0.07	U
Propylene	115-07-1	na	na	0.061	U	0.10	U	0.061	U	0.10	U	0.061	U	0.10	U	0.061	U	0.10	U
Styrene	100-42-5	340	1,500	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U
Tertiary butyl alcohol (TBA)	75-65-0	30	92	0.023	U	0.07	U	0.023	U	0.07	U	0.023	U	0.07	U	0.023	U	0.07	U
Tetrachloroethene (PCE)	127-18-4	0.5	3	0.070		0.47		0.080		0.54		0.050		0.34		0.021	U	0.14	U
Tetrahydrofuran	109-99-9	na	na	0.032	U	0.09	U	0.032	U	0.09	U	0.032	U	0.09	U	0.032	U	0.09	U
Toluene	108-88-3	1,900	7,200	1.2		4.52		0.69		2.60		0.36		1.36		0.13	J	0.49	J
trans-1,3-Dichloropropene	10061-02-6	na	na	0.016	U	0.07	U	0.016	U	0.07	U	0.016	U	0.07	U	0.016	U	0.07	U
Trichloroethene (TCE)	79-01-6	0.5	3	0.019	U	0.10	U	0.019	U	0.10	U	0.019	U	0.10	U	0.019	U	0.10	U
Trichlorofluoromethane (Freon 11)	75-69-4	180	1,000	0.27		1.52		0.27		1.52		1.1		6.18		0.24		1.35	
Vinyl Acetate	108-05-4	na	na	0.046	U	0.16	U	0.046	U	0.16	U	0.046	U	0.16	U	0.046	U	0.16	U
Vinyl chloride	75-01-4	0.5	1	0.023	U	0.06	U	0.023	U	0.06	U	0.023	U	0.06	U	0.023	U	0.06	U
Xylenes (m&p)	1330-20-7	na	na	0.80		3.47		0.45		1.95		0.26		1.13		0.045	U	0.20	U
Xylenes (o)	95-47-6	na	na	0.28		1.22		0.16	J	0.69	J	0.11	J	0.48	J	0.023	U	0.10	U
Xylenes (total)	1330-20-7	35	150	1.1		4.78		0.61		2.65		0.37		1.61		0.023	U	0.10	U

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Prepared By: : EMJ
Checked By: MWV

Table 4
Sub-Slab Soil Gas Sample Results
On-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Name:		**NJDEP Nonresidential SGSLs**		SG-01				SG-02				SG-03				SG-03 DUP				SG-04			
Sample Matrix:				Soil Gas				Soil Gas				Soil Gas				Soil Gas				Soil Gas			
Sample Date:				9/17/2009				9/17/2009				9/17/2009				9/17/2009				9/17/2009			
Lab ID:				JA28238-9				JA2838-10				JA2838-11				JA28238-12				JA28238-13			
Compound	**CAS #**	ppbv	*µg/m³*	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**
1,1,1-Trichloroethane	71-55-6	13,000	72,000	0.20	U	1.09	U	0.30	U	1.64	U	0.098	U	0.53	U	0.098	U	0.53	U	0.098	U	0.53	U
1,1,2,2-Tetrachloroethane	79-34-5	5	34	0.18	U	1.24	U	0.28	U	1.92	U	0.091	U	0.62	U	0.091	U	0.62	U	0.091	U	0.62	U
1,1,2-Trichloro-1,2,2-trifluoroethane (F	76-13-1	290,000	2,200,000	0.18	U	1.38	U	0.27	U	2.07	U	0.088	U	0.67	U	0.088	U	0.67	U	0.088	U	0.67	U
1,1,2-Trichloroethane	79-00-5	5	27	0.17	U	0.93	U	0.26	U	1.42	U	0.085	U	0.46	U	0.085	U	0.46	U	0.085	U	0.46	U
1,1-Dichloroethane	75-34-3	8,800	36,000	0.26	U	1.05	U	0.40	U	1.62	U	0.13	U	0.53	U	0.13	U	0.53	U	0.13	U	0.53	U
1,1-Dichloroethene	75-35-4	3,900	15,000	0.35	U	1.39	U	0.54	U	2.14	U	0.18	U	0.71	U	0.18	U	0.71	U	0.18	U	0.71	U
1,2,4-Trichlorobenzene	120-82-1	340	2,600	0.52	U	3.86	U	0.80	U	5.94	U	0.26	U	1.93	U	0.26	U	1.93	U	0.26	U	1.93	U
1,2,4-Trimethylbenzene	95-63-6	na	na	14.4		70.8		30.9		151.9		8.8		43.3		15.5		76.20		11.9		58.50	
1,2-Dibromoethane	106-93-4	5	38	0.16	U	1.23	U	0.25	U	1.92	U	0.082	U	0.63	U	0.082	U	0.63	U	0.082	U	0.63	U
1,2-Dichlorobenzene	95-50-1	1,700	10,000	0.30	U	1.80	U	0.46	U	2.77	U	0.15	U	0.90	U	0.15	U	0.90	U	0.15	U	0.90	U
1,2-Dichloroethane	107-06-2	5	20	0.29	U	1.17	U	0.44	U	1.78	U	0.14	U	0.57	U	0.14	U	0.57	U	0.14	U	0.57	U
1,2-Dichloroethene (cis)	156-59-2	640	2,600	0.23	U	0.91	U	0.35	U	1.39	U	0.11	U	0.44	U	0.11	U	0.44	U	0.11	U	0.44	U
1,2-Dichloroethene (trans)	156-60-5	1,300	5,100	0.28	U	1.11	U	0.43	U	1.70	U	0.14	U	0.56	U	0.14	U	0.56	U	0.14	U	0.56	U
1,2-Dichloropropane	78-87-5	5	23	0.23	U	1.06	U	0.35	U	1.62	U	0.11	U	0.51	U	0.11	U	0.51	U	0.11	U	0.51	U
1,2-Dichlorotetrafluoroethane (Freon 114	76-14-2	na	na	0.18	U	1.26	U	0.27	U	1.89	U	0.088	U	0.62	U	0.088	U	0.62	U	0.088	U	0.62	U
1,3,5-Trimethylbenzene	108-67-8	na	na	3.3		16.2		7.1		34.9		1.8		8.85		3.3		16.22		2.7		13.27	
1,3-Butadiene	106-99-0	5	11	0.29	U	0.64	U	0.44	U	0.97	U	0.14	U	0.31	U	0.14	U	0.31	U	0.14	U	0.31	U
1,3-Dichlorobenzene	541-73-1	130	770	0.25	U	1.50	U	0.39	U	2.34	U	0.13	U	0.78	U	0.13	U	0.78	U	0.13	U	0.78	U
1,4-Dichlorobenzene	106-46-7	5	32	0.26	U	1.56	U	0.39	U	2.34	U	0.13	U	0.78	U	0.13	U	0.78	U	0.13	U	0.78	U
1,4-Dioxane	123-91-1	na	na	0.50	U	1.80	U	0.77	U	2.78	U	0.25	U	0.90	U	0.25	U	0.90	U	0.25	U	0.90	U
2,2,4-Trimethylpentane	540-84-1	na	na	2.0		9.34		5.2		24.3		0.081	U	0.38	U	0.081	U	0.38	U	0.081	U	0.38	U
2-Butanone (Methyl ethyl ketone)	78-93-3	120,000	360,000	5.4		15.9		29.8		87.9		6.1		18.0		7.0		20.6		19.5		57.5	
2-Chlorotoluene (o-Chlorotoluene)	95-49-8	990	5,100	0.17	U	0.88	U	0.27	U	1.40	U	0.087	U	0.45	U	0.087	U	0.45	U	0.087	U	0.45	U
2-Hexanone	591-78-6	na	na	1.7		6.95		7.1		29.0		1.3		5.32		1.5		6.13		2.6		10.63	
3-Chloropropene (allyl chloride)	107-05-1	11	34	0.25	U	0.78	U	0.38	U	1.19	U	0.12	U	0.38	U	0.12	U	0.38	U	0.12	U	0.38	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	na	na	5.9		29.0		13.6		66.9		3.8		18.7		7.1		34.9		5.3		26.06	
4-Methyl-2-pentanone (MIBK)	108-10-1	na	na	0.36	U	1.48	U	2.6		10.7		0.18	U	0.74	U	0.18	U	0.74	U	1.7		6.97	
Acetone (2-propanone)	67-64-1	97,000	230,000	9.4		22.3		39.3		93.4		16.7		39.7		16.0		38.01		78.5		186.47	
Benzene	71-43-2	8	26	6.3		20.1		**29.4**		**93.9**		4.5		14.4		6.0		19.2		5.0		15.97	
Benzyl Chloride	100-44-7	na	na	0.27	U	1.39	U	0.41	U	2.11	U	0.13	U	0.67	U	0.13	U	0.67	U	0.13	U	0.67	U
Bromodichloromethane	75-27-4	5	34	0.22	U	1.47	U	0.34	U	2.28	U	0.11	U	0.74	U	0.11	U	0.74	U	0.11	U	0.74	U
Bromoethene	593-60-2	5	22	0.15	U	0.66	U	0.22	U	0.96	U	0.073	U	0.32	U	0.073	U	0.32	U	0.073	U	0.32	U
Bromoform	75-25-2	18	180	0.18	U	1.86	U	0.27	U	2.79	U	0.088	U	0.91	U	0.088	U	0.91	U	0.088	U	0.91	U
Bromomethane (Methyl bromide)	74-83-9	92	360	0.19	U	0.74	U	0.29	U	1.13	U	0.096	U	0.37	U	0.096	U	0.37	U	0.096	U	0.37	U
Carbon disulfide	75-15-0	16,000	51,000	0.27	U	0.84	U	25.0		77.9		0.13	U	0.40	U	0.13	U	0.40	U	6.3		19.6	
Carbon tetrachloride	56-23-5	5	31	0.18	U	1.13	U	0.27	U	1.70	U	0.088	U	0.55	U	0.088	U	0.55	U	0.088	U	0.55	U
Chlorobenzene	108-90-7	780	3,600	0.21	U	0.97	U	0.32	U	1.47	U	0.10	U	0.46	U	0.10	U	0.46	U	0.10	U	0.46	U
Chloroethane	75-00-3	93	250	0.32	U	0.84	U	0.49	U	1.29	U	0.16	U	0.42	U	0.16	U	0.42	U	0.16	U	0.42	U
Chloroform	67-66-3	5	24	**6.1**		**29.8**		**41.4**		**202.2**		**6.9**		**33.7**		4.3		21.0		**42.9**		**209.5**	
Chloromethane (Methyl chloride)	74-87-3	3,200	6,600	0.38	U	0.78	U	0.57	U	1.18	U	0.19	U	0.39	U	0.19	U	0.39	U	0.19	U	0.39	U
cis-1,3-Dichloropropene	10061-01-5	na	na	0.15	U	0.68	U	0.23	U	1.04	U	0.076	U	0.35	U	0.076	U	0.35	U	0.076	U	0.35	U
Cyclohexane	110-82-7	130,000	430,000	0.49	U	1.69	U	0.75	U	2.58	U	0.24	U	0.83	U	0.24	U	0.83	U	0.24	U	0.83	U
Dibromochloromethane	124-48-1	5	43	0.28	U	2.39	U	0.42	U	3.58	U	0.14	U	1.19	U	0.14	U	1.19	U	0.14	U	1.19	U
Dichlorodifluoromethane	75-71-8	2,600	13,000	0.19	U	0.94	U	0.29	U	1.43	U	0.095	U	0.47	U	0.095	U	0.47	U	0.095	U	0.47	U
Ethanol	64-17-5	na	na	10.6		20.0		22.9		43.1		12.3		23.2		19.3		36.4		23.9		45.0	
Ethyl Acetate	141-78-6	na	na	0.41	U	1.48	U	0.63	U	2.27	U	0.21	U	0.76	U	0.21	U	0.76	U	6.6		23.8	
Ethylbenzene	100-41-4	17,000	74,000	16.8		73.0		50.9		221.1		9.7		42.1		16.0		69.5		14.9		64.7	
Hexachlorobutadiene	87-68-3	5	53	0.34	U	3.63	U	0.53	U	5.65	U	0.17	U	1.81	U	0.17	U	1.81	U	0.17	U	1.81	U
Isopropyl Alcohol	67-63-0	na	na	0.28	U	0.69	U	0.42	U	1.03	U	0.14	U	0.34	U	0.14	U	0.34	U	4.4		10.82	
Methylene chloride	75-09-2	120	430	0.20	U	0.69	U	0.31	U	1.08	U	0.84		2.92		0.92		3.20		0.90		3.13	
MTBE (Methyl tert-butyl ether)	1634-04-4	50	180	0.18	U	0.65	U	0.27	U	0.97	U	0.089	U	0.32	U	0.089	U	0.32	U	1.1		3.97	
n-Heptane	142-82-5	na	na	2.0		8.20		11.6		47.5		1.4		5.74		1.8		7.38		1.6		6.56	
n-Hexane	110-54-3	14,000	51,000	2.9		10.2		11.7		41.2		2.0		7.05		2.5		8.81		1.6		5.64	
Propylene	115-07-1	na	na	0.49	U	0.84	U	0.75	U	1.29	U	0.25	U	0.43	U	0.25	U	0.43	U	11.1		19.07	
Styrene	100-42-5	17,000	73,000	0.15	U	0.64	U	0.23	U	0.98	U	0.074	U	0.32	U	0.074	U	0.32	U	0.49	J	2.09	J
Tertiary butyl alcohol (TBA)	75-65-0	1500	4600	0.18	U	0.55	U	0.28	U	0.85	U	0.092	U	0.28	U	0.092	U	0.28	U	1.8		5.46	
Tetrachloroethene (PCE)	127-18-4	5	36	**138**		**936**		**15.4**		**104.4**		0.22		1.49		0.34		2.31		0.46		3.12	
Tetrahydrofuran	109-99-9	na	na	0.25	U	0.74	U	0.39	U	1.15	U	0.13	U	0.38	U	0.13	U	0.38	U	0.13	U	0.38	U
Toluene	108-88-3	95,000	360,000	275		1036		702		2645.5		191		719.78		269		1013.73		179		674.56	
trans-1,3-Dichloropropene	10061-02-6	na	na	0.13	U	0.59	U	0.20	U	0.91	U	0.064	U	0.29	U	0.064	U	0.29	U	0.064	U	0.29	U
Trichloroethene (TCE)	79-01-6	5	27	0.52		2.79		0.23	U	1.24	U	0.074	U	0.40	U	0.074	U	0.40	U	0.21		1.13	
Trichlorofluoromethane (Freon 11)	75-69-4	9,100	51,000	0.17	U	0.96	U	0.26	U	1.46	U	0.085	U	0.48	U	0.58	J	3.26	J	0.60	J	3.37	J
Vinyl Acetate	108-05-4	na	na	0.36	U	1.27	U	0.56	U	1.97	U	0.18	U	0.63	U	0.18	U	0.63	U	0.18	U	0.63	U
Vinyl chloride	75-01-4	19	48	0.18	U	0.46	U	0.28	U	0.72	U	0.092	U	0.24	U	0.092	U	0.24	U	0.092	U	0.24	U
Xylenes (m&p)	1330-20-7	na	na	68.6		298.0		185		803.6		41.0		178.09		68.1		295.80		59.9		260.18	
Xylenes (o)	95-47-6	na	na	17.0		73.8		42.6		185.0		9.3		40.40		15.7		68.19		14.7		63.85	
Xylenes (total)	1330-20-7	1800	7700	85.5		371.4		227		986.0		50.3		218.48		83.7		363.56		74.6		324.03	

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no NJDEP criteria established)

Prepared By: : EMJ
Checked By: MWV

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 5
Summary of Detected Constituents in Soil Gas and Indoor Air Samples
On-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, NJ

Sample Name: **Sample Matrix:** **Sample Date:** **Lab ID:**		**NJDEP Nonresidential IASLs**		**NJDEP Nonresidential SGSLs**		IA-01 Indoor Air 9/16/2009 JA2838-1			SG-01 Soil Gas 9/17/2009 JA28238-9			IA-02 Indoor Air 9/16/2009 JA28238-2			SG-02 Soil Gas 9/17/2009 JA2838-10			IA-03 Indoor Air 9/16/2009 JA28238-3			SG-03 Soil Gas 9/17/2009 JA2838-11		
Compound	**CAS #**	ppbv	*µg/m³*	ppbv	*µg/m³*	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**
1,1,2-Trichloro-1,2,2-trifluoroethane (F	76-13-1	5,700	44,000	290,000	2,200,000	0.18	J	1.38	J	0.18	U	1.38	U	0.28		2.15		0.27	U	2.07	U	0.022	U	0.17	U	0.088	U	0.67	U
1,2,4-Trimethylbenzene	95-63-6	na	na	na	na	0.34		1.67		14.4		70.8		0.44		2.16		30.9		151.9		0.24		1.18		8.8		43.3	
1,3,5-Trimethylbenzene	108-67-8	na	na	na	na	0.026	U	0.13	U	3.3		16.2		0.12	J	0.59	J	7.1		34.9		0.026	U	0.13	U	1.8		8.85	
2,2,4-Trimethylpentane	540-84-1	na	na	na	na	0.32		1.49		2.0		9.34		0.35		1.63		5.2		24.3		0.18	J	0.84	J	0.081	U	0.38	U
2-Butanone (Methyl ethyl ketone)	78-93-3	2,400	7,200	120,000	360,000	0.47		1.39		5.4		15.9		1.4		4.13		29.8		87.9		0.40		1.18		6.1		18.0	
2-Hexanone	591-78-6	na	na	na	na	0.030	U	0.12	U	1.7		6.95		0.030	U	0.12	U	7.1		29.0		0.030	U	0.12	U	1.3		5.32	
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	na	na	na	na	0.043	U	0.21	U	5.9		29.0		0.043	U	0.21	U	13.6		66.9		0.043	U	0.21	U	3.8		18.7	
4-Methyl-2-pentanone (MIBK)	108-10-1	na	na	na	na	0.045	U	0.18	U	0.36	U	1.48	U	0.045	U	0.18	U	2.6		10.7		0.045	U	0.18	U	0.18	U	0.74	U
Acetone (2-propanone)	67-64-1	1,900	4,600	97,000	230,000	7.3		17.34		9.4		22.3		13.2		31.36		39.3		93.4		5.4		12.83		16.7		39.7	
Benzene	71-43-2	0.5	2	8	26	0.29		0.93		6.3		20.1		0.36		1.15		**29.4**		**93.9**		0.24		0.77		4.5		14.4	
Carbon disulfide	75-15-0	330	1,000	16,000	51,000	0.034	U	0.11	U	0.27	U	0.84	U	0.034	U	0.11	U	25.0		77.9		0.034	U	0.11	U	0.13	U	0.40	U
Carbon tetrachloride	56-23-5	0.5	3	5	31	0.022	U	0.14	U	0.18	U	1.13	U	0.022	U	0.14	U	0.27	U	1.70	U	0.022	U	0.14	U	0.088	U	0.55	U
Chloroform	67-66-3	0.5	2	5	24	0.028	U	0.14	U	**6.1**		**29.8**		0.028	U	0.14	U	**41.4**		**202.2**		0.028	U	0.14	U	**6.9**		**33.7**	
Chloromethane (Methyl chloride)	74-87-3	64	130	3,200	6,600	0.60		1.24		0.38	U	0.78	U	1.7		3.51		0.57	U	1.18	U	0.70		1.45		0.19	U	0.39	U
Ethanol	64-17-5	na	na	na	na	11.9		22.42		10.6		20.0		7.5		14.13		22.9		43.1		6.1		11.49		12.3		23.2	
Ethyl Acetate	141-78-6	na	na	na	na	0.78		2.81		0.41	U	1.48	U	2.3		8.28		0.63	U	2.27	U	0.051	U	0.18	U	0.21	U	0.76	U
Ethylbenzene	100-41-4	340	1,500	17,000	74,000	0.15	J	0.65	J	16.8		73.0		0.19	J	0.83	J	50.9		221.1		0.12	J	0.52	J	9.7		42.1	
Isopropyl Alcohol	67-63-0	na	na	na	na	0.035	U	0.09	U	0.28	U	0.69	U	0.52		1.28		0.42	U	1.03	U	0.035	U	0.09	U	0.14	U	0.34	U
Methylene chloride	75-09-2	2	9	120	430	0.45		1.56		0.20	U	0.69	U	0.35		1.22		0.31	U	1.08	U	0.37		1.29		0.84		2.92	
MTBE (Methyl tert-butyl ether)	1634-04-4	1	4	50	180	**1.1**		3.97		0.18	U	0.65	U	0.68		2.45		0.27	U	0.97	U	0.022	U	0.08	U	0.089	U	0.32	U
n-Heptane	142-82-5	na	na	na	na	0.22		0.90		2.0		8.20		0.25		1.02		11.6		47.5		0.17	J	0.70	J	1.4		5.74	
n-Hexane	110-54-3	290	1,000	14,000	51,000	0.95		3.35		2.9		10.2		0.80		2.82		11.7		41.2		0.42		1.48		2.0		7.05	
Propylene	115-07-1	na	na	na	na	0.061	U	0.10	U	0.49	U	0.84	U	0.061	U	0.10	U	0.75	U	1.29	U	0.061	U	0.10	U	0.25	U	0.43	U
Styrene	100-42-5	340	1,500	17,000	73,000	0.018	U	0.08	U	0.15	U	0.64	U	0.018	U	0.08	U	0.23	U	0.98	U	0.018	U	0.08	U	0.074	U	0.32	U
Tertiary butyl alcohol (TBA)	75-65-0	30	92	1500	4600	0.023	U	0.07	U	0.18	U	0.55	U	0.023	U	0.07	U	0.28	U	0.85	U	0.023	U	0.07	U	0.092	U	0.28	U
Tetrachloroethene (PCE)	127-18-4	0.5	3	5	36	0.021	U	0.14	U	**138**		**936**		0.11		0.75		**15.4**		**104.4**		0.021	U	0.14	U	0.22		1.49	
Tetrahydrofuran	109-99-9	na	na	na	na	0.032	U	0.09	U	0.25	U	0.74	U	0.032	U	0.09	U	0.39	U	1.15	U	0.032	U	0.09	U	0.13	U	0.38	U
Toluene	108-88-3	1,900	7,200	95,000	360,000	0.89		3.35		275		1036		1.1		4.15		702		2645.5		0.76		2.86		191		719.78	
Trichloroethene (TCE)	79-01-6	0.5	3	5	27	0.019	U	0.10	U	0.52		2.79		0.019	U	0.10	U	0.23	U	1.24	U	0.019	U	0.10	U	0.074	U	0.40	U
Trichlorofluoromethane (Freon 11)	75-69-4	180	1,000	9,100	51,000	0.73		4.10		0.17	U	0.96	U	0.33		1.85		0.26	U	1.46	U	0.44		2.47		0.085	U	0.48	U
Xylenes (m&p)	1330-20-7	na	na	na	na	0.52		2.26		68.6		298.0		0.69		3.00		185		803.6		0.39		1.69		41.0		178.09	
Xylenes (o)	95-47-6	na	na	na	na	0.18	J	0.78	J	17.0		73.8		0.24		1.04		42.6		185.0		0.14	J	0.61	J	9.3		40.40	
Xylenes (total)	1330-20-7	35	150	1800	7700	0.70		3.04		85.5		371.4		0.93		4.04		227		986.0		0.53		2.30		50.3		218.48	

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 5
Summary of Detected Constituents in Soil Gas and Indoor Air Samples
On-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, NJ

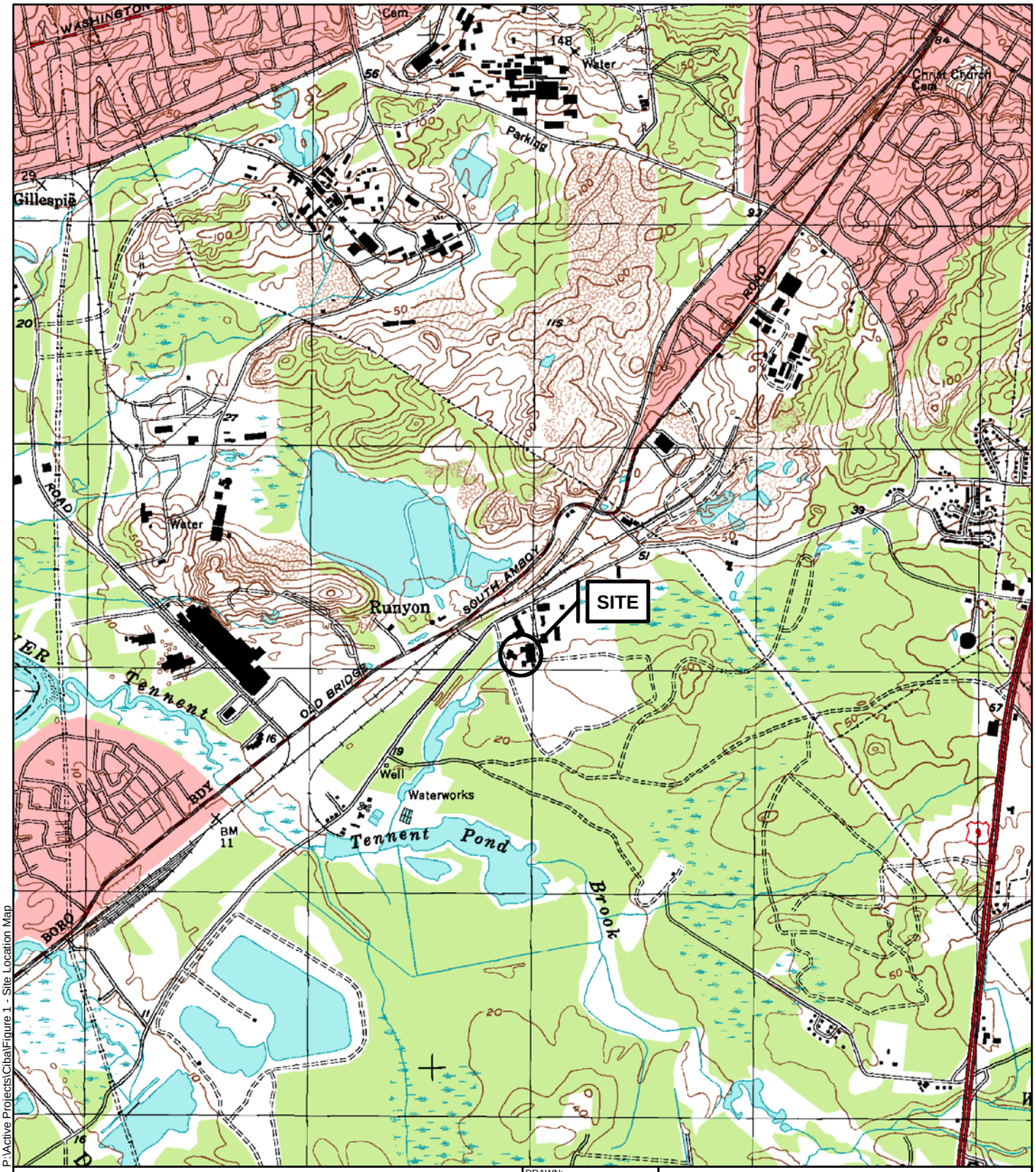
Sample Name:		**NJDEP Nonresidential IASLs**		**NJDEP Nonresidential SGSLs**		IA-03 DUP				SG-03 DUP				IA-04				SG-04				IA-BG-05				IA-BG-06				IA-BG-07			
Sample Matrix:						Indoor Air				Soil Gas				Indoor Air				Soil Gas				Ambient Air				Ambient Air				Ambient Air			
Sample Date:						9/16/2009				9/17/2009				9/16/2009				9/17/2009				9/16/2009				9/16/2009				9/16/2009			
Lab ID:						JA28238-4				JA28238-12				JA28238-5				JA28238-13				JA28238-6				JA28238-7				JA28238-8			
Compound	**CAS #**	ppbv	*µg/m³*	ppbv	*µg/m³*	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**	**ppbv**	**Q**	**ug/m³**	**Q**
1,1,2-Trichloro-1,2,2-trifluoroethane (F	76-13-1	5,700	44,000	290,000	2,200,000	0.12	J	0.92	J	0.088	U	0.67	U	0.13	J	1.00	J	0.088	U	0.67	U	0.022	U	0.17	U	0.34		2.61		0.022	U	0.17	U
1,2,4-Trimethylbenzene	95-63-6	na	na	na	na	0.28		1.38		15.5		76.2		0.53		2.61		11.9		58.50		0.48		2.36		0.23		1.13		0.021	U	0.10	U
1,3,5-Trimethylbenzene	108-67-8	na	na	na	na	0.026	U	0.13	U	3.3		16.2		0.14	J	0.69	J	2.7		13.27		0.12	J	0.59	J	0.026	U	0.13	U	0.026	U	0.13	U
2,2,4-Trimethylpentane	540-84-1	na	na	na	na	0.23		1.07		0.081	U	0.38	U	0.35		1.63		0.081	U	0.38	U	0.23		1.07		0.020	U	0.09	U	0.020	U	0.09	U
2-Butanone (Methyl ethyl ketone)	78-93-3	2,400	7,200	120,000	360,000	1.1		3.24		7.0		20.6		1.2		3.54		19.5		57.5		0.45		1.33		0.72		2.12		0.22		0.65	
2-Hexanone	591-78-6	na	na	na	na	0.030	U	0.12	U	1.5		6.13		0.030	U	0.12	U	2.6		10.63		0.030	U	0.12	U	0.030	U	0.12	U	0.030	U	0.12	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	na	na	na	na	0.043	U	0.21	U	7.1		34.9		0.11	J	0.54	J	5.3		26.06		0.043	U	0.21	U	0.043	U	0.21	U	0.043	U	0.21	U
4-Methyl-2-pentanone (MIBK)	108-10-1	na	na	na	na	0.045	U	0.18	U	0.18	U	0.74	U	0.045	U	0.18	U	1.7		6.97		0.045	U	0.18	U	0.12	J	0.49	J	0.045	U	0.18	U
Acetone (2-propanone)	67-64-1	1,900	4,600	97,000	230,000	14.1		33.49		16.0		38.0		10.9		25.89		78.5		186		7.1		16.87		8.5		20.19		5.1		12.11	
Benzene	71-43-2	0.5	2	8	26	0.25		0.80		6.0		19.2		0.36		1.15		5.0		15.97		0.24		0.77		0.15	J	0.48	J	0.021	U	0.07	U
Carbon disulfide	75-15-0	330	1,000	16,000	51,000	0.68		2.12		0.13	U	0.40	U	0.034	U	0.11	U	6.3		19.6		0.034	U	0.11	U	0.034	U	0.11	U	0.034	U	0.11	U
Carbon tetrachloride	56-23-5	0.5	3	5	31	0.12	J	0.75	J	0.088	U	0.55	U	0.022	U	0.14	U	0.088	U	0.55	U	0.022	U	0.14	U	0.022	U	0.14	U	0.022	U	0.14	U
Chloroform	67-66-3	0.5	2	5	24	0.028	U	0.14	U	4.3		21.0		0.028	U	0.14	U	**42.9**		**209**		0.028	U	0.14	U	0.028	U	0.14	U	0.028	U	0.14	U
Chloromethane (Methyl chloride)	74-87-3	64	130	3,200	6,600	0.93		1.92		0.19	U	0.39	U	0.59		1.22		0.19	U	0.39	U	0.58		1.20		1.0		2.07		0.51		1.05	
Ethanol	64-17-5	na	na	na	na	7.8		14.70		19.3		36.4		8.0		15.07		23.9		45.0		4.0		7.54		48.8	E	91.95	E	1.7		3.20	
Ethyl Acetate	141-78-6	na	na	na	na	0.051	U	0.18	U	0.21	U	0.76	U	0.051	U	0.18	U	6.6		23.8		0.051	U	0.18	U	0.051	U	0.18	U	0.051	U	0.18	U
Ethylbenzene	100-41-4	340	1,500	17,000	74,000	0.11	J	0.48	J	16.0		69.5		0.22		0.96		14.9		64.7		0.12	J	0.52	J	0.019	U	0.08	U	0.019	U	0.08	U
Isopropyl Alcohol	67-63-0	na	na	na	na	0.035	U	0.09	U	0.14	U	0.34	U	0.035	U	0.09	U	4.4		10.82		0.035	U	0.09	U	2.2		5.41		0.035	U	0.09	U
Methylene chloride	75-09-2	2	9	120	430	0.41		1.42		0.92		3.20		0.18	J	0.63	J	0.90		3.13		0.025	U	0.09	U	0.57		1.98		0.025	U	0.09	U
MTBE (Methyl tert-butyl ether)	1634-04-4	1	4	50	180	0.33		1.19		0.089	U	0.32	U	0.57		2.06		1.1		3.97		0.29		1.05		0.022	U	0.08	U	0.022	U	0.08	U
n-Heptane	142-82-5	na	na	na	na	0.026	U	0.11	U	1.8		7.38		0.23		0.94		1.6		6.56		0.16	J	0.66	J	0.026	U	0.11	U	0.026	U	0.11	U
n-Hexane	110-54-3	290	1,000	14,000	51,000	0.39		1.37		2.5		8.81		0.70		2.47		1.6		5.64		0.42		1.48		0.019	U	0.07	U	0.019	U	0.07	U
Propylene	115-07-1	na	na	na	na	0.061	U	0.10	U	0.25	U	0.43	U	0.061	U	0.10	U	11.1		19.07		0.061	U	0.10	U	0.061	U	0.10	U	0.061	U	0.10	U
Styrene	100-42-5	340	1,500	17,000	73,000	0.018	U	0.08	U	0.074	U	0.32	U	0.018	U	0.08	U	0.49	J	2.09	J	0.018	U	0.08	U	0.018	U	0.08	U	0.018	U	0.08	U
Tertiary butyl alcohol (TBA)	75-65-0	30	92	1500	4600	0.023	U	0.07	U	0.092	U	0.28	U	0.023	U	0.07	U	1.8		5.46		0.023	U	0.07	U	0.023	U	0.07	U	0.023	U	0.07	U
Tetrachloroethene (PCE)	127-18-4	0.5	3	5	36	0.11		0.75		0.34		2.31		0.070		0.47		0.46		3.12		0.080		0.54		0.050		0.34		0.021	U	0.14	U
Tetrahydrofuran	109-99-9	na	na	na	na	0.21		0.62		0.13	U	0.38	U	0.032	U	0.09	U	0.13	U	0.38	U	0.032	U	0.09	U	0.032	U	0.09	U	0.032	U	0.09	U
Toluene	108-88-3	1,900	7,200	95,000	360,000	0.65		2.45		269		1014		1.2		4.52		179		675		0.69		2.60		0.36		1.36		0.13	J	0.49	J
Trichloroethene (TCE)	79-01-6	0.5	3	5	27	0.019	U	0.10	U	0.074	U	0.40	U	0.019	U	0.10	U	0.21		1.13		0.019	U	0.10	U	0.019	U	0.10	U	0.019	U	0.10	U
Trichlorofluoromethane (Freon 11)	75-69-4	180	1,000	9,100	51,000	0.73		4.10		0.58	J	3.26	J	0.27		1.52		0.60	J	3.37	J	0.27		1.52		1.1		6.18		0.24		1.35	
Xylenes (m&p)	1330-20-7	na	na	na	na	0.41		1.78		68.1		296		0.80		3.47		59.9		260		0.45		1.95		0.26		1.13		0.045	U	0.20	U
Xylenes (o)	95-47-6	na	na	na	na	0.16	J	0.69	J	15.7		68.2		0.28		1.22		14.7		63.85		0.16	J	0.69	J	0.11	J	0.48	J	0.023	U	0.10	U
Xylenes (total)	1330-20-7	35	150	1800	7700	0.57		2.48		83.7		364		1.1		4.78		74.6		324		0.61		2.65		0.37		1.61		0.023	U	0.10	U

Notes:
IASLs - Indoor Air Screening Levels
SGSLs - Soil Gas Screening Levels
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level

Prepared By: EMJ
Checked by: MWV

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

FIGURES



0 1,000 2,000 4,000
Feet

N

DRAWN:	WSL
JOB NUMBER:	3650080108
REVISION:	02/29/08

MACTEC
200 American Metro Blvd., Suite 113
Hamilton, New Jersey 08619

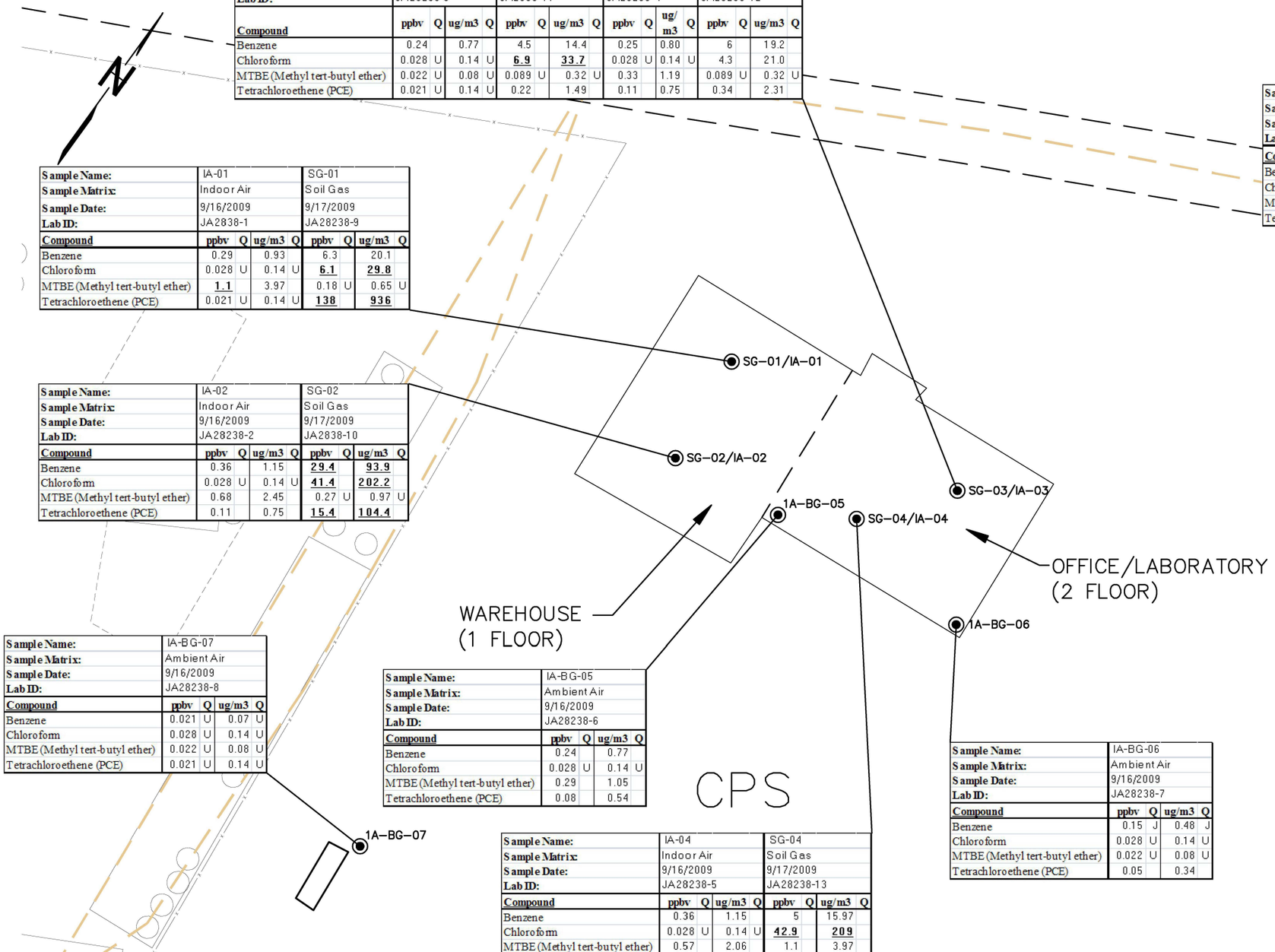
NOTES:
MAP SOURCE:
USGS QUADRANGLE 7.5 MINUTE SERIES.
SOUTH AMBOY, NEW JERSEY, 1995.

SCALE: 1:24,000

SITE COORDINATES:
NORTHING - 582841.761
EASTING - 539907.882

FIGURE 1
SITE LOCATION MAP
CPS/MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY

P:\Active Projects\Ciba\Figure 1 - Site Location Map



Sample Name:	IA-03				SG-03				IA-03 DUP				SG-03 DUP			
Sample Matrix:	Indoor Air				Soil Gas				Indoor Air				Soil Gas			
Sample Date:	9/16/2009				9/17/2009				9/16/2009				9/17/2009			
Lab ID:	JA28238-3				JA2838-11				JA28238-4				JA28238-12			
Compound	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q
Benzene	0.24		0.77		4.5		14.4		0.25		0.80		6		19.2	
Chloroform	0.028	U	0.14	U	**6.9**		**33.7**		0.028	U	0.14	U	4.3		21.0	
MTBE (Methyl tert-butyl ether)	0.022	U	0.08	U	0.089	U	0.32	U	0.33		1.19		0.089	U	0.32	U
Tetrachloroethene (PCE)	0.021	U	0.14	U	0.22		1.49		0.11		0.75		0.34		2.31	

Sample Name:	IA-01				SG-01			
Sample Matrix:	Indoor Air				Soil Gas			
Sample Date:	9/16/2009				9/17/2009			
Lab ID:	JA2838-1				JA28238-9			
Compound	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q
Benzene	0.29		0.93		6.3		20.1	
Chloroform	0.028	U	0.14	U	**6.1**		**29.8**	
MTBE (Methyl tert-butyl ether)	**1.1**		3.97		0.18	U	0.65	U
Tetrachloroethene (PCE)	0.021	U	0.14	U	**138**		**936**	

Sample Name:	IA-02				SG-02			
Sample Matrix:	Indoor Air				Soil Gas			
Sample Date:	9/16/2009				9/17/2009			
Lab ID:	JA28238-2				JA2838-10			
Compound	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q
Benzene	0.36		1.15		**29.4**		**93.9**	
Chloroform	0.028	U	0.14	U	**41.4**		**202.2**	
MTBE (Methyl tert-butyl ether)	0.68		2.45		0.27	U	0.97	U
Tetrachloroethene (PCE)	0.11		0.75		**15.4**		**104.4**	

Sample Name:	IA-BG-07			
Sample Matrix:	Ambient Air			
Sample Date:	9/16/2009			
Lab ID:	JA28238-8			
Compound	ppbv	Q	ug/m3	Q
Benzene	0.021	U	0.07	U
Chloroform	0.028	U	0.14	U
MTBE (Methyl tert-butyl ether)	0.022	U	0.08	U
Tetrachloroethene (PCE)	0.021	U	0.14	U

Sample Name:	IA-BG-05			
Sample Matrix:	Ambient Air			
Sample Date:	9/16/2009			
Lab ID:	JA28238-6			
Compound	ppbv	Q	ug/m3	Q
Benzene	0.24		0.77	
Chloroform	0.028	U	0.14	U
MTBE (Methyl tert-butyl ether)	0.29		1.05	
Tetrachloroethene (PCE)	0.08		0.54	

Sample Name:	IA-04				SG-04			
Sample Matrix:	Indoor Air				Soil Gas			
Sample Date:	9/16/2009				9/17/2009			
Lab ID:	JA28238-5				JA28238-13			
Compound	ppbv	Q	ug/m3	Q	ppbv	Q	ug/m3	Q
Benzene	0.36		1.15		5		15.97	
Chloroform	0.028	U	0.14	U	**42.9**		**209**	
MTBE (Methyl tert-butyl ether)	0.57		2.06		1.1		3.97	
Tetrachloroethene (PCE)	0.07		0.47		0.46		3.12	

Sample Name:	IA-BG-06			
Sample Matrix:	Ambient Air			
Sample Date:	9/16/2009			
Lab ID:	JA28238-7			
Compound	ppbv	Q	ug/m3	Q
Benzene	0.15	J	0.48	J
Chloroform	0.028	U	0.14	U
MTBE (Methyl tert-butyl ether)	0.022	U	0.08	U
Tetrachloroethene (PCE)	0.05		0.34	

LEGEND

SG-01/IA-01 ⊙ INDOOR AIR/SOIL GAS/INDOOR AIR SAMPLE LOCATION

PLUME LINE BASED ON EXCEEDANCE OF MCL

Sample Name: / Sample Matrix: / Sample Date: / Lab ID:		NJDEP Nonresidential IASLs		NJDEP Nonresidential SGSLs		Residential Indoor Air Screening Levels		Residential Soil Gas Screening Levels	
Compound	CAS #	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$	ppbv	$\mu g/m^3$
Benzene	71-43-2	0.5	2	8	26	0.5	2	5	16
Chloroform	67-66-3	0.5	2	5	24	0.5	2	5	24
MTBE (Methyl tert-butyl ether)	1634-04-4	1	4	50	180	0.5	2	22	78
Tetrachloroethene (PCE)	127-18-4	0.5	3	5	36	0.5	3	5	34

NOTES:

SG: SOIL GAS SAMPLE LOCATION
IA: INDOOR AIR SAMPLE LOCATION
IA–BG: INDOOR AIR BACKGROUND SAMPLE LOCATION

TWO (2) INDOOR AIR BACKGROUND SAMPLES WERE TAKEN FROM THE SECOND FLOOR STAIRWELL LANDING. ONE (1) INDOOR AIR BACKGROUND SAMPLE WERE COLLECTED OUTSIDE AND UPWIND OF THE CPS BUILDING, BASED ON PREVAILING WIND CONDITIONS.

IASLS – INDOOR AIR SCREENING LEVELS
SGSLS – SOIL GAS SCREENING LEVELS
NA: NOT AVAILABLE (NO NJDEP CRITERIA ESTABLISHED)

BOLD/UNDERLINED RESULTS EXCEED RELEVANT NONRESIDENTIAL VAPOR INTRUSION SCREENING LEVEL

QUALIFIERS:
U – NOT DETECTED ABOVE MDL
J – INDICATES AN ESTIMATED VALUE
E – INDICATES VALUE EXCEEDS CALIBRATION RANGE
B – INDICATES ANALYTE FOUND IN ASSOCIATED METHOD BLANK
N – INDICATES PRESUMPTIVE EVIDENCE OF A COMPOUND

0 25 50 100
SCALE IN FEET

REV.	DATE	STATUS	BY

MACTEC PROJECT No. 3650080108
DRAWING: ON–SITE VIWP

PREPARED/DATE: STR 12/07/09
CHECKED/DATE: EJ 12/07/09

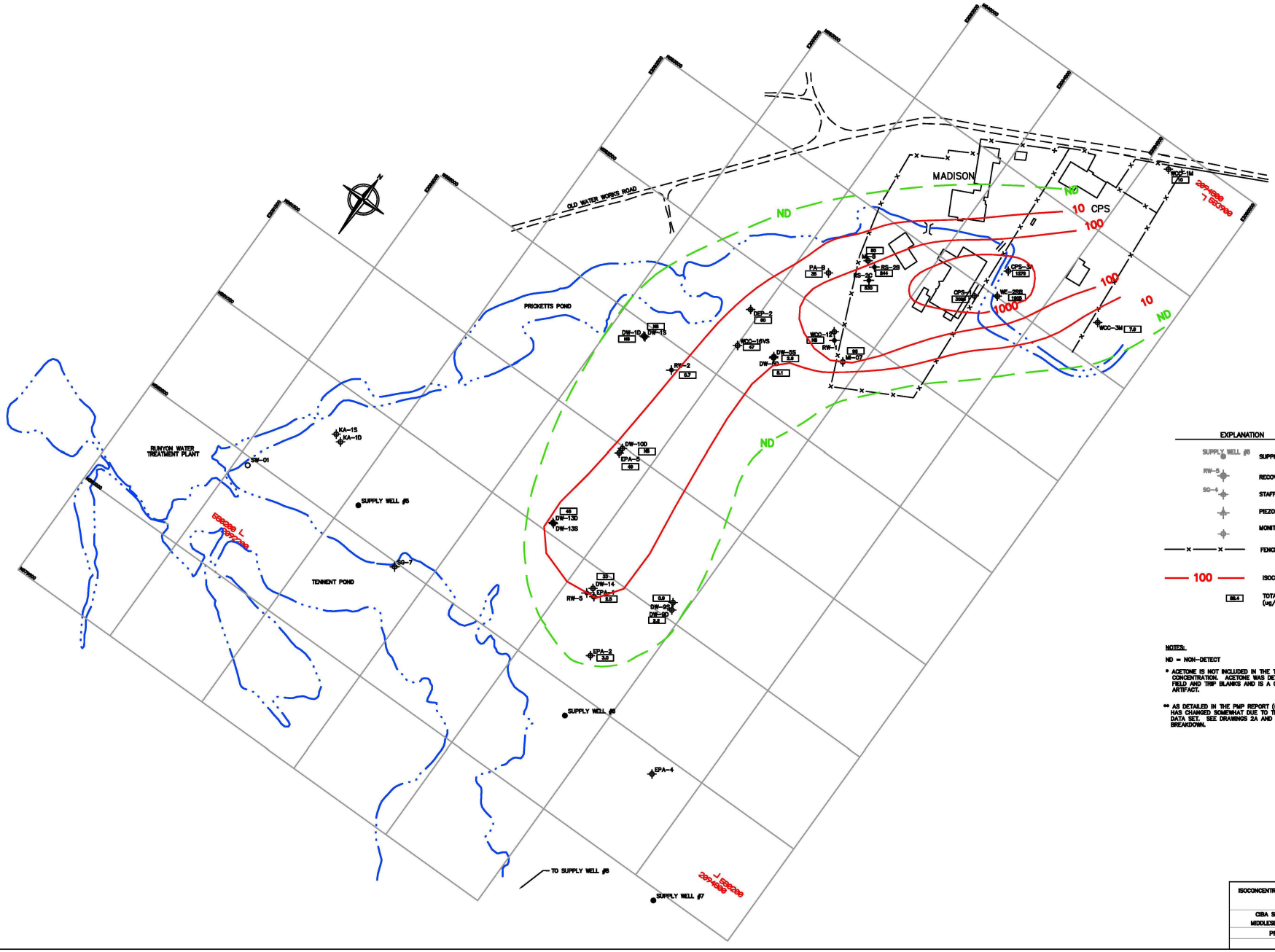
MACTEC
MACTEC Engineering and Consulting
200 American Metro Boulevard, Suite 113
Hamilton, NJ 08619

FIGURE 2
ON-SITE SUB-SLAB SOIL GAS AND INDOOR AIR SAMPLE RESULTS
CPS / MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY

P:\CADD\CIBA\CURRENT DRAWINGS\ONSITE VIWP.dwg Mon, 07 Dec 2009 – 4:02pm strudkin

APPENDIX A

REFERENCE DATA
PREVIOUS GROUNDWATER CONTOURS AND SAMPLE RESULTS



EXPLANATION

- SUPPLY WELL #6 — SUPPLY WELL
- RW-5 — RECOVERY WELL
- SG-4 — STAFF GAUGE
- PIEZOMETER
- MONITORING WELL
- FENCE LINE
- 100 — ISOCONCENTRATION CONTOUR
- 88.4 — TOTAL VOLATILE CONCENTRATION* (ug/l)

NOTES:

ND = NON-DETECT

* ACETONE IS NOT INCLUDED IN THE TOTAL VOLATILE CONCENTRATION. ACETONE WAS DETECTED IN THE FIELD AND TRIP BLANKS AND IS A COMMON LABORATORY ARTIFACT.

** AS DETAILED IN THE FMP REPORT (03/04) THE PLUME DELINEATION HAS CHANGED SOMEWHAT DUE TO THE INCLUSION OF MBTE INTO THE DATA SET. SEE DRAWINGS 2A AND 2B FOR THE CONSTITUENT BREAKDOWN.

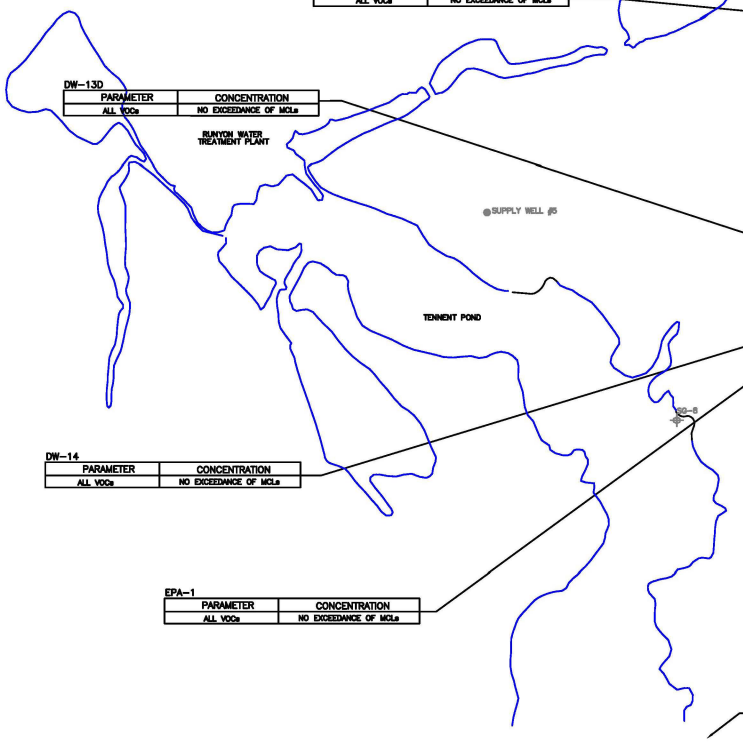
0 200 FT.
APPROXIMATE SCALE

ISOCONCENTRATION MAP OF TOTAL VOLATILE ORGANICS
JUNE 2007

CIBA SPECIALITY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

PREPARED AUGUST 2007

FIGURE: 3B



PA-8

PARAMETER	CONCENTRATION
BENZENE	2.3

MI-8

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	15
1,2-DICHLOROETHANE	5.6
1,1-DICHLOROETHENE	2.4
TRICHLOROETHENE	2.0
BENZENE	1.8

RS-2B

PARAMETER	CONCENTRATION
CHLOROBENZENE	60
1,2,4-TRICHLOROBENZENE	29
BENZENE	21
1,2-DICHLOROETHANE	13
VINYL CHLORIDE	4.7
TRICHLOROETHENE	3.2
1,1-DICHLOROETHENE	2.2
1,1,2,2-TETRACHLOROETHANE	1.4

RS-2C

PARAMETER	CONCENTRATION
CHLOROBENZENE	230
1,2,4-TRICHLOROBENZENE	33
BENZENE	32
1,2-DICHLOROETHANE	25
VINYL CHLORIDE	5.5
METHYLENE CHLORIDE	5.4
TRICHLOROETHENE	3.9
1,1,2,2-TETRACHLOROETHANE	1.5

CPS-3A

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	190
CHLOROBENZENE	180
cis-1,2-DICHLOROETHENE	130
1,2-DICHLOROETHANE	98
BENZENE	89
VINYL CHLORIDE	17
TRICHLOROETHENE	7.7
METHYLENE CHLORIDE	3.2
1,1,2,2-TETRACHLOROETHANE	2.4
TETRACHLOROETHENE	1.1

EXPLANATION

- SUPPLY WELL #8 — SUPPLY WELL
- RW-5 — RECOVERY WELL
- SG-4 — STAFF GAUGE
- PIEZOMETER
- MONITORING WELL
- FENCE LINE
- PLUME LINE BASED ON EXCEEDANCE OF MCL

CONCENTRATIONS ARE IN UG/L

WCC-1M

PARAMETER	CONCENTRATION
1,2-DICHLOROETHANE	5.8
TRICHLOROETHENE	1.6

WE-2RB

PARAMETER	CONCENTRATION
CHLOROBENZENE	390
1,2,4-TRICHLOROBENZENE	300
1,4-DICHLOROBENZENE	85
1,2-DICHLOROETHANE	54
BENZENE	27
1,1,2,2-TETRACHLOROETHANE	11
METHYLENE CHLORIDE	9.1
TRICHLOROETHENE	8.0
VINYL CHLORIDE	3.3
TETRACHLOROETHENE	2.9

DEP-2

PARAMETER	CONCENTRATION
BENZENE	4.0
1,1,2,2-TETRACHLOROETHANE	1.2

WCC-16VS

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-1S

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-1D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

RW-2

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

WCC-3M

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

CPS-1

PARAMETER	CONCENTRATION
TOLUENE	1800
CHLOROBENZENE	810
BENZENE	64
1,2,4-TRICHLOROBENZENE	31
METHYLENE CHLORIDE	21
1,2-DICHLOROETHANE	14
VINYL CHLORIDE	5.8
1,1,2,2-TETRACHLOROETHANE	4.0 U
1,1,2-TRICHLOROETHANE	4.0 U
1,1-DICHLOROETHENE	4.0 U
TRICHLOROETHENE	4.0 U
TETRACHLOROETHENE	4.0 U

WCC-12

PARAMETER	CONCENTRATION
NOT SAMPLED	

MI-7

PARAMETER	CONCENTRATION
MBTE	93

DW-5S

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-5D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-13D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-10D

PARAMETER	CONCENTRATION
NOT SAMPLED	

EPA-5

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-9D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-9S

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-14

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

EPA-1

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

EPA-2

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

NOTES:

PARAMETER	MCL – UG/L
METHYLENE CHLORIDE	3
VINYL CHLORIDE	2
1,1-DICHLOROETHENE	2
1,1-DICHLOROETHANE	50
1,2-DICHLOROETHENE (TOTAL)	(70–100)
1,2-DICHLOROETHANE	2
TRICHLOROETHENE	1
BENZENE	1
1,1,2-TRICHLOROETHANE	3
TETRACHLOROETHENE	1
1,1,2,2-TETRACHLOROETHANE	1
CHLOROBENZENE	50
1,2-DICHLOROBENZENE	600
1,4-DICHLOROBENZENE	75
1,2,4-TRICHLOROBENZENE	9
METHYL-T-BUTYL ETHER (MBTE)	70
TOLUENE	1000

MCL = MAXIMUM CONTAMINANT LEVEL

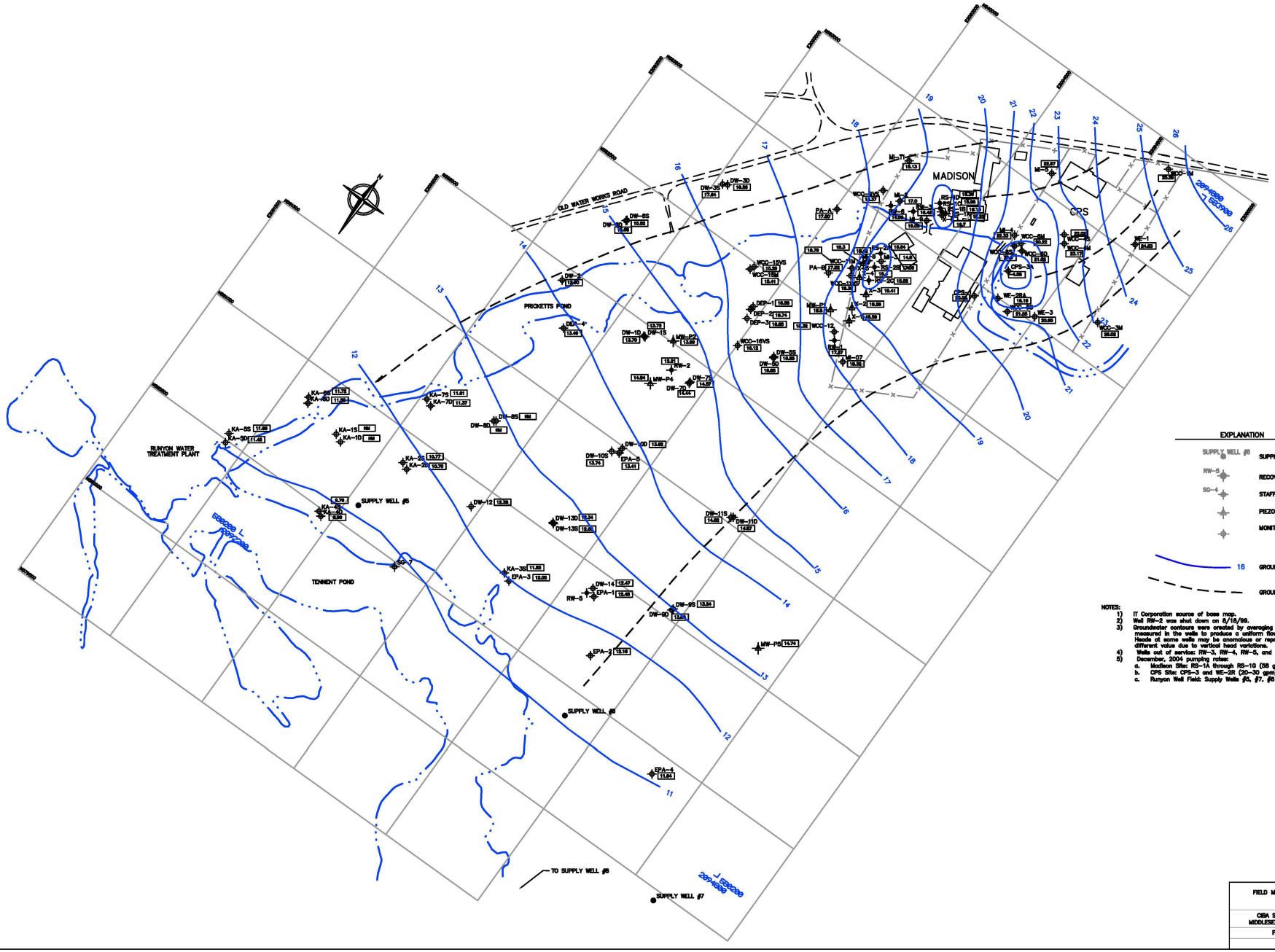
CONCENTRATIONS ARE IN UG/L

0 200 FT.
APPROXIMATE SCALE

PLUME OF VOLATILE ORGANICS
BASED ON EXCEEDANCE OF MCLs
JUNE 2007

CIBA SPECIALTY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

PREPARED AUGUST 2007
FIGURE: 2B



NOTES:

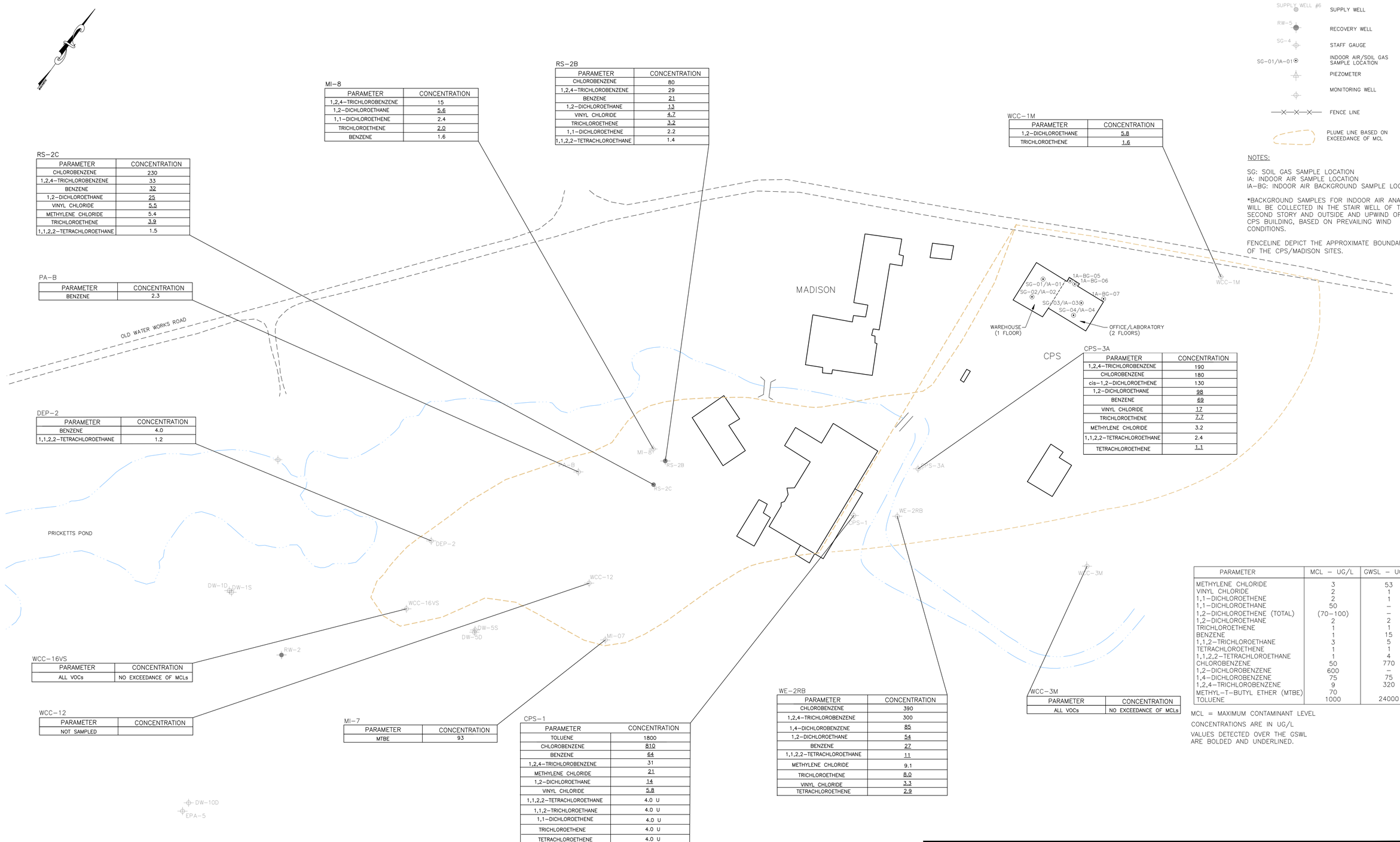
1) IT Corporation source of base map.
2) Well RW-2 was shut down on 6/18/99.
3) Groundwater contours were created by averaging the hydraulic heads measured in the wells to produce a uniform flow across the site. Heads at some wells may be anomalous or represent a slightly different value due to vertical head variations.
4) Wells out of service: RW-3, RW-4, RW-5, and RW-6.
5) December, 2004 pumping rates:
   a. Madison Site: RS-1A through RS-1G (55 gpm); RS-2B and -C (20 gpm)
   b. CPS Site: CPS-3 and WE-2R (20-30 gpm)
   c. Runyon Well Field: Supply Wells #5, #7, #8 and the Rainy Well (5,200 gpm)

FIELD MEASURED GROUND WATER CONTOURS
JUNE 2007

CIBA SPECIALTY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

PREPARED AUGUST 2007

FIGURE: 1B



LEGEND

- SUPPLY WELL #6 — SUPPLY WELL
- RW-5 — RECOVERY WELL
- SG-4 — STAFF GAUGE
- SG-01/IA-01 — INDOOR AIR/SOIL GAS SAMPLE LOCATION
- PIEZOMETER
- MONITORING WELL
- FENCE LINE
- PLUME LINE BASED ON EXCEEDANCE OF MCL

NOTES:

SG: SOIL GAS SAMPLE LOCATION
IA: INDOOR AIR SAMPLE LOCATION
IA-BG: INDOOR AIR BACKGROUND SAMPLE LOCATION

*BACKGROUND SAMPLES FOR INDOOR AIR ANALYSIS WILL BE COLLECTED IN THE STAIR WELL OF THE SECOND STORY AND OUTSIDE AND UPWIND OF THE CPS BUILDING, BASED ON PREVAILING WIND CONDITIONS.

FENCELINE DEPICT THE APPROXIMATE BOUNDARIES OF THE CPS/MADISON SITES.

MI-8

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	15
1,2-DICHLOROETHANE	5.6
1,1-DICHLOROETHENE	2.4
TRICHLOROETHENE	2.0
BENZENE	1.6

RS-2B

PARAMETER	CONCENTRATION
CHLOROBENZENE	80
1,2,4-TRICHLOROBENZENE	29
BENZENE	21
1,2-DICHLOROETHANE	13
VINYL CHLORIDE	4.7
TRICHLOROETHENE	3.2
1,1-DICHLOROETHENE	2.2
1,1,2,2-TETRACHLOROETHANE	1.4

WCC-1M

PARAMETER	CONCENTRATION
1,2-DICHLOROETHANE	5.8
TRICHLOROETHENE	1.6

RS-2C

PARAMETER	CONCENTRATION
CHLOROBENZENE	230
1,2,4-TRICHLOROBENZENE	33
BENZENE	32
1,2-DICHLOROETHANE	25
VINYL CHLORIDE	5.5
METHYLENE CHLORIDE	5.4
TRICHLOROETHENE	3.9
1,1,2,2-TETRACHLOROETHANE	1.5

PA-B

PARAMETER	CONCENTRATION
BENZENE	2.3

DEP-2

PARAMETER	CONCENTRATION
BENZENE	4.0
1,1,2,2-TETRACHLOROETHANE	1.2

CPS-3A

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	190
CHLOROBENZENE	180
cis-1,2-DICHLOROETHENE	130
1,2-DICHLOROETHANE	98
BENZENE	69
VINYL CHLORIDE	17
TRICHLOROETHENE	7.7
METHYLENE CHLORIDE	3.2
1,1,2,2-TETRACHLOROETHANE	2.4
TETRACHLOROETHENE	1.1

WCC-16VS

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

WCC-12

PARAMETER	CONCENTRATION
NOT SAMPLED	

MI-7

PARAMETER	CONCENTRATION
MTBE	93

CPS-1

PARAMETER	CONCENTRATION
TOLUENE	1800
CHLOROBENZENE	810
BENZENE	64
1,2,4-TRICHLOROBENZENE	31
METHYLENE CHLORIDE	21
1,2-DICHLOROETHANE	14
VINYL CHLORIDE	5.8
1,1,2,2-TETRACHLOROETHANE	4.0 U
1,1,2-TRICHLOROETHANE	4.0 U
1,1-DICHLOROETHENE	4.0 U
TRICHLOROETHENE	4.0 U
TETRACHLOROETHENE	4.0 U

WE-2RB

PARAMETER	CONCENTRATION
CHLOROBENZENE	390
1,2,4-TRICHLOROBENZENE	300
1,4-DICHLOROBENZENE	85
1,2-DICHLOROETHANE	54
BENZENE	27
1,1,2,2-TETRACHLOROETHANE	11
METHYLENE CHLORIDE	9.1
TRICHLOROETHENE	8.0
VINYL CHLORIDE	3.3
TETRACHLOROETHENE	2.9

WCC-3M

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

PARAMETER	MCL – UG/L	GWSL – UG/L
METHYLENE CHLORIDE	3	53
VINYL CHLORIDE	2	1
1,1-DICHLOROETHENE	2	1
1,1-DICHLOROETHANE	50	–
1,2-DICHLOROETHENE (TOTAL)	(70-100)	–
1,2-DICHLOROETHANE	2	2
TRICHLOROETHENE	1	1
BENZENE	1	15
1,1,2-TRICHLOROETHANE	3	5
TETRACHLOROETHENE	1	1
1,1,2,2-TETRACHLOROETHANE	1	4
CHLOROBENZENE	50	770
1,2-DICHLOROBENZENE	600	–
1,4-DICHLOROBENZENE	75	75
1,2,4-TRICHLOROBENZENE	9	320
METHYL-T-BUTYL ETHER (MTBE)	70	
TOLUENE	1000	24000

MCL = MAXIMUM CONTAMINANT LEVEL

CONCENTRATIONS ARE IN UG/L

VALUES DETECTED OVER THE GSWL ARE BOLDED AND UNDERLINED.

MACTEC
200 AMERICAN METRO BLVD, SUITE 113
HAMILTON, NEW JERSEY 08619
609-936-0700

CLIENT

CIBA SPECIALITY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

FIGURE 2
GROUND WATER SAMPLING RESULTS AND EXTENT OF THE IMPACT AREA ABOVE MCL's
CPS ON-SITE VAPOR INTRUSION INVESTIGATION WORK PLAN

PROJ. NO. 3480070242-01
DWG. NO.
REV. 0

P:\ACTIVE PROJECTS\CIBA\FIGURE 3 AND 4.DWG, DATE: 05/12/2009 03:11:09PM Layout: FIGURE 2 strudwin

APPENDIX B

PHOTO LOG

Photo 1: Sample IA-01, located in southern warehouse portion of the building

Photo 2: Sample IA-02, located in northern warehouse portion of the building

Photo 3: Sample IA-03 and duplicate located in northern office portion of building

Photo 4: Sample IA-04, located in southern laboratory portion of the building

Photo 5: Stainless steel double screened vapor sampling implants.

Photo 6: Construction of a permanent vapor sampling probe with vapor sampling implement, sand pack, and bentonite seal already in place.

Photo 7: Collecting a duplicate sample through a 'y' splitter at sample location SG-03

APPENDIX C

LABORATORY ANALYTICAL DATA
SOIL GAS AND INDOOR AIR SAMPLES – SEPTEMBER 2009

New Jersey ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

11/18/09

Technical Report for

Mactec

CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Accutest Job Number: JA28238

Sampling Dates: 09/16/09 - 09/17/09

Report to:

Mactec

EMJACKSON@mactec.com

ATTN: Emily Jackson

Total number of pages in report: **908**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

David N. Speis
VP Ops, Laboratory Director

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Client Service contact: Marty Vitanza 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, PA, RI, SC, TN, VA, WV

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Test results relate only to samples analyzed.

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Sample Summary

Mactec

Job No: JA28238

CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JA28238-1	09/16/09	09:41	EJ	09/17/09	AIR	Air	IA-01
JA28238-2	09/16/09	09:43	EJ	09/17/09	AIR	Air	IA-02
JA28238-3	09/16/09	09:45	EJ	09/17/09	AIR	Air	IA-03
JA28238-4	09/16/09	09:46	EJ	09/17/09	AIR	Air	IA-03 DUP
JA28238-5	09/16/09	09:58	EJ	09/17/09	AIR	Air	IA-04
JA28238-6	09/16/09	10:00	EJ	09/17/09	AIR	Air	IA-BG-05
JA28238-7	09/16/09	10:05	EJ	09/17/09	AIR	Air	IA-BG-06
JA28238-8	09/16/09	10:10	EJ	09/17/09	AIR	Air	IA-BG-07
JA28238-9	09/17/09	10:47	EJ	09/17/09	AIR	Air	SG-01
JA28238-10	09/17/09	11:40	EJ	09/17/09	AIR	Air	SG-02
JA28238-11	09/17/09	13:15	EJ	09/17/09	AIR	Air	SG-03
JA28238-12	09/17/09	13:15	EJ	09/17/09	AIR	Air	SG-03 DUP
JA28238-13	09/17/09	11:15	EJ	09/17/09	AIR	Air	SG-04

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Mactec	**Job No**	JA28238
Site:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ	**Report Date**	10/16/2009 3:08:47 P

On 09/17/2009, 13 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories. Samples were intact and properly preserved, unless noted below. An Accutest Job Number of JA28238 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method TO-15

Matrix: AIR **Batch ID:** V2W1083

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JA28271-5DUP were used as the QC samples indicated.
- Blank Spike Recovery(s) for Tetrahydrofuran are outside control limits. High percent recoveries and no associated positive found in the QC batch.

Matrix: AIR **Batch ID:** V2W1084

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JA28598-2DUP were used as the QC samples indicated.
- RPD(s) for Duplicate for trans-1,2-Dichloroethylene are outside control limits for sample JA28598-2DUP. High RPD due to low concentration of hit

Matrix: AIR **Batch ID:** V2W1086

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JA28739-1DUP were used as the QC samples indicated.
- Sample(s) JA28238-7 have compounds reported with "E" qualifiers indicating estimated value exceeding calibration range.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

Sample Results

Report of Analysis

Accutest LabLink@530732 16:23 18-Nov-2009

Report of Analysis

Client Sample ID: IA-01
Lab Sample ID: JA28238-1 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A101 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25726.D	1	09/29/09	YMH	n/a	n/a	V2W1083
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	7.3	0.20	0.039	ppbv		17	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.29	0.20	0.021	ppbv		0.93	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.60	0.20	0.047	ppbv		1.2	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: IA-01
Lab Sample ID: JA28238-1 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A101 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	11.9	0.50	0.077	ppbv		22.4	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.15	0.20	0.019	ppbv	J	0.65	0.87	ug/m3
141-78-6	88	Ethyl Acetate	0.78	0.20	0.051	ppbv		2.8	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	0.18	0.20	0.022	ppbv	J	1.4	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	0.22	0.20	0.026	ppbv		0.90	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	0.95	0.20	0.019	ppbv		3.3	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	84.94	Methylene chloride	0.45	0.20	0.025	ppbv		1.6	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.47	0.20	0.039	ppbv		1.4	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	1.1	0.20	0.022	ppbv		4.0	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.34	0.20	0.021	ppbv		1.7	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.32	0.20	0.020	ppbv		1.5	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	0.89	0.20	0.018	ppbv		3.4	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.73	0.20	0.021	ppbv		4.1	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.52	0.20	0.045	ppbv		2.3	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.18	0.20	0.023	ppbv	J	0.78	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.70	0.20	0.023	ppbv		3.0	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID:	IA-02		
Lab Sample ID:	JA28238-2	**Date Sampled:**	09/16/09
Matrix:	AIR - Air Summa ID: A195	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25727.D	1	09/29/09	YMH	n/a	n/a	V2W1083
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	13.2	0.20	0.039	ppbv		31.4	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.36	0.20	0.021	ppbv		1.2	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	1.7	0.20	0.047	ppbv		3.5	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: IA-02
Lab Sample ID: JA28238-2 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A195 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	7.5	0.50	0.077	ppbv		14	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.19	0.20	0.019	ppbv	J	0.83	0.87	ug/m3
141-78-6	88	Ethyl Acetate	2.3	0.20	0.051	ppbv		8.3	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	0.28	0.20	0.022	ppbv		2.1	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	0.25	0.20	0.026	ppbv		1.0	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	0.80	0.20	0.019	ppbv		2.8	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	0.52	0.20	0.035	ppbv		1.3	0.49	ug/m3
75-09-2	84.94	Methylene chloride	0.35	0.20	0.025	ppbv		1.2	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	1.4	0.20	0.039	ppbv		4.1	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	0.68	0.20	0.022	ppbv		2.5	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.44	0.20	0.021	ppbv		2.2	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	0.12	0.20	0.026	ppbv	J	0.59	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.35	0.20	0.020	ppbv		1.6	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.11	0.040	0.021	ppbv		0.75	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	1.1	0.20	0.018	ppbv		4.1	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.33	0.20	0.021	ppbv		1.9	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.69	0.20	0.045	ppbv		3.0	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.24	0.20	0.023	ppbv		1.0	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.93	0.20	0.023	ppbv		4.0	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	90%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest LabLink@530732 16:23 18-Nov-2009

Report of Analysis

Client Sample ID: IA-03
Lab Sample ID: JA28238-3 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A332 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25728.D	1	09/29/09	YMH	n/a	n/a	V2W1083
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	5.4	0.20	0.039	ppbv		13	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.24	0.20	0.021	ppbv		0.77	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.70	0.20	0.047	ppbv		1.4	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: IA-03
Lab Sample ID: JA28238-3 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A332 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	6.1	0.50	0.077	ppbv		11	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.12	0.20	0.019	ppbv	J	0.52	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	0.17	0.20	0.026	ppbv	J	0.70	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	0.42	0.20	0.019	ppbv		1.5	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	84.94	Methylene chloride	0.37	0.20	0.025	ppbv		1.3	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.40	0.20	0.039	ppbv		1.2	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.24	0.20	0.021	ppbv		1.2	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.18	0.20	0.020	ppbv	J	0.84	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	0.76	0.20	0.018	ppbv		2.9	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.44	0.20	0.021	ppbv		2.5	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.39	0.20	0.045	ppbv		1.7	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.14	0.20	0.023	ppbv	J	0.61	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.53	0.20	0.023	ppbv		2.3	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	84%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: IA-03 DUP
Lab Sample ID: JA28238-4 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A193 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25747.D	1	09/29/09	YMH	n/a	n/a	V2W1084
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	14.1	0.20	0.039	ppbv		33.5	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.25	0.20	0.021	ppbv		0.80	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	0.68	0.20	0.034	ppbv		2.1	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.93	0.20	0.047	ppbv		1.9	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	0.12	0.20	0.022	ppbv	J	0.75	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: IA-03 DUP
Lab Sample ID: JA28238-4 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A193 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	7.8	0.50	0.077	ppbv		15	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.11	0.20	0.019	ppbv	J	0.48	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	0.12	0.20	0.022	ppbv	J	0.92	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	0.39	0.20	0.019	ppbv		1.4	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	84.94	Methylene chloride	0.41	0.20	0.025	ppbv		1.4	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	1.1	0.20	0.039	ppbv		3.2	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	0.33	0.20	0.022	ppbv		1.2	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.28	0.20	0.021	ppbv		1.4	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.23	0.20	0.020	ppbv		1.1	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.11	0.040	0.021	ppbv		0.75	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	0.21	0.20	0.032	ppbv		0.62	0.59	ug/m3
108-88-3	92.14	Toluene	0.65	0.20	0.018	ppbv		2.4	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.73	0.20	0.021	ppbv		4.1	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.41	0.20	0.045	ppbv		1.8	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.16	0.20	0.023	ppbv	J	0.69	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.57	0.20	0.023	ppbv		2.5	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	81%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID:	IA-04		
Lab Sample ID:	JA28238-5	**Date Sampled:**	09/16/09
Matrix:	AIR - Air Summa ID: A882	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25730.D	1	09/29/09	YMH	n/a	n/a	V2W1083
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	10.9	0.20	0.039	ppbv		25.9	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.36	0.20	0.021	ppbv		1.2	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.59	0.20	0.047	ppbv		1.2	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: IA-04
Lab Sample ID: JA28238-5 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A882 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	8.0	0.50	0.077	ppbv		15	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.22	0.20	0.019	ppbv		0.96	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	0.11	0.20	0.043	ppbv	J	0.54	0.98	ug/m3
76-13-1	187.4	Freon 113	0.13	0.20	0.022	ppbv	J	1.0	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	0.23	0.20	0.026	ppbv		0.94	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	0.70	0.20	0.019	ppbv		2.5	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	84.94	Methylene chloride	0.18	0.20	0.025	ppbv	J	0.63	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	1.2	0.20	0.039	ppbv		3.5	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	0.57	0.20	0.022	ppbv		2.1	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.53	0.20	0.021	ppbv		2.6	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	0.14	0.20	0.026	ppbv	J	0.69	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.35	0.20	0.020	ppbv		1.6	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.070	0.040	0.021	ppbv		0.47	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	1.2	0.20	0.018	ppbv		4.5	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.27	0.20	0.021	ppbv		1.5	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.80	0.20	0.045	ppbv		3.5	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.28	0.20	0.023	ppbv		1.2	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	1.1	0.20	0.023	ppbv		4.8	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest LabLink@530732 16:23 18-Nov-2009

Report of Analysis

Client Sample ID: IA-BG-05
Lab Sample ID: JA28238-6 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A169 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25731.D	1	09/29/09	YMH	n/a	n/a	V2W1083
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	7.1	0.20	0.039	ppbv		17	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.24	0.20	0.021	ppbv		0.77	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.58	0.20	0.047	ppbv		1.2	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: IA-BG-05
Lab Sample ID: JA28238-6 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A169 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	4.0	0.50	0.077	ppbv		7.5	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	0.12	0.20	0.019	ppbv	J	0.52	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	0.16	0.20	0.026	ppbv	J	0.66	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	0.42	0.20	0.019	ppbv		1.5	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.45	0.20	0.039	ppbv		1.3	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	0.29	0.20	0.022	ppbv		1.0	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.48	0.20	0.021	ppbv		2.4	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	0.12	0.20	0.026	ppbv	J	0.59	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	0.23	0.20	0.020	ppbv		1.1	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.080	0.040	0.021	ppbv		0.54	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	0.69	0.20	0.018	ppbv		2.6	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.27	0.20	0.021	ppbv		1.5	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.45	0.20	0.045	ppbv		2.0	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.16	0.20	0.023	ppbv	J	0.69	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.61	0.20	0.023	ppbv		2.6	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
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Report of Analysis

Client Sample ID: IA-BG-06
Lab Sample ID: JA28238-7 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A225 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25787.D	1	10/05/09	YMH	n/a	n/a	V2W1086
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	8.5	0.20	0.039	ppbv		20	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	0.15	0.20	0.021	ppbv	J	0.48	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	1.0	0.20	0.047	ppbv		2.1	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: IA-BG-06
Lab Sample ID: JA28238-7 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A225 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	48.8	0.50	0.077	ppbv	E	92.0	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.20	0.019	ppbv		ND	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	0.34	0.20	0.022	ppbv		2.6	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	ND	0.20	0.019	ppbv		ND	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	2.2	0.20	0.035	ppbv		5.4	0.49	ug/m3
75-09-2	84.94	Methylene chloride	0.57	0.20	0.025	ppbv		2.0	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.72	0.20	0.039	ppbv		2.1	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	0.12	0.20	0.045	ppbv	J	0.49	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	0.23	0.20	0.021	ppbv		1.1	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.20	0.020	ppbv		ND	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.050	0.040	0.021	ppbv		0.34	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	0.36	0.20	0.018	ppbv		1.4	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	1.1	0.20	0.021	ppbv		6.2	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	0.26	0.20	0.045	ppbv		1.1	0.87	ug/m3
95-47-6	106.2	o-Xylene	0.11	0.20	0.023	ppbv	J	0.48	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	0.37	0.20	0.023	ppbv		1.6	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Accutest LabLink@530732 16:23 18-Nov-2009

Report of Analysis

Client Sample ID: IA-BG-07
Lab Sample ID: JA28238-8 **Date Sampled:** 09/16/09
Matrix: AIR - Air Summa ID: A745 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25788.D	1	10/05/09	YMH	n/a	n/a	V2W1086
Run #2							

	Initial Volume
Run #1	400 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	5.1	0.20	0.039	ppbv		12	0.48	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	78.11	Benzene	ND	0.20	0.021	ppbv		ND	0.64	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	252.8	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	94.94	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	106.9	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	64.52	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	119.4	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	50.49	Chloromethane	0.51	0.20	0.047	ppbv		1.1	0.41	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	IA-BG-07		
Lab Sample ID:	JA28238-8	**Date Sampled:**	09/16/09
Matrix:	AIR - Air Summa ID: A745	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	1.7	0.50	0.077	ppbv		3.2	0.94	ug/m3
100-41-4	106.2	Ethylbenzene	ND	0.20	0.019	ppbv		ND	0.87	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	120.2	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3
76-13-1	187.4	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	170.9	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	100.2	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	86.17	Hexane	ND	0.20	0.019	ppbv		ND	0.70	ug/m3
591-78-6	100	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	72.11	Methyl ethyl ketone	0.22	0.20	0.039	ppbv		0.65	0.59	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	42	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	104.1	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	ND	0.20	0.021	ppbv		ND	0.98	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.20	0.020	ppbv		ND	0.93	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	165.8	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	92.14	Toluene	0.13	0.20	0.018	ppbv	J	0.49	0.75	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.24	0.20	0.021	ppbv		1.3	1.1	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	106.2	m,p-Xylene	ND	0.20	0.045	ppbv		ND	0.87	ug/m3
95-47-6	106.2	o-Xylene	ND	0.20	0.023	ppbv		ND	0.87	ug/m3
1330-20-7	106.2	Xylenes (total)	ND	0.20	0.023	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	93%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: SG-01
Lab Sample ID: JA28238-9 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A502 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25789.D	1	10/05/09	YMH	n/a	n/a	V2W1086
Run #2							

	Initial Volume
Run #1	50.0 ml
Run #2	

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	9.4	1.6	0.31	ppbv		22	3.8	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	1.6	0.29	ppbv		ND	3.5	ug/m3
71-43-2	78.11	Benzene	6.3	1.6	0.17	ppbv		20	5.1	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	1.6	0.22	ppbv		ND	11	ug/m3
75-25-2	252.8	Bromoform	ND	1.6	0.18	ppbv		ND	17	ug/m3
74-83-9	94.94	Bromomethane	ND	1.6	0.19	ppbv		ND	6.2	ug/m3
593-60-2	106.9	Bromoethene	ND	1.6	0.15	ppbv		ND	7.0	ug/m3
100-44-7	126	Benzyl Chloride	ND	1.6	0.27	ppbv		ND	8.2	ug/m3
75-15-0	76.14	Carbon disulfide	ND	1.6	0.27	ppbv		ND	5.0	ug/m3
108-90-7	112.6	Chlorobenzene	ND	1.6	0.21	ppbv		ND	7.4	ug/m3
75-00-3	64.52	Chloroethane	ND	1.6	0.32	ppbv		ND	4.2	ug/m3
67-66-3	119.4	Chloroform	6.1	1.6	0.22	ppbv		30	7.8	ug/m3
74-87-3	50.49	Chloromethane	ND	1.6	0.38	ppbv		ND	3.3	ug/m3
107-05-1	76.53	3-Chloropropene	ND	1.6	0.25	ppbv		ND	5.0	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	1.6	0.17	ppbv		ND	8.3	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	1.6	0.18	ppbv		ND	10	ug/m3
110-82-7	84.16	Cyclohexane	ND	1.6	0.49	ppbv		ND	5.5	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	1.6	0.26	ppbv		ND	6.5	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	1.6	0.35	ppbv		ND	6.3	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	1.6	0.16	ppbv		ND	12	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	1.6	0.29	ppbv		ND	6.5	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	1.6	0.23	ppbv		ND	7.4	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	1.6	0.50	ppbv		ND	5.8	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	1.6	0.19	ppbv		ND	7.9	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	1.6	0.28	ppbv		ND	14	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	1.6	0.28	ppbv		ND	6.3	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	1.6	0.23	ppbv		ND	6.3	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	1.6	0.15	ppbv		ND	7.3	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	1.6	0.25	ppbv		ND	9.6	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	1.6	0.30	ppbv		ND	9.6	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	1.6	0.26	ppbv		ND	9.6	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	1.6	0.13	ppbv		ND	7.3	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-01		
Lab Sample ID:	JA28238-9	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A502	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	10.6	4.0	0.61	ppbv		20.0	7.5	ug/m3
100-41-4	106.2	Ethylbenzene	16.8	1.6	0.15	ppbv		73.0	6.9	ug/m3
141-78-6	88	Ethyl Acetate	ND	1.6	0.41	ppbv		ND	5.8	ug/m3
622-96-8	120.2	4-Ethyltoluene	5.9	1.6	0.35	ppbv		29	7.9	ug/m3
76-13-1	187.4	Freon 113	ND	1.6	0.18	ppbv		ND	12	ug/m3
76-14-2	170.9	Freon 114	ND	1.6	0.18	ppbv		ND	11	ug/m3
142-82-5	100.2	Heptane	2.0	1.6	0.20	ppbv		8.2	6.6	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	1.6	0.34	ppbv		ND	17	ug/m3
110-54-3	86.17	Hexane	2.9	1.6	0.15	ppbv		10	5.6	ug/m3
591-78-6	100	2-Hexanone	1.7	1.6	0.24	ppbv		7.0	6.5	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	1.6	0.28	ppbv		ND	3.9	ug/m3
75-09-2	84.94	Methylene chloride	ND	1.6	0.20	ppbv		ND	5.6	ug/m3
78-93-3	72.11	Methyl ethyl ketone	5.4	1.6	0.31	ppbv		16	4.7	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	1.6	0.36	ppbv		ND	6.6	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	1.6	0.18	ppbv		ND	5.8	ug/m3
115-07-1	42	Propylene	ND	4.0	0.49	ppbv		ND	6.9	ug/m3
100-42-5	104.1	Styrene	ND	1.6	0.15	ppbv		ND	6.8	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	1.6	0.20	ppbv		ND	8.7	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	1.6	0.18	ppbv		ND	11	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	1.6	0.17	ppbv		ND	8.7	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	1.6	0.52	ppbv		ND	12	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	14.4	1.6	0.17	ppbv		70.8	7.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	3.3	1.6	0.20	ppbv		16	7.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	2.0	1.6	0.16	ppbv		9.3	7.5	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	1.6	0.18	ppbv		ND	4.9	ug/m3
127-18-4	165.8	Tetrachloroethylene	138	0.32	0.17	ppbv		936	2.2	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	1.6	0.25	ppbv		ND	4.7	ug/m3
108-88-3	92.14	Toluene	275	1.6	0.14	ppbv		1040	6.0	ug/m3
79-01-6	131.4	Trichloroethylene	0.52	0.32	0.15	ppbv		2.8	1.7	ug/m3
75-69-4	137.4	Trichlorofluoromethane	ND	1.6	0.17	ppbv		ND	9.0	ug/m3
75-01-4	62.5	Vinyl chloride	ND	1.6	0.18	ppbv		ND	4.1	ug/m3
108-05-4	86	Vinyl Acetate	ND	1.6	0.36	ppbv		ND	5.6	ug/m3
	106.2	m,p-Xylene	68.6	1.6	0.36	ppbv		298	6.9	ug/m3
95-47-6	106.2	o-Xylene	17.0	1.6	0.19	ppbv		73.8	6.9	ug/m3
1330-20-7	106.2	Xylenes (total)	85.5	1.6	0.19	ppbv		371	6.9	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%		65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: SG-02
Lab Sample ID: JA28238-10 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A400,A425 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25790.D	1.53	10/05/09	YMH	n/a	n/a	V2W1086
Run #2	2W25799.D	43	10/05/09	YMH	n/a	n/a	V2W1086

	Initial Volume
Run #1	50.0 ml
Run #2	200 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	39.3	2.4	0.48	ppbv		93.4	5.7	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	2.4	0.44	ppbv		ND	5.3	ug/m3
71-43-2	78.11	Benzene	29.4	2.4	0.26	ppbv		93.9	7.7	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	2.4	0.34	ppbv		ND	16	ug/m3
75-25-2	252.8	Bromoform	ND	2.4	0.27	ppbv		ND	25	ug/m3
74-83-9	94.94	Bromomethane	ND	2.4	0.29	ppbv		ND	9.3	ug/m3
593-60-2	106.9	Bromoethene	ND	2.4	0.22	ppbv		ND	10	ug/m3
100-44-7	126	Benzyl Chloride	ND	2.4	0.41	ppbv		ND	12	ug/m3
75-15-0	76.14	Carbon disulfide	25.0	2.4	0.41	ppbv		77.9	7.5	ug/m3
108-90-7	112.6	Chlorobenzene	ND	2.4	0.32	ppbv		ND	11	ug/m3
75-00-3	64.52	Chloroethane	ND	2.4	0.49	ppbv		ND	6.3	ug/m3
67-66-3	119.4	Chloroform	41.4	2.4	0.34	ppbv		202	12	ug/m3
74-87-3	50.49	Chloromethane	ND	2.4	0.57	ppbv		ND	5.0	ug/m3
107-05-1	76.53	3-Chloropropene	ND	2.4	0.38	ppbv		ND	7.5	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	2.4	0.27	ppbv		ND	12	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	2.4	0.27	ppbv		ND	15	ug/m3
110-82-7	84.16	Cyclohexane	ND	2.4	0.75	ppbv		ND	8.3	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	2.4	0.40	ppbv		ND	9.7	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	2.4	0.54	ppbv		ND	9.5	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	2.4	0.25	ppbv		ND	18	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	2.4	0.44	ppbv		ND	9.7	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	2.4	0.35	ppbv		ND	11	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	2.4	0.77	ppbv		ND	8.6	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	2.4	0.29	ppbv		ND	12	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	2.4	0.42	ppbv		ND	20	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	2.4	0.43	ppbv		ND	9.5	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	2.4	0.35	ppbv		ND	9.5	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	2.4	0.23	ppbv		ND	11	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	2.4	0.39	ppbv		ND	14	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	2.4	0.46	ppbv		ND	14	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	2.4	0.39	ppbv		ND	14	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	2.4	0.20	ppbv		ND	11	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-02		
Lab Sample ID:	JA28238-10	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A400,A425	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	22.9	6.1	0.94	ppbv		43.1	11	ug/m3
100-41-4	106.2	Ethylbenzene	50.9	2.4	0.24	ppbv		221	10	ug/m3
141-78-6	88	Ethyl Acetate	ND	2.4	0.63	ppbv		ND	8.6	ug/m3
622-96-8	120.2	4-Ethyltoluene	13.6	2.4	0.53	ppbv		66.9	12	ug/m3
76-13-1	187.4	Freon 113	ND	2.4	0.27	ppbv		ND	18	ug/m3
76-14-2	170.9	Freon 114	ND	2.4	0.27	ppbv		ND	17	ug/m3
142-82-5	100.2	Heptane	11.6	2.4	0.31	ppbv		47.5	9.8	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	2.4	0.53	ppbv		ND	26	ug/m3
110-54-3	86.17	Hexane	11.7	2.4	0.24	ppbv		41.2	8.5	ug/m3
591-78-6	100	2-Hexanone	7.1	2.4	0.37	ppbv		29	9.8	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	2.4	0.42	ppbv		ND	5.9	ug/m3
75-09-2	84.94	Methylene chloride	ND	2.4	0.31	ppbv		ND	8.3	ug/m3
78-93-3	72.11	Methyl ethyl ketone	29.8	2.4	0.48	ppbv		87.9	7.1	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	2.6	2.4	0.55	ppbv		11	9.8	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	2.4	0.27	ppbv		ND	8.7	ug/m3
115-07-1	42	Propylene	ND	6.1	0.75	ppbv		ND	10	ug/m3
100-42-5	104.1	Styrene	ND	2.4	0.23	ppbv		ND	10	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	2.4	0.30	ppbv		ND	13	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	2.4	0.28	ppbv		ND	16	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	2.4	0.26	ppbv		ND	13	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	2.4	0.80	ppbv		ND	18	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	30.9	2.4	0.26	ppbv		152	12	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	7.1	2.4	0.31	ppbv		35	12	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	5.2	2.4	0.25	ppbv		24	11	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	2.4	0.28	ppbv		ND	7.3	ug/m3
127-18-4	165.8	Tetrachloroethylene	15.4	0.49	0.25	ppbv		104	3.3	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	2.4	0.39	ppbv		ND	7.1	ug/m3
108-88-3	92.14	Toluene	702 [a]	17	1.5	ppbv		2650 [a]	64	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.49	0.23	ppbv		ND	2.6	ug/m3
75-69-4	137.4	Trichlorofluoromethane	ND	2.4	0.26	ppbv		ND	13	ug/m3
75-01-4	62.5	Vinyl chloride	ND	2.4	0.28	ppbv		ND	6.1	ug/m3
108-05-4	86	Vinyl Acetate	ND	2.4	0.56	ppbv		ND	8.4	ug/m3
	106.2	m,p-Xylene	185	2.4	0.55	ppbv		804	10	ug/m3
95-47-6	106.2	o-Xylene	42.6	2.4	0.29	ppbv		185	10	ug/m3
1330-20-7	106.2	Xylenes (total)	227	2.4	0.29	ppbv		986	10	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	102%	101%	65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-02				
Lab Sample ID:	JA28238-10			**Date Sampled:**	09/17/09
Matrix:	AIR - Air	Summa ID:	A400,A425	**Date Received:**	09/17/09
Method:	TO-15			**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ				

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: SG-03
Lab Sample ID: JA28238-11 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A594 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25791.D	1	10/05/09	YMH	n/a	n/a	V2W1086
Run #2	2W25800.D	1	10/05/09	YMH	n/a	n/a	V2W1086

	Initial Volume
Run #1	100 ml
Run #2	40.0 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	16.7	0.80	0.16	ppbv		39.7	1.9	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.80	0.14	ppbv		ND	1.8	ug/m3
71-43-2	78.11	Benzene	4.5	0.80	0.085	ppbv		14	2.6	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.80	0.11	ppbv		ND	5.4	ug/m3
75-25-2	252.8	Bromoform	ND	0.80	0.088	ppbv		ND	8.3	ug/m3
74-83-9	94.94	Bromomethane	ND	0.80	0.096	ppbv		ND	3.1	ug/m3
593-60-2	106.9	Bromoethene	ND	0.80	0.073	ppbv		ND	3.5	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.80	0.13	ppbv		ND	4.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.80	0.13	ppbv		ND	2.5	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.80	0.10	ppbv		ND	3.7	ug/m3
75-00-3	64.52	Chloroethane	ND	0.80	0.16	ppbv		ND	2.1	ug/m3
67-66-3	119.4	Chloroform	6.9	0.80	0.11	ppbv		34	3.9	ug/m3
74-87-3	50.49	Chloromethane	ND	0.80	0.19	ppbv		ND	1.7	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.80	0.12	ppbv		ND	2.5	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.80	0.087	ppbv		ND	4.1	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.80	0.088	ppbv		ND	5.0	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.80	0.24	ppbv		ND	2.8	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.80	0.13	ppbv		ND	3.2	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.80	0.18	ppbv		ND	3.2	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.80	0.082	ppbv		ND	6.1	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.80	0.11	ppbv		ND	3.7	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.80	0.25	ppbv		ND	2.9	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.80	0.095	ppbv		ND	4.0	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.80	0.14	ppbv		ND	6.8	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.80	0.11	ppbv		ND	3.2	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.80	0.076	ppbv		ND	3.6	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.80	0.15	ppbv		ND	4.8	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.80	0.064	ppbv		ND	3.6	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-03		
Lab Sample ID:	JA28238-11	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A594	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	12.3	2.0	0.31	ppbv		23.2	3.8	ug/m3
100-41-4	106.2	Ethylbenzene	9.7	0.80	0.077	ppbv		42	3.5	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.80	0.21	ppbv		ND	2.9	ug/m3
622-96-8	120.2	4-Ethyltoluene	3.8	0.80	0.17	ppbv		19	3.9	ug/m3
76-13-1	187.4	Freon 113	ND	0.80	0.088	ppbv		ND	6.1	ug/m3
76-14-2	170.9	Freon 114	ND	0.80	0.088	ppbv		ND	5.6	ug/m3
142-82-5	100.2	Heptane	1.4	0.80	0.10	ppbv		5.7	3.3	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.80	0.17	ppbv		ND	8.5	ug/m3
110-54-3	86.17	Hexane	2.0	0.80	0.077	ppbv		7.0	2.8	ug/m3
591-78-6	100	2-Hexanone	1.3	0.80	0.12	ppbv		5.3	3.3	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.80	0.14	ppbv		ND	2.0	ug/m3
75-09-2	84.94	Methylene chloride	0.84	0.80	0.10	ppbv		2.9	2.8	ug/m3
78-93-3	72.11	Methyl ethyl ketone	6.1	0.80	0.16	ppbv		18	2.4	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.80	0.18	ppbv		ND	3.3	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.80	0.089	ppbv		ND	2.9	ug/m3
115-07-1	42	Propylene	ND	2.0	0.25	ppbv		ND	3.4	ug/m3
100-42-5	104.1	Styrene	ND	0.80	0.074	ppbv		ND	3.4	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.80	0.098	ppbv		ND	4.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.80	0.091	ppbv		ND	5.5	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.80	0.085	ppbv		ND	4.4	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.80	0.26	ppbv		ND	5.9	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	8.8	0.80	0.086	ppbv		43	3.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	1.8	0.80	0.10	ppbv		8.8	3.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.80	0.081	ppbv		ND	3.7	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.80	0.092	ppbv		ND	2.4	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.22	0.16	0.083	ppbv		1.5	1.1	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.80	0.13	ppbv		ND	2.4	ug/m3
108-88-3	92.14	Toluene	191 [a]	2.0	0.18	ppbv		720 [a]	7.5	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.16	0.074	ppbv		ND	0.86	ug/m3
75-69-4	137.4	Trichlorofluoromethane	ND	0.80	0.085	ppbv		ND	4.5	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.80	0.092	ppbv		ND	2.0	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.80	0.18	ppbv		ND	2.8	ug/m3
	106.2	m,p-Xylene	41.0	0.80	0.18	ppbv		178	3.5	ug/m3
95-47-6	106.2	o-Xylene	9.3	0.80	0.094	ppbv		40	3.5	ug/m3
1330-20-7	106.2	Xylenes (total)	50.3	0.80	0.094	ppbv		218	3.5	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	99%	103%	65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-03		
Lab Sample ID:	JA28238-11	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A594	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

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Report of Analysis

Client Sample ID: SG-03 DUP
Lab Sample ID: JA28238-12 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A422 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25792.D	1.48	10/05/09	YMH	n/a	n/a	V2W1086
Run #2	2W25801.D	1.48	10/06/09	YMH	n/a	n/a	V2W1086

	Initial Volume
Run #1	148 ml
Run #2	50.0 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	16.0	0.80	0.16	ppbv		38.0	1.9	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.80	0.14	ppbv		ND	1.8	ug/m3
71-43-2	78.11	Benzene	6.0	0.80	0.085	ppbv		19	2.6	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.80	0.11	ppbv		ND	5.4	ug/m3
75-25-2	252.8	Bromoform	ND	0.80	0.088	ppbv		ND	8.3	ug/m3
74-83-9	94.94	Bromomethane	ND	0.80	0.096	ppbv		ND	3.1	ug/m3
593-60-2	106.9	Bromoethene	ND	0.80	0.073	ppbv		ND	3.5	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.80	0.13	ppbv		ND	4.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.80	0.13	ppbv		ND	2.5	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.80	0.10	ppbv		ND	3.7	ug/m3
75-00-3	64.52	Chloroethane	ND	0.80	0.16	ppbv		ND	2.1	ug/m3
67-66-3	119.4	Chloroform	4.3	0.80	0.11	ppbv		21	3.9	ug/m3
74-87-3	50.49	Chloromethane	ND	0.80	0.19	ppbv		ND	1.7	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.80	0.12	ppbv		ND	2.5	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.80	0.087	ppbv		ND	4.1	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.80	0.088	ppbv		ND	5.0	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.80	0.24	ppbv		ND	2.8	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.80	0.13	ppbv		ND	3.2	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.80	0.18	ppbv		ND	3.2	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.80	0.082	ppbv		ND	6.1	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.80	0.11	ppbv		ND	3.7	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.80	0.25	ppbv		ND	2.9	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.80	0.095	ppbv		ND	4.0	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.80	0.14	ppbv		ND	6.8	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.80	0.11	ppbv		ND	3.2	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.80	0.076	ppbv		ND	3.6	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.80	0.15	ppbv		ND	4.8	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.80	0.064	ppbv		ND	3.6	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: SG-03 DUP
Lab Sample ID: JA28238-12 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A422 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	19.3	2.0	0.31	ppbv		36.4	3.8	ug/m3
100-41-4	106.2	Ethylbenzene	16.0	0.80	0.077	ppbv		69.5	3.5	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.80	0.21	ppbv		ND	2.9	ug/m3
622-96-8	120.2	4-Ethyltoluene	7.1	0.80	0.17	ppbv		35	3.9	ug/m3
76-13-1	187.4	Freon 113	ND	0.80	0.088	ppbv		ND	6.1	ug/m3
76-14-2	170.9	Freon 114	ND	0.80	0.088	ppbv		ND	5.6	ug/m3
142-82-5	100.2	Heptane	1.8	0.80	0.10	ppbv		7.4	3.3	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.80	0.17	ppbv		ND	8.5	ug/m3
110-54-3	86.17	Hexane	2.5	0.80	0.077	ppbv		8.8	2.8	ug/m3
591-78-6	100	2-Hexanone	1.5	0.80	0.12	ppbv		6.1	3.3	ug/m3
67-63-0	60.1	Isopropyl Alcohol	ND	0.80	0.14	ppbv		ND	2.0	ug/m3
75-09-2	84.94	Methylene chloride	0.92	0.80	0.10	ppbv		3.2	2.8	ug/m3
78-93-3	72.11	Methyl ethyl ketone	7.0	0.80	0.16	ppbv		21	2.4	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.80	0.18	ppbv		ND	3.3	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.80	0.089	ppbv		ND	2.9	ug/m3
115-07-1	42	Propylene	ND	2.0	0.25	ppbv		ND	3.4	ug/m3
100-42-5	104.1	Styrene	ND	0.80	0.074	ppbv		ND	3.4	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.80	0.098	ppbv		ND	4.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.80	0.091	ppbv		ND	5.5	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.80	0.085	ppbv		ND	4.4	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.80	0.26	ppbv		ND	5.9	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	15.5	0.80	0.086	ppbv		76.2	3.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	3.3	0.80	0.10	ppbv		16	3.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.80	0.081	ppbv		ND	3.7	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.80	0.092	ppbv		ND	2.4	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.34	0.16	0.083	ppbv		2.3	1.1	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.80	0.13	ppbv		ND	2.4	ug/m3
108-88-3	92.14	Toluene	269 [a]	2.4	0.21	ppbv		1010 [a]	9.0	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.16	0.074	ppbv		ND	0.86	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.58	0.80	0.085	ppbv	J	3.3	4.5	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.80	0.092	ppbv		ND	2.0	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.80	0.18	ppbv		ND	2.8	ug/m3
	106.2	m,p-Xylene	68.1	0.80	0.18	ppbv		296	3.5	ug/m3
95-47-6	106.2	o-Xylene	15.7	0.80	0.094	ppbv		68.2	3.5	ug/m3
1330-20-7	106.2	Xylenes (total)	83.7	0.80	0.094	ppbv		364	3.5	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%	97%	65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-03 DUP			
Lab Sample ID:	JA28238-12		**Date Sampled:**	09/17/09
Matrix:	AIR - Air	Summa ID: A422	**Date Received:**	09/17/09
Method:	TO-15		**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ			

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest LabLink@530732 16:23 18-Nov-2009

Report of Analysis

Client Sample ID: SG-04
Lab Sample ID: JA28238-13 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A730 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2W25793.D	1	10/05/09	YMH	n/a	n/a	V2W1086
Run #2	2W25802.D	1	10/06/09	YMH	n/a	n/a	V2W1086

	Initial Volume
Run #1	100 ml
Run #2	40.0 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	78.5	0.80	0.16	ppbv		186	1.9	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.80	0.14	ppbv		ND	1.8	ug/m3
71-43-2	78.11	Benzene	5.0	0.80	0.085	ppbv		16	2.6	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.80	0.11	ppbv		ND	5.4	ug/m3
75-25-2	252.8	Bromoform	ND	0.80	0.088	ppbv		ND	8.3	ug/m3
74-83-9	94.94	Bromomethane	ND	0.80	0.096	ppbv		ND	3.1	ug/m3
593-60-2	106.9	Bromoethene	ND	0.80	0.073	ppbv		ND	3.5	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.80	0.13	ppbv		ND	4.1	ug/m3
75-15-0	76.14	Carbon disulfide	6.3	0.80	0.13	ppbv		20	2.5	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.80	0.10	ppbv		ND	3.7	ug/m3
75-00-3	64.52	Chloroethane	ND	0.80	0.16	ppbv		ND	2.1	ug/m3
67-66-3	119.4	Chloroform	42.9	0.80	0.11	ppbv		209	3.9	ug/m3
74-87-3	50.49	Chloromethane	ND	0.80	0.19	ppbv		ND	1.7	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.80	0.12	ppbv		ND	2.5	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.80	0.087	ppbv		ND	4.1	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.80	0.088	ppbv		ND	5.0	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.80	0.24	ppbv		ND	2.8	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.80	0.13	ppbv		ND	3.2	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.80	0.18	ppbv		ND	3.2	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.80	0.082	ppbv		ND	6.1	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.80	0.11	ppbv		ND	3.7	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.80	0.25	ppbv		ND	2.9	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.80	0.095	ppbv		ND	4.0	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.80	0.14	ppbv		ND	6.8	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.80	0.11	ppbv		ND	3.2	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.80	0.076	ppbv		ND	3.6	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.80	0.15	ppbv		ND	4.8	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.80	0.064	ppbv		ND	3.6	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-04		
Lab Sample ID:	JA28238-13	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A730	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	23.9	2.0	0.31	ppbv		45.0	3.8	ug/m3
100-41-4	106.2	Ethylbenzene	14.9	0.80	0.077	ppbv		64.7	3.5	ug/m3
141-78-6	88	Ethyl Acetate	6.6	0.80	0.21	ppbv		24	2.9	ug/m3
622-96-8	120.2	4-Ethyltoluene	5.3	0.80	0.17	ppbv		26	3.9	ug/m3
76-13-1	187.4	Freon 113	ND	0.80	0.088	ppbv		ND	6.1	ug/m3
76-14-2	170.9	Freon 114	ND	0.80	0.088	ppbv		ND	5.6	ug/m3
142-82-5	100.2	Heptane	1.6	0.80	0.10	ppbv		6.6	3.3	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.80	0.17	ppbv		ND	8.5	ug/m3
110-54-3	86.17	Hexane	1.6	0.80	0.077	ppbv		5.6	2.8	ug/m3
591-78-6	100	2-Hexanone	2.6	0.80	0.12	ppbv		11	3.3	ug/m3
67-63-0	60.1	Isopropyl Alcohol	4.4	0.80	0.14	ppbv		11	2.0	ug/m3
75-09-2	84.94	Methylene chloride	0.90	0.80	0.10	ppbv		3.1	2.8	ug/m3
78-93-3	72.11	Methyl ethyl ketone	19.5	0.80	0.16	ppbv		57.5	2.4	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	1.7	0.80	0.18	ppbv		7.0	3.3	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	1.1	0.80	0.089	ppbv		4.0	2.9	ug/m3
115-07-1	42	Propylene	11.1	2.0	0.25	ppbv		19.1	3.4	ug/m3
100-42-5	104.1	Styrene	0.49	0.80	0.074	ppbv	J	2.1	3.4	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.80	0.098	ppbv		ND	4.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.80	0.091	ppbv		ND	5.5	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.80	0.085	ppbv		ND	4.4	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.80	0.26	ppbv		ND	5.9	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	11.9	0.80	0.086	ppbv		58.5	3.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	2.7	0.80	0.10	ppbv		13	3.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.80	0.081	ppbv		ND	3.7	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	1.8	0.80	0.092	ppbv		5.5	2.4	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.46	0.16	0.083	ppbv		3.1	1.1	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.80	0.13	ppbv		ND	2.4	ug/m3
108-88-3	92.14	Toluene	179 [a]	2.0	0.18	ppbv		675 [a]	7.5	ug/m3
79-01-6	131.4	Trichloroethylene	0.21	0.16	0.074	ppbv		1.1	0.86	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.60	0.80	0.085	ppbv	J	3.4	4.5	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.80	0.092	ppbv		ND	2.0	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.80	0.18	ppbv		ND	2.8	ug/m3
	106.2	m,p-Xylene	59.9	0.80	0.18	ppbv		260	3.5	ug/m3
95-47-6	106.2	o-Xylene	14.7	0.80	0.094	ppbv		63.9	3.5	ug/m3
1330-20-7	106.2	Xylenes (total)	74.6	0.80	0.094	ppbv		324	3.5	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	107%	104%	65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-04		
Lab Sample ID:	JA28238-13	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A730	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Summa Canister and Flow Controller Log
- Sample Tracking Chronicle
- Internal Chain of Custody
- 2009 MDL Study - Method: TO-15

ACCUTEST Laboratories
www.accutest.com

AIR

CHAIN OF CUSTODY
Air Sampling Field Data Sheet

2235 US Highway 130, Dayton, NJ 08810
Tel: 732.329.0200 Fax: 732.329.3499

FED-EX Tracking #:
Bottle Order Control #: MV-9/10/2009-3
Lab Quote #:
Lab Job #: JA28238

PAGE 1 OF 2

Client / Reporting Information

Company Name: MACTEC
Address: 200 American Metro Blvd, Suite 113
City: Hamilton State: NJ Zip: 08619
Project Contact: Emily Jackson E-mail: EMJACKSON@MACTEC.COM
Phone #: 609.936.0700 Fax #: 609.689.2838
Sampler(s) Name(s): Emily Jackson

Project Name: CRS/Madison Superfund Site
Street: Waterworks Rd
City: Old Bridge State: NJ
Project #:
Client Purchase Order #:

Weather Parameters

Temperature (Fahrenheit)
Start: Maximum:
Stop: Minimum:

Atmoshpheric Pressure (inches of Hg)
Start: Maximum:
Stop: Minimum:

Other weather comment:

Requested Analysis

Lab Sample #	Field ID / Point of Collection	Air Type: Indoor (I) Soil Vap (SV) Ambient(A)	Sampling Equipment Info: Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Start Sampling Information: Date	Time (24 hr clock)	Canister Pressure (*Hg)	Interior Temp (F)	Sampler Init.	Stop Sampling Information: Date	Time (24 hr clock)	Canister Pressure (*Hg)	Interior Temp (F)	Sampler Init.
-1	1A-01	I	A101	6L	FC-080	9/16/09	9:57	31			9/16/09	9:41	6		
-2	1A-02	I	A195		FC051		10:05	30				9:43 ~~10:05~~	5		
-3	1A-03	I	A332		FC088		10:10	24				9:45	0		
-4	1A-03 DUP	I	A193		FC13		10:12	31				9:46	6		
-5	1A-04	I	A882		FC064		10:15	28				9:58	5		
-6	1A-BG-05	A	A169		FC399		10:20	31				10:00	8		
-7	1A-BG-06	A	A225		FC300		10:25	30				10:05	6		
-8	1A-BG-07	A	A745	✓	FC086	✓	10:30	29			✓	10:10	1		

Turnaround Time (Business Days)

Standard - 15 Days
10 Day
5 Day
3 Day
2 Day
1 Day
Other

Approved By:
Date:

Data Deliverable Information

All NJDEP TO-15 is mandatory Full T1
Comm A
Comm B
Reduced T2
Full T1
Other:

Comments / Remarks

* regulator on sample 1A-03 may not have been working properly; please check flow rate.

Summa

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date Time:	Received by:	Relinquished by:	Date Time:	Received by:
1	9/11/09	1 9/11/09 715	2	9/11/09	2
3		3	4	9/17/09 15:00	4
5		5	Custody Seal #		

4.1
4

JA28238: Chain of Custody
Page 1 of 4

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www.accutest.com

AIR

CHAIN OF CUSTODY
Air Sampling Field Data Sheet

2235 US Highway 130, Dayton, NJ 08810
Tel: 732.329.0200 Fax: 732.329.3499

FED-EX Tracking #
Lab Quote #
Bottle Order Control # MV-9/10/2009-3
Lab Job # JA28238

Client / Reporting Information

Company Name: Mactec
Address: 200 American Metro Blvd Suite 113
City: Hamilton, State: NJ, Zip: 08619
Project Contact: emily jackson, E-mail: emjackson@mactec.com
Phone #: 609.936.0700, Fax #: 609.936.2838
Sampler(s) Name(s): emily jackson

Project Name: CPS/Madison Superfund Site
Street: 570 Waterworks Rd
City: Old Bridge, State: NJ
Project #
Client Purchase Order #

Weather Parameters

Temperature (Fahrenheit)
Start: Maximum:
Stop: Minimum:

Atmoshpheric Pressure (inches of Hg)
Start: Maximum:
Stop: Minimum:

Other weather comment:

Requested Analysis

Lab Sample #	Field ID / Point of Collection	Air Type: Indoor (I) Soil Vap (SV) Ambient(A)	Sampling Equipment Info: Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Start Sampling Information: Date	Time (24 hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.	Stop Sampling Information: Date	Time (24 hr clock)	Canister Pressure ("Hg)	Interior Temp (F)	Sampler Init.
-9	SG-01	SV	A502	1L	FC110	9/17	10:13	30		EJ	9/17	10:47	1		EJ
-10	SG-02	↓	A400	↓	FC372	↓	10:26	30		↓	↓	11:40	12		↓
-11	SG-03	↓	A594	↓	FC392	↓	12:18	30		↓	↓	13:15	0		↓
-12	SG-03 DUP	↓	A422	↓	FC292	↓	12:18	30		↓	↓	13:15	8		↓
-13	SG-04	↓	A730	↓	FC094	9/17	10:45	29		↓	↓	11:15	1		↓
	~~SG-01DS~~	↓		↓		↓				↓	↓				↓
	~~SG-02DS~~	↓		↓		↓				↓	↓				↓
		↓		↓		↓				↓	↓				↓

Turnaround Time (Business Days)

Standard - 15 Days	
10 Day	
5 Day	
3 Day	
2 Day	
1 Day	
Other	

Approved By:
Date:

Data Deliverable Information

All NJDEP TO-15 is mandatory Full T1

Comm A	
Comm B	
Reduced T2	
Full T1	
Other:	

Comments / Remarks

* water was observed in tubing @ SG-02 so regulator was shut off ~~before~~ early. ~~canister was started.~~ EJ

Sample Custody Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date Time:	Received by:	Relinquished by:	Date Time:	Received by:
1 Roy Mavromi	9/11/09	1	2		2
3		3	4	9/17/09 15:00	4 PM
5		5	Custody Seal #		

4.1
4

JA28238: Chain of Custody
Page 2 of 4

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JA28238 **Client:** MACTEC-NJ **Immediate Client Services Action Required:** Yes

Date / Time Received: 9/17/2009 1500 **Delivery Method:** Client **Client Service Action Required at Login:** No

Project: CPS/MADISON **No. Coolers:** **Airbill #'s:**

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☐		☑	3. COC Present:	☑		☐
2. Custody Seals Intact:	☐		☑	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☐	
2. Trip Blank listed on COC:	☐	☐	
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☐	☑	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☐
5. Filtering instructions clear:	☐	☐	☐

Comments

NO ANALYSES ON COC

-10 SUMMA HAS SOME WATER IN IT - SEE COMMENTS SECTION ON COC

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

Sample Receipt Summary - Problem Resolution

Accutest Job Number: JA28238

CSR: Marty Vitanza **Response Date** 9/22/2009

Response: VTO15STD, per quote DK 7/2009-346

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

JA28238: Chain of Custody
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Summa Canister and Flow Controller Log

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ
Received: 09/17/09

SUMMA CANISTERS

Shipping							Receiving						
Summa ID	L	Vac " Hg	Date Out	By	SCC Batch	SCC FileID	Sample Number	Date In	By	Vac " Hg	Pres psig	Final psig	Dil Fact
A101	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-1	09/18/09	FZ	4			1
A195	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-2	09/18/09	FZ	4.5			1
A332	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-3	09/18/09	FZ	0			1
A193	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-4	09/18/09	FZ	4.5			1
A882	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-5	09/18/09	FZ	4.5			1
A169	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-6	09/18/09	FZ	5.5			1
A225	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-7	09/18/09	FZ	5			1
A745	6	29.4	09/11/09	FZ	CP3597	2W25425.D	JA28238-8	09/18/09	FZ	0			1
A502	1	29.4	09/11/09	FZ	CP3598	2W25482.D	JA28238-9	09/18/09	FZ	0			1
A400	1	29.4	09/11/09	FZ	CP3598	2W25482.D	JA28238-10	09/18/09	FZ	8.5		1.3	1.52
A594	1	29.4	09/11/09	FZ	CP3592	2W25443.D	JA28238-11	09/18/09	FZ	0			1
A422	1	29.4	09/11/09	FZ	CP3592	2W25443.D	JA28238-12	09/18/09	FZ	8		1.2	1.48
A730	1	29.4	09/11/09	FZ	CP3592	2W25443.D	JA28238-13	09/18/09	FZ	0			1

FLOW CONTROLLERS

Shipping					Receiving		
Flow Crtl ID	Date Out	By	cc/ min	Time hrs.	Date In	By	cc/ min
FC051	09/11/09	FZ	3.4	24	09/18/09	FZ	3.5
FC064	09/11/09	FZ	3.4	24	09/18/09	FZ	3.6
FC080	09/11/09	FZ	3.4	24	09/18/09	FZ	3.3
FC086	09/11/09	FZ	3.4	24	09/18/09	FZ	3.5
FC088	09/11/09	FZ	3.4	24	09/18/09	FZ	3.4
FC094	09/11/09	FZ	26.7	.5	09/18/09	FZ	27.1
FC110	09/11/09	FZ	26.7	.5	09/18/09	FZ	26.9
FC113	09/11/09	FZ	3.4	24	09/18/09	FZ	3.4
FC292	09/16/09	WMC	13.6	1	09/18/09	FZ	12.9
FC300	09/11/09	FZ	3.4	24	09/18/09	FZ	3.4
FC349	09/11/09	FZ	3.4	24	09/18/09	FZ	3.6
FC372	09/11/09	FZ	26.7	.5	09/18/09	FZ	26.3
FC392	09/16/09	WMC	13.6	1	09/18/09	FZ	12.7

Accutest Bottle Order(s):
MV-9/10/2009-3
TE-9/16/2009-5

Prep Date	Room Temp(F)	Bar Pres "Hg
09/11/09	70	29.92

Internal Sample Tracking Chronicle

Mactec

Job No: JA28238

CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JA28238-1 IA-01	Collected: 16-SEP-09 09:41 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-1	TO-15	29-SEP-09 01:14	YMH			VTO15STD
JA28238-2 IA-02	Collected: 16-SEP-09 09:43 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-2	TO-15	29-SEP-09 01:59	YMH			VTO15STD
JA28238-3 IA-03	Collected: 16-SEP-09 09:45 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-3	TO-15	29-SEP-09 03:27	YMH			VTO15STD
JA28238-4 IA-03 DUP	Collected: 16-SEP-09 09:46 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-4	TO-15	29-SEP-09 20:32	YMH			VTO15STD
JA28238-5 IA-04	Collected: 16-SEP-09 09:58 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-5	TO-15	29-SEP-09 04:56	YMH			VTO15STD
JA28238-6 IA-BG-05	Collected: 16-SEP-09 10:00 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-6	TO-15	29-SEP-09 05:40	YMH			VTO15STD
JA28238-7 IA-BG-06	Collected: 16-SEP-09 10:05 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-7	TO-15	05-OCT-09 12:30	YMH			VTO15STD
JA28238-8 IA-BG-07	Collected: 16-SEP-09 10:10 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-8	TO-15	05-OCT-09 13:13	YMH			VTO15STD

Internal Sample Tracking Chronicle

Mactec

Job No: JA28238

CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JA28238-9 SG-01	Collected: 17-SEP-09 10:47 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-9	TO-15	05-OCT-09 13:57	YMH			VTO15STD
JA28238-10 SG-02	Collected: 17-SEP-09 11:40 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-10	TO-15	05-OCT-09 14:41	YMH			VTO15STD
JA28238-10	TO-15	05-OCT-09 22:47	YMH			VTO15STD
JA28238-11 SG-03	Collected: 17-SEP-09 13:15 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-11	TO-15	05-OCT-09 15:25	YMH			VTO15STD
JA28238-11	TO-15	05-OCT-09 23:31	YMH			VTO15STD
JA28238-12 SG-03 DUP	Collected: 17-SEP-09 13:15 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-12	TO-15	05-OCT-09 16:09	YMH			VTO15STD
JA28238-12	TO-15	06-OCT-09 00:16	YMH			VTO15STD
JA28238-13 SG-04	Collected: 17-SEP-09 11:15 By: EJ		Received: 17-SEP-09 By: MPC			
JA28238-13	TO-15	05-OCT-09 16:52	YMH			VTO15STD
JA28238-13	TO-15	06-OCT-09 01:00	YMH			VTO15STD

Accutest Internal Chain of Custody

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ
Received: 09/17/09

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JA28238-1.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-1.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-2.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-2.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-3.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-3.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-4.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-4.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-5.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-5.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-6.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-6.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-7.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-7.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-8.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-8.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-9.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-9.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-10.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-10.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-11.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-11.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-12.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-12.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28238-13.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28238-13.1	Dave Hunkele		11/11/09 05:10	Disposed

Accutest Laboratories Annual Method Detection Limit Determination
Dayton, NJ Facility

Method: TO-15 (VTO14/15)
Instrument(s): GCMS2W, GCMS3W, GCMSW
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2009

Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	Replicate Spikes R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
Acetone	7-Jan-09	0.2	0.19	0.22	0.22	0.23	0.22	0.23	0.23	0.22	109.66	0.013	0.039	5.10
1,3-Butadiene	6-Jan-09	0.1	0.13	0.11	0.13	0.11	0.11	0.10	0.13	0.12	117.04	0.012	0.036	2.76
Benzene	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.14	0.12	0.13	126.30	0.007	0.021	4.71
Bromodichloromethane	8-Jan-09	0.1	0.12	0.14	0.13	0.13	0.13	0.15	0.14	0.13	133.02	0.009	0.028	3.56
Bromoform	8-Jan-09	0.1	0.09	0.11	0.09	0.09	0.09	0.11	0.10	0.10	97.32	0.007	0.022	4.55
Bromomethane	6-Jan-09	0.1	0.11	0.11	0.12	0.09	0.11	0.10	0.11	0.11	106.15	0.008	0.024	4.15
Bromoethene	8-Jan-09	0.1	0.13	0.12	0.12	0.12	0.12	0.14	0.12	0.12	124.56	0.006	0.018	5.47
n-Butane	8-Jan-09	0.1	0.17	0.17	0.18	0.15	0.18	0.20	0.18	0.18	177.33	0.014	0.044	2.26
Benzyl Chloride	20-Jan-09	0.1	0.08	0.07	0.07	0.09	0.08	0.07	0.06	0.07	74.18	0.011	0.033	3.01
Carbon disulfide	8-Jan-09	0.1	0.14	0.14	0.14	0.14	0.13	0.16	0.15	0.14	140.90	0.011	0.034	2.98
Chlorobenzene	8-Jan-09	0.1	0.12	0.13	0.12	0.11	0.11	0.14	0.12	0.12	121.55	0.008	0.026	3.87
Chlorodifluoromethane	20-Jan-09	0.2	0.26	0.29	0.30	0.28	0.28	0.28	0.27	0.28	140.08	0.015	0.046	4.31
Chloroethane	7-Jan-09	0.2	0.20	0.18	0.21	0.19	0.21	0.21	0.22	0.20	101.48	0.013	0.040	4.99
Chloroform	8-Jan-09	0.1	0.13	0.14	0.13	0.13	0.13	0.15	0.14	0.14	135.26	0.009	0.028	3.56
Chloromethane	7-Jan-09	0.2	0.23	0.26	0.24	0.23	0.23	0.22	0.22	0.23	115.86	0.015	0.047	4.26
3-Chloropropene	8-Jan-09	0.2	0.22	0.22	0.21	0.20	0.20	0.19	0.21	0.21	103.25	0.010	0.031	6.52
2-Chlorotoluene	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.10	0.09	0.09	0.10	99.70	0.007	0.022	4.59
Carbon tetrachloride	6-Jan-09	0.1	0.11	0.11	0.13	0.12	0.13	0.12	0.12	0.12	121.79	0.007	0.022	4.55
Cyclohexane	20-Jan-09	0.1	0.16	0.13	0.13	0.16	0.12	0.12	0.11	0.13	129.77	0.020	0.061	1.63
1,1-Dichloroethane	20-Jan-09	0.2	0.21	0.23	0.24	0.22	0.22	0.21	0.22	0.22	110.06	0.010	0.032	6.19
1,1-Dichloroethylene	6-Jan-09	0.1	0.11	0.10	0.12	0.13	0.14	0.14	0.13	0.13	126.21	0.014	0.044	2.27
1,2-Dibromoethane	8-Jan-09	0.1	0.11	0.11	0.10	0.10	0.10	0.12	0.11	0.11	106.48	0.007	0.021	4.87
1,2-Dichloroethane	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.15	0.13	0.13	126.69	0.012	0.036	2.77
1,2-Dichloropropane	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.14	0.13	0.13	126.40	0.009	0.029	3.50
1,4-Dioxane	20-Jan-09	0.2	0.14	0.18	0.18	0.14	0.14	0.14	0.13	0.15	75.37	0.020	0.063	3.19
Dichlorodifluoromethane	6-Jan-09	0.1	0.12	0.11	0.13	0.12	0.13	0.13	0.13	0.12	124.25	0.008	0.024	4.20
Dibromochloromethane	20-Jan-09	0.2	0.25	0.26	0.28	0.26	0.25	0.26	0.25	0.26	129.69	0.011	0.034	5.81
trans-1,2-Dichloroethylene	7-Jan-09	0.2	0.21	0.22	0.20	0.19	0.20	0.20	0.18	0.20	99.11	0.011	0.035	5.72
cis-1,2-Dichloroethylene	6-Jan-09	0.1	0.12	0.10	0.11	0.10	0.11	0.09	0.11	0.10	104.78	0.009	0.028	3.52
cis-1,3-Dichloropropene	8-Jan-09	0.1	0.10	0.10	0.09	0.10	0.09	0.11	0.09	0.10	96.39	0.006	0.019	5.24
m-Dichlorobenzene	20-Jan-09	0.1	0.12	0.11	0.11	0.12	0.12	0.10	0.09	0.11	107.77	0.010	0.032	3.14
o-Dichlorobenzene	20-Jan-09	0.1	0.11	0.09	0.11	0.11	0.11	0.09	0.08	0.10	100.64	0.012	0.037	2.68
p-Dichlorobenzene	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.10	0.10	0.08	0.10	100.00	0.010	0.032	3.11
trans-1,3-Dichloropropene	6-Jan-09	0.1	0.09	0.09	0.10	0.08	0.09	0.09	0.08	0.09	89.90	0.005	0.016	6.21
2,3-Dimethylpentane	20-Jan-09	0.1	0.13	0.11	0.11	0.11	0.11	0.11	0.11	0.11	111.62	0.007	0.023	4.42
2,4-Dimethylpentane	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.10	0.10	0.09	0.10	101.62	0.006	0.017	5.76
Ethanol	20-Jan-09	0.1	0.15	0.13	0.12	0.18	0.12	0.11	0.13	0.13	134.32	0.024	0.077	1.31

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

Method: TO-15 (VTO14/15)
Instrument(s): GCMS2W, GCMS3W, GCMSW
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2009

Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	Replicate Spikes R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
Ethylbenzene	6-Jan-09	0.1	0.09	0.09	0.09	0.08	0.09	0.08	0.08	0.09	85.93	0.006	0.019	5.17
Ethyl Acetate	20-Jan-09	0.2	0.13	0.15	0.17	0.12	0.15	0.14	0.14	0.14	71.35	0.016	0.051	3.90
4-Ethyltoluene	20-Jan-09	0.1	0.09	0.08	0.08	0.05	0.08	0.05	0.07	0.07	70.12	0.014	0.043	2.31
Freon 113	8-Jan-09	0.1	0.13	0.13	0.13	0.12	0.12	0.14	0.13	0.13	130.43	0.007	0.022	4.57
Freon 114	20-Jan-09	0.2	0.26	0.26	0.28	0.27	0.27	0.26	0.27	0.27	132.89	0.007	0.022	9.15
Freon 123	8-Jan-09	0.1	0.13	0.14	0.13	0.13	0.13	0.15	0.13	0.13	133.73	0.007	0.021	4.81
Freon 152A	20-Jan-09	0.2	0.21	0.24	0.24	0.23	0.23	0.23	0.23	0.23	114.44	0.010	0.031	6.40
Heptane	8-Jan-09	0.1	0.12	0.12	0.11	0.12	0.12	0.14	0.12	0.12	120.32	0.008	0.026	3.92
Hexachlorobutadiene	20-Jan-09	0.1	0.12	0.11	0.12	0.14	0.14	0.12	0.11	0.12	122.75	0.014	0.043	2.33
Hexane	8-Jan-09	0.1	0.13	0.13	0.12	0.13	0.12	0.14	0.13	0.13	126.98	0.006	0.019	5.18
2-Hexanone	7-Jan-09	0.2	0.16	0.16	0.17	0.16	0.14	0.15	0.17	0.16	78.55	0.010	0.030	6.61
Isopropylbenzene	6-Jan-09	0.1	0.08	0.09	0.09	0.08	0.08	0.07	0.08	0.08	81.53	0.006	0.020	5.03
Isopropyl Alcohol	6-Jan-09	0.1	0.14	0.13	0.16	0.15	0.14	0.12	0.13	0.14	139.12	0.011	0.035	2.89
Methylene chloride	8-Jan-09	0.2	0.28	0.29	0.28	0.27	0.27	0.27	0.29	0.28	139.42	0.008	0.025	8.01
Methyl ethyl ketone	20-Jan-09	0.2	0.16	0.16	0.17	0.14	0.14	0.15	0.14	0.15	76.71	0.012	0.039	5.12
Methyl Isobutyl Ketone	20-Jan-09	0.2	0.17	0.18	0.18	0.16	0.15	0.14	0.15	0.16	80.50	0.014	0.045	4.44
Methyl Tert Butyl Ether	6-Jan-09	0.1	0.09	0.10	0.11	0.10	0.10	0.09	0.09	0.10	98.92	0.007	0.022	4.51
Methylmethacrylate	6-Jan-09	0.1	0.07	0.06	0.08	0.06	0.06	0.06	0.06	0.06	64.63	0.006	0.020	5.11
Nonane	6-Jan-09	0.1	0.10	0.10	0.11	0.09	0.09	0.08	0.10	0.10	96.16	0.008	0.027	3.77
Octane	6-Jan-09	0.1	0.11	0.11	0.12	0.09	0.10	0.10	0.11	0.11	105.49	0.007	0.023	4.37
Pentane	8-Jan-09	0.1	0.16	0.18	0.17	0.16	0.16	0.18	0.18	0.17	170.33	0.009	0.028	3.58
Propylene	8-Jan-09	0.2	0.26	0.31	0.29	0.31	0.31	0.32	0.30	0.30	150.29	0.020	0.061	3.26
Styrene	20-Jan-09	0.1	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.08	80.19	0.006	0.018	5.43
1,1,1-Trichloroethane	8-Jan-09	0.1	0.13	0.13	0.13	0.13	0.13	0.15	0.14	0.13	134.31	0.008	0.025	4.07
1,1,2,2-Tetrachloroethane	8-Jan-09	0.1	0.11	0.12	0.11	0.10	0.11	0.12	0.11	0.11	110.60	0.007	0.023	4.41
1,1,2-Trichloroethane	8-Jan-09	0.1	0.11	0.12	0.11	0.11	0.11	0.13	0.12	0.11	113.67	0.007	0.021	4.72
1,2,4-Trichlorobenzene	20-Jan-09	0.2	0.10	0.12	0.14	0.10	0.09	0.09	0.08	0.10	50.11	0.021	0.065	3.06
1,2,4-Trimethylbenzene	20-Jan-09	0.1	0.08	0.07	0.07	0.08	0.08	0.07	0.06	0.07	73.25	0.007	0.021	4.66
1,3,5-Trimethylbenzene	20-Jan-09	0.1	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.09	87.93	0.008	0.026	3.92
2,2,4-Trimethylpentane	20-Jan-09	0.1	0.13	0.12	0.12	0.12	0.12	0.12	0.11	0.12	121.11	0.006	0.020	4.94
Tertiary Butyl Alcohol	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.11	0.11	0.09	0.11	105.48	0.007	0.023	4.36
Tetrachloroethylene	6-Jan-09	0.1	0.09	0.10	0.11	0.09	0.10	0.09	0.10	0.10	98.59	0.007	0.021	4.80
Tetrahydrofuran	8-Jan-09	0.2	0.20	0.22	0.20	0.20	0.20	0.19	0.19	0.20	99.85	0.010	0.032	6.29
Toluene	20-Jan-09	0.1	0.12	0.11	0.11	0.12	0.11	0.11	0.10	0.11	110.60	0.006	0.018	5.62
Trichloroethylene	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.13	0.12	0.13	125.45	0.006	0.019	5.42
Trichlorofluoromethane	6-Jan-09	0.1	0.13	0.13	0.14	0.13	0.13	0.14	0.14	0.13	133.51	0.007	0.021	4.71
Vinyl chloride	8-Jan-09	0.1	0.14	0.13	0.14	0.13	0.13	0.15	0.14	0.14	137.70	0.007	0.023	4.35
Vinyl Acetate	20-Jan-09	0.2	0.15	0.16	0.18	0.16	0.13	0.16	0.15	0.15	77.08	0.015	0.046	4.38
m,p-Xylene	6-Jan-09	0.2	0.15	0.16	0.17	0.15	0.14	0.13	0.14	0.15	74.69	0.014	0.045	4.42
o-Xylene	6-Jan-09	0.1	0.07	0.08	0.08	0.07	0.08	0.07	0.07	0.07	74.43	0.007	0.023	4.27

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

Method: TO-15 (VTO14/15)
Instrument(s): GCMS2W, GCMS3W, GCMSW
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2009

Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	Replicate Spikes R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
TVHC As Equiv Pentane	7-Jan-09	0.2	0.30	0.32	0.36	0.33	0.28	0.33	0.33	0.32	160.72	0.027	0.085	2.37
TVHC As Equiv Heptane	20-Jan-09	0.2	0.23	0.23	0.22	0.23	0.22	0.24	0.22	0.23	114.19	0.009	0.029	6.96

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Initial Calibration RT/ISTD Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1083-MB	2W25712.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1083-MB	2W25712.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	70%	65-128%

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1083-MB	2W25712.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:**

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1084-MB	2W25738.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-4

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1084-MB	2W25738.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-4

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	70%	65-128%

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1084-MB	2W25738.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:**

JA28238-4

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1086-MB	2W25786.D	1	10/05/09	YMH	n/a	n/a	V2W1086

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-7, JA28238-8, JA28238-9, JA28238-10, JA28238-11, JA28238-12, JA28238-13

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1086-MB	2W25786.D	1	10/05/09	YMH	n/a	n/a	V2W1086

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-7, JA28238-8, JA28238-9, JA28238-10, JA28238-11, JA28238-12, JA28238-13

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	82%	65-128%

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1086-MB	2W25786.D	1	10/05/09	YMH	n/a	n/a	V2W1086

The QC reported here applies to the following samples: **Method:**

JA28238-7, JA28238-8, JA28238-9, JA28238-10, JA28238-11, JA28238-12, JA28238-13

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-MB	2W25422.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-MB	2W25422.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	78%	65-128%

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-MB	2W25422.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:**

V2W1073-SCC

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-MB	2W25475.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-MB	2W25475.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	74%	65-128%

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-MB	2W25475.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:**

V2W1075-SCC

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-MB	3W12870.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

V3W524-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	86%	65-128%

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1083-BS	2W25710.D	1	09/28/09	YMH	n/a	n/a	V2W1083
V2W1083-BSD	2W25711.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	8.9	89	9.3	93	4	70-130/30
106-99-0	1,3-Butadiene	10	11.7	117	12.1	121	3	70-130/30
71-43-2	Benzene	10	10.1	101	10.5	105	4	70-130/30
75-27-4	Bromodichloromethane	10	10.9	109	11.2	112	3	70-130/30
75-25-2	Bromoform	10	9.9	99	10.5	105	6	70-130/30
74-83-9	Bromomethane	10	10.3	103	10.2	102	1	70-130/30
593-60-2	Bromoethene	10	9.7	97	9.5	95	2	70-130/30
100-44-7	Benzyl Chloride	10	12.4	124	12.6	126	2	70-130/30
75-15-0	Carbon disulfide	10	10.2	102	10.5	105	3	70-130/30
108-90-7	Chlorobenzene	10	9.0	90	9.5	95	5	70-130/30
75-00-3	Chloroethane	10	11.1	111	11.1	111	0	70-130/30
67-66-3	Chloroform	10	10.8	108	11.1	111	3	70-130/30
74-87-3	Chloromethane	10	11.7	117	12.1	121	3	70-130/30
107-05-1	3-Chloropropene	10	10.9	109	11.2	112	3	70-130/30
95-49-8	2-Chlorotoluene	10	10.1	101	10.7	107	6	70-130/30
56-23-5	Carbon tetrachloride	10	10.4	104	10.8	108	4	70-130/30
110-82-7	Cyclohexane	10	9.5	95	9.7	97	2	70-130/30
75-34-3	1,1-Dichloroethane	10	11.4	114	11.8	118	3	70-130/30
75-35-4	1,1-Dichloroethylene	10	9.5	95	9.6	96	1	70-130/30
106-93-4	1,2-Dibromoethane	10	9.5	95	10.1	101	6	70-130/30
107-06-2	1,2-Dichloroethane	10	11.4	114	12.0	120	5	70-130/30
78-87-5	1,2-Dichloropropane	10	10.6	106	11.2	112	6	70-130/30
123-91-1	1,4-Dioxane	10	10.3	103	10.5	105	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	10.0	100	10.3	103	3	70-130/30
124-48-1	Dibromochloromethane	10	9.5	95	10.0	100	5	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	9.8	98	10.0	100	2	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	10	100	10.3	103	3	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	10.9	109	11.4	114	4	70-130/30
541-73-1	m-Dichlorobenzene	10	10.9	109	11.3	113	4	70-130/30
95-50-1	o-Dichlorobenzene	10	11.0	110	11.5	115	4	70-130/30
106-46-7	p-Dichlorobenzene	10	10.6	106	11.1	111	5	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	11.0	110	11.7	117	6	70-130/30
64-17-5	Ethanol	10	11.1	111	11.7	117	5	70-130/30
100-41-4	Ethylbenzene	10	9.2	92	9.7	97	5	70-130/30
141-78-6	Ethyl Acetate	10	11.9	119	12.6	126	6	70-130/30
622-96-8	4-Ethyltoluene	10	11.2	112	11.9	119	6	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1083-BS	2W25710.D	1	09/28/09	YMH	n/a	n/a	V2W1083
V2W1083-BSD	2W25711.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.3	93	9.5	95	2	70-130/30
76-14-2	Freon 114	10	10.6	106	10.9	109	3	70-130/30
142-82-5	Heptane	10	12.2	122	12.6	126	3	70-130/30
87-68-3	Hexachlorobutadiene	10	10.4	104	10.3	103	1	70-130/30
110-54-3	Hexane	10	12.2	122	12.5	125	2	70-130/30
591-78-6	2-Hexanone	10	11.1	111	11.3	113	2	70-130/30
67-63-0	Isopropyl Alcohol	10	11.4	114	11.7	117	3	70-130/30
75-09-2	Methylene chloride	10	9.5	95	9.9	99	4	70-130/30
78-93-3	Methyl ethyl ketone	10	11.2	112	11.8	118	5	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	13.0	130	13.1	131* [a]	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	10.8	108	11.5	115	6	70-130/30
115-07-1	Propylene	10	12.6	126	13.0	130	3	70-130/30
100-42-5	Styrene	10	10.1	101	10.7	107	6	70-130/30
71-55-6	1,1,1-Trichloroethane	10	10.6	106	11.0	110	4	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	11.2	112	11.9	119	6	70-130/30
79-00-5	1,1,2-Trichloroethane	10	10.9	109	11.4	114	4	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	10.7	107	10.7	107	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	11.8	118	12.4	124	5	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	10.9	109	11.6	116	6	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	11.7	117	11.9	119	2	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	11.4	114	10.8	108	5	70-130/30
127-18-4	Tetrachloroethylene	10	8.2	82	8.5	85	4	70-130/30
109-99-9	Tetrahydrofuran	10	13.1	131* [a]	14.0	140* [a]	7	70-130/30
108-88-3	Toluene	10	10.2	102	10.7	107	5	70-130/30
79-01-6	Trichloroethylene	10	10.0	100	10.3	103	3	70-130/30
75-69-4	Trichlorofluoromethane	10	9.2	92	9.4	94	2	70-130/30
75-01-4	Vinyl chloride	10	11.6	116	11.9	119	3	70-130/30
108-05-4	Vinyl Acetate	10	10.6	106	11.4	114	7	70-130/30
	m,p-Xylene	20	18.0	90	19.1	96	6	70-130/30
95-47-6	o-Xylene	10	9.4	94	9.9	99	5	70-130/30
1330-20-7	Xylenes (total)	30	27.4	91	29.0	97	6	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	102%	102%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1083-BS	2W25710.D	1	09/28/09	YMH	n/a	n/a	V2W1083
V2W1083-BSD	2W25711.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

(a) High percent recoveries and no associated positive found in the QC batch.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1084-BS	2W25736.D	1	09/29/09	YMH	n/a	n/a	V2W1084
V2W1084-BSD	2W25737.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-4

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	8.8	88	8.9	89	1	70-130/30
106-99-0	1,3-Butadiene	10	12.1	121	11.9	119	2	70-130/30
71-43-2	Benzene	10	10	100	9.9	99	1	70-130/30
75-27-4	Bromodichloromethane	10	10.9	109	10.8	108	1	70-130/30
75-25-2	Bromoform	10	9.2	92	9.1	91	1	70-130/30
74-83-9	Bromomethane	10	9.8	98	9.6	96	2	70-130/30
593-60-2	Bromoethene	10	9.2	92	8.9	89	3	70-130/30
100-44-7	Benzyl Chloride	10	11.4	114	11.1	111	3	70-130/30
75-15-0	Carbon disulfide	10	9.9	99	9.8	98	1	70-130/30
108-90-7	Chlorobenzene	10	8.3	83	8.3	83	0	70-130/30
75-00-3	Chloroethane	10	11.1	111	10.8	108	3	70-130/30
67-66-3	Chloroform	10	10.7	107	10.7	107	0	70-130/30
74-87-3	Chloromethane	10	12.2	122	12.2	122	0	70-130/30
107-05-1	3-Chloropropene	10	10.4	104	10.5	105	1	70-130/30
95-49-8	2-Chlorotoluene	10	9.4	94	9.2	92	2	70-130/30
56-23-5	Carbon tetrachloride	10	10.4	104	10.4	104	0	70-130/30
110-82-7	Cyclohexane	10	9.2	92	9.1	91	1	70-130/30
75-34-3	1,1-Dichloroethane	10	10.9	109	11.1	111	2	70-130/30
75-35-4	1,1-Dichloroethylene	10	9.0	90	9.0	90	0	70-130/30
106-93-4	1,2-Dibromoethane	10	9.0	90	8.9	89	1	70-130/30
107-06-2	1,2-Dichloroethane	10	11.5	115	11.5	115	0	70-130/30
78-87-5	1,2-Dichloropropane	10	10.5	105	10.4	104	1	70-130/30
123-91-1	1,4-Dioxane	10	9.6	96	9.8	98	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	8.2	82	10	100	20	70-130/30
124-48-1	Dibromochloromethane	10	9.0	90	9.0	90	0	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	9.5	95	9.3	93	2	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	9.6	96	9.7	97	1	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	10.9	109	10.7	107	2	70-130/30
541-73-1	m-Dichlorobenzene	10	9.8	98	9.7	97	1	70-130/30
95-50-1	o-Dichlorobenzene	10	10.1	101	9.8	98	3	70-130/30
106-46-7	p-Dichlorobenzene	10	9.6	96	9.3	93	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	11.1	111	10.7	107	4	70-130/30
64-17-5	Ethanol	10	11.7	117	11.7	117	0	70-130/30
100-41-4	Ethylbenzene	10	8.8	88	8.7	87	1	70-130/30
141-78-6	Ethyl Acetate	10	11.6	116	11.4	114	2	70-130/30
622-96-8	4-Ethyltoluene	10	10.3	103	10.3	103	0	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1084-BS	2W25736.D	1	09/29/09	YMH	n/a	n/a	V2W1084
V2W1084-BSD	2W25737.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-4

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	8.8	88	8.8	88	0	70-130/30
76-14-2	Freon 114	10	10.6	106	10.2	102	4	70-130/30
142-82-5	Heptane	10	12.0	120	11.8	118	2	70-130/30
87-68-3	Hexachlorobutadiene	10	9.0	90	8.9	89	1	70-130/30
110-54-3	Hexane	10	11.8	118	11.8	118	0	70-130/30
591-78-6	2-Hexanone	10	10.6	106	10.4	104	2	70-130/30
67-63-0	Isopropyl Alcohol	10	11.6	116	11.6	116	0	70-130/30
75-09-2	Methylene chloride	10	9.2	92	9.4	94	2	70-130/30
78-93-3	Methyl ethyl ketone	10	10.6	106	10.9	109	3	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	12.4	124	12.5	125	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	10.2	102	10.5	105	3	70-130/30
115-07-1	Propylene	10	11.7	117	12.5	125	7	70-130/30
100-42-5	Styrene	10	9.5	95	9.4	94	1	70-130/30
71-55-6	1,1,1-Trichloroethane	10	10.6	106	10.7	107	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	10.5	105	10.4	104	1	70-130/30
79-00-5	1,1,2-Trichloroethane	10	11.0	110	10.7	107	3	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	9.4	94	9.1	91	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	10.8	108	10.7	107	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	10.0	100	10	100	0	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	11.5	115	11.3	113	2	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	10.9	109	10.6	106	3	70-130/30
127-18-4	Tetrachloroethylene	10	7.4	74	7.5	75	1	70-130/30
109-99-9	Tetrahydrofuran	10	12.0	120	12.3	123	2	70-130/30
108-88-3	Toluene	10	10.1	101	9.9	99	2	70-130/30
79-01-6	Trichloroethylene	10	9.8	98	9.7	97	1	70-130/30
75-69-4	Trichlorofluoromethane	10	9.2	92	9.0	90	2	70-130/30
75-01-4	Vinyl chloride	10	11.8	118	11.5	115	3	70-130/30
108-05-4	Vinyl Acetate	10	10.1	101	10.2	102	1	70-130/30
	m,p-Xylene	20	16.9	85	16.8	84	1	70-130/30
95-47-6	o-Xylene	10	8.6	86	8.6	86	0	70-130/30
1330-20-7	Xylenes (total)	30	25.6	85	25.4	85	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	100%	100%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1086-BS	2W25784.D	1	10/05/09	YMH	n/a	n/a	V2W1086
V2W1086-BSD	2W25785.D	1	10/05/09	YMH	n/a	n/a	V2W1086

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-7, JA28238-8, JA28238-9, JA28238-10, JA28238-11, JA28238-12, JA28238-13

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	7.5	75	7.6	76	1	70-130/30
106-99-0	1,3-Butadiene	10	8.9	89	8.5	85	5	70-130/30
71-43-2	Benzene	10	9.4	94	9.4	94	0	70-130/30
75-27-4	Bromodichloromethane	10	11.7	117	11.3	113	3	70-130/30
75-25-2	Bromoform	10	11.7	117	11.4	114	3	70-130/30
74-83-9	Bromomethane	10	9.7	97	9.6	96	1	70-130/30
593-60-2	Bromoethene	10	10.0	100	9.9	99	1	70-130/30
100-44-7	Benzyl Chloride	10	11.4	114	11.1	111	3	70-130/30
75-15-0	Carbon disulfide	10	8.8	88	8.7	87	1	70-130/30
108-90-7	Chlorobenzene	10	9.8	98	9.8	98	0	70-130/30
75-00-3	Chloroethane	10	9.0	90	9.2	92	2	70-130/30
67-66-3	Chloroform	10	10.5	105	10.3	103	2	70-130/30
74-87-3	Chloromethane	10	8.9	89	8.0	80	11	70-130/30
107-05-1	3-Chloropropene	10	9.4	94	9.5	95	1	70-130/30
95-49-8	2-Chlorotoluene	10	11.1	111	11.0	110	1	70-130/30
56-23-5	Carbon tetrachloride	10	11.8	118	11.3	113	4	70-130/30
110-82-7	Cyclohexane	10	9.2	92	9.2	92	0	70-130/30
75-34-3	1,1-Dichloroethane	10	9.7	97	9.6	96	1	70-130/30
75-35-4	1,1-Dichloroethylene	10	8.9	89	8.9	89	0	70-130/30
106-93-4	1,2-Dibromoethane	10	10.6	106	10.5	105	1	70-130/30
107-06-2	1,2-Dichloroethane	10	11.8	118	11.3	113	4	70-130/30
78-87-5	1,2-Dichloropropane	10	9.2	92	9.3	93	1	70-130/30
123-91-1	1,4-Dioxane	10	10.2	102	10	100	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	10.2	102	9.5	95	7	70-130/30
124-48-1	Dibromochloromethane	10	12.0	120	11.6	116	3	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	9.5	95	9.5	95	0	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	9.1	91	9.1	91	0	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	11.3	113	11.1	111	2	70-130/30
541-73-1	m-Dichlorobenzene	10	10.9	109	10.7	107	2	70-130/30
95-50-1	o-Dichlorobenzene	10	10.9	109	10.7	107	2	70-130/30
106-46-7	p-Dichlorobenzene	10	10.6	106	10.4	104	2	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	12.0	120	11.8	118	2	70-130/30
64-17-5	Ethanol	10	7.5	75	7.5	75	0	70-130/30
100-41-4	Ethylbenzene	10	10.4	104	10.3	103	1	70-130/30
141-78-6	Ethyl Acetate	10	8.8	88	8.6	86	2	70-130/30
622-96-8	4-Ethyltoluene	10	11.7	117	11.7	117	0	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1086-BS	2W25784.D	1	10/05/09	YMH	n/a	n/a	V2W1086
V2W1086-BSD	2W25785.D	1	10/05/09	YMH	n/a	n/a	V2W1086

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-7, JA28238-8, JA28238-9, JA28238-10, JA28238-11, JA28238-12, JA28238-13

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	10.1	101	9.8	98	3	70-130/30
76-14-2	Freon 114	10	10.2	102	9.3	93	9	70-130/30
142-82-5	Heptane	10	9.7	97	9.8	98	1	70-130/30
87-68-3	Hexachlorobutadiene	10	8.8	88	8.4	84	5	70-130/30
110-54-3	Hexane	10	9.0	90	8.9	89	1	70-130/30
591-78-6	2-Hexanone	10	9.5	95	9.4	94	1	70-130/30
67-63-0	Isopropyl Alcohol	10	8.8	88	8.6	86	2	70-130/30
75-09-2	Methylene chloride	10	8.6	86	8.5	85	1	70-130/30
78-93-3	Methyl ethyl ketone	10	9.5	95	9.5	95	0	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	10.3	103	10	100	3	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	10.1	101	9.8	98	3	70-130/30
115-07-1	Propylene	10	8.8	88	9.1	91	3	70-130/30
100-42-5	Styrene	10	11.9	119	11.7	117	2	70-130/30
71-55-6	1,1,1-Trichloroethane	10	11.6	116	11.0	110	5	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	9.5	95	9.6	96	1	70-130/30
79-00-5	1,1,2-Trichloroethane	10	10.5	105	10.5	105	0	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	11.6	116	11.2	112	4	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	11.2	112	11.0	110	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	11.0	110	10.8	108	2	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	9.5	95	9.6	96	1	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	10.1	101	9.5	95	6	70-130/30
127-18-4	Tetrachloroethylene	10	10.1	101	10.1	101	0	70-130/30
109-99-9	Tetrahydrofuran	10	8.9	89	8.8	88	1	70-130/30
108-88-3	Toluene	10	10.8	108	10.7	107	1	70-130/30
79-01-6	Trichloroethylene	10	10.3	103	10.1	101	2	70-130/30
75-69-4	Trichlorofluoromethane	10	10.8	108	10.2	102	6	70-130/30
75-01-4	Vinyl chloride	10	8.9	89	8.4	84	6	70-130/30
108-05-4	Vinyl Acetate	10	9.9	99	10.1	101	2	70-130/30
	m,p-Xylene	20	19.9	100	20.0	100	1	70-130/30
95-47-6	o-Xylene	10	10.2	102	10.2	102	0	70-130/30
1330-20-7	Xylenes (total)	30	30.1	100	30.3	101	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	115%	115%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-BS	2W25420.D	1	09/09/09	YMH	n/a	n/a	V2W1073
V2W1073-BSD	2W25421.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	8.7	87	8.9	89	2	70-130/30
106-99-0	1,3-Butadiene	10	9.2	92	9.2	92	0	70-130/30
71-43-2	Benzene	10	9.1	91	9.1	91	0	70-130/30
75-27-4	Bromodichloromethane	10	9.6	96	9.7	97	1	70-130/30
75-25-2	Bromoform	10	10.5	105	11.0	110	5	70-130/30
74-83-9	Bromomethane	10	9.7	97	9.7	97	0	70-130/30
593-60-2	Bromoethene	10	10.0	100	10.1	101	1	70-130/30
100-44-7	Benzyl Chloride	10	9.7	97	10.1	101	4	70-130/30
75-15-0	Carbon disulfide	10	9.1	91	9.1	91	0	70-130/30
108-90-7	Chlorobenzene	10	9.0	90	9.3	93	3	70-130/30
75-00-3	Chloroethane	10	9.8	98	9.7	97	1	70-130/30
67-66-3	Chloroform	10	9.5	95	9.5	95	0	70-130/30
74-87-3	Chloromethane	10	8.6	86	8.7	87	1	70-130/30
107-05-1	3-Chloropropene	10	9.7	97	9.5	95	2	70-130/30
95-49-8	2-Chlorotoluene	10	10.4	104	10.7	107	3	70-130/30
56-23-5	Carbon tetrachloride	10	9.5	95	9.4	94	1	70-130/30
110-82-7	Cyclohexane	10	8.9	89	8.8	88	1	70-130/30
75-34-3	1,1-Dichloroethane	10	9.2	92	9.1	91	1	70-130/30
75-35-4	1,1-Dichloroethylene	10	9.2	92	9.2	92	0	70-130/30
106-93-4	1,2-Dibromoethane	10	9.4	94	9.7	97	3	70-130/30
107-06-2	1,2-Dichloroethane	10	9.4	94	9.2	92	2	70-130/30
78-87-5	1,2-Dichloropropane	10	9.4	94	9.5	95	1	70-130/30
123-91-1	1,4-Dioxane	10	9.2	92	9.0	90	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	10	100	10.6	106	6	70-130/30
124-48-1	Dibromochloromethane	10	9.9	99	10.3	103	4	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	9.4	94	9.4	94	0	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	9.5	95	9.5	95	0	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	9.9	99	9.9	99	0	70-130/30
541-73-1	m-Dichlorobenzene	10	10.3	103	10.9	109	6	70-130/30
95-50-1	o-Dichlorobenzene	10	10.4	104	11.0	110	6	70-130/30
106-46-7	p-Dichlorobenzene	10	10	100	10.3	103	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	9.8	98	9.9	99	1	70-130/30
64-17-5	Ethanol	10	8.6	86	8.5	85	1	70-130/30
100-41-4	Ethylbenzene	10	9.5	95	9.8	98	3	70-130/30
141-78-6	Ethyl Acetate	10	9.1	91	8.9	89	2	70-130/30
622-96-8	4-Ethyltoluene	10	10.7	107	11.0	110	3	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-BS	2W25420.D	1	09/09/09	YMH	n/a	n/a	V2W1073
V2W1073-BSD	2W25421.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.4	94	9.4	94	0	70-130/30
76-14-2	Freon 114	10	9.2	92	9.2	92	0	70-130/30
142-82-5	Heptane	10	8.7	87	8.7	87	0	70-130/30
87-68-3	Hexachlorobutadiene	10	7.7	77	8.1	81	5	70-130/30
110-54-3	Hexane	10	9.1	91	9.0	90	1	70-130/30
591-78-6	2-Hexanone	10	8.1	81	8.3	83	2	70-130/30
67-63-0	Isopropyl Alcohol	10	8.8	88	8.9	89	1	70-130/30
75-09-2	Methylene chloride	10	8.8	88	8.6	86	2	70-130/30
78-93-3	Methyl ethyl ketone	10	9.6	96	9.6	96	0	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	8.7	87	8.6	86	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.3	93	9.4	94	1	70-130/30
115-07-1	Propylene	10	8.3	83	8.2	82	1	70-130/30
100-42-5	Styrene	10	10.6	106	11.0	110	4	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.5	95	9.4	94	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	9.8	98	10.2	102	4	70-130/30
79-00-5	1,1,2-Trichloroethane	10	9.7	97	9.7	97	0	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	7.7	77	8.0	80	4	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	10.7	107	11.2	112	5	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	10.5	105	11.1	111	6	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	8.7	87	8.7	87	0	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	8.7	87	9.2	92	6	70-130/30
127-18-4	Tetrachloroethylene	10	9.2	92	9.5	95	3	70-130/30
109-99-9	Tetrahydrofuran	10	9.1	91	9.1	91	0	70-130/30
108-88-3	Toluene	10	9.9	99	9.9	99	0	70-130/30
79-01-6	Trichloroethylene	10	9.2	92	9.2	92	0	70-130/30
75-69-4	Trichlorofluoromethane	10	9.2	92	9.3	93	1	70-130/30
75-01-4	Vinyl chloride	10	9.3	93	9.3	93	0	70-130/30
108-05-4	Vinyl Acetate	10	9.8	98	9.9	99	1	70-130/30
	m,p-Xylene	20	19.1	96	20.0	100	5	70-130/30
95-47-6	o-Xylene	10	9.7	97	10.2	102	5	70-130/30
1330-20-7	Xylenes (total)	30	28.8	96	30.2	101	5	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	113%	114%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-BS	2W25473.D	1	09/11/09	YMH	n/a	n/a	V2W1075
V2W1075-BSD	2W25474.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	10.0	100	9.6	96	4	70-130/30
106-99-0	1,3-Butadiene	10	10.4	104	10.1	101	3	70-130/30
71-43-2	Benzene	10	10.4	104	10.2	102	2	70-130/30
75-27-4	Bromodichloromethane	10	11.2	112	11.0	110	2	70-130/30
75-25-2	Bromoform	10	11.6	116	11.4	114	2	70-130/30
74-83-9	Bromomethane	10	10.7	107	10.4	104	3	70-130/30
593-60-2	Bromoethene	10	10.9	109	10.6	106	3	70-130/30
100-44-7	Benzyl Chloride	10	10.8	108	10.9	109	1	70-130/30
75-15-0	Carbon disulfide	10	10.1	101	10	100	1	70-130/30
108-90-7	Chlorobenzene	10	10.0	100	10	100	0	70-130/30
75-00-3	Chloroethane	10	11.1	111	10.7	107	4	70-130/30
67-66-3	Chloroform	10	10.6	106	10.4	104	2	70-130/30
74-87-3	Chloromethane	10	9.9	99	9.7	97	2	70-130/30
107-05-1	3-Chloropropene	10	10.6	106	10.4	104	2	70-130/30
95-49-8	2-Chlorotoluene	10	11.5	115	11.3	113	2	70-130/30
56-23-5	Carbon tetrachloride	10	10.5	105	10.3	103	2	70-130/30
110-82-7	Cyclohexane	10	9.9	99	9.8	98	1	70-130/30
75-34-3	1,1-Dichloroethane	10	10.3	103	10.2	102	1	70-130/30
75-35-4	1,1-Dichloroethylene	10	10.0	100	9.9	99	1	70-130/30
106-93-4	1,2-Dibromoethane	10	10.4	104	10.4	104	0	70-130/30
107-06-2	1,2-Dichloroethane	10	10.4	104	10.2	102	2	70-130/30
78-87-5	1,2-Dichloropropane	10	10.9	109	10.7	107	2	70-130/30
123-91-1	1,4-Dioxane	10	9.8	98	9.6	96	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	8.8	88	8.1	81	8	70-130/30
124-48-1	Dibromochloromethane	10	11.0	110	11.1	111	1	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	10.2	102	10.0	100	2	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	10.3	103	10.2	102	1	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	11.3	113	11.1	111	2	70-130/30
541-73-1	m-Dichlorobenzene	10	11.3	113	11.2	112	1	70-130/30
95-50-1	o-Dichlorobenzene	10	11.3	113	11.2	112	1	70-130/30
106-46-7	p-Dichlorobenzene	10	10.8	108	10.7	107	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	11.0	110	10.8	108	2	70-130/30
64-17-5	Ethanol	10	9.6	96	9.2	92	4	70-130/30
100-41-4	Ethylbenzene	10	10.7	107	10.6	106	1	70-130/30
141-78-6	Ethyl Acetate	10	9.6	96	9.3	93	3	70-130/30
622-96-8	4-Ethyltoluene	10	11.8	118	11.8	118	0	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-BS	2W25473.D	1	09/11/09	YMH	n/a	n/a	V2W1075
V2W1075-BSD	2W25474.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.9	99	9.9	99	0	70-130/30
76-14-2	Freon 114	10	10.4	104	10.2	102	2	70-130/30
142-82-5	Heptane	10	10.3	103	10.1	101	2	70-130/30
87-68-3	Hexachlorobutadiene	10	9.4	94	9.7	97	3	70-130/30
110-54-3	Hexane	10	10.1	101	10	100	1	70-130/30
591-78-6	2-Hexanone	10	8.7	87	8.7	87	0	70-130/30
67-63-0	Isopropyl Alcohol	10	9.8	98	9.4	94	4	70-130/30
75-09-2	Methylene chloride	10	9.5	95	9.5	95	0	70-130/30
78-93-3	Methyl ethyl ketone	10	10.1	101	9.8	98	3	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	9.6	96	9.4	94	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.9	99	9.7	97	2	70-130/30
115-07-1	Propylene	10	9.5	95	9.2	92	3	70-130/30
100-42-5	Styrene	10	11.6	116	11.5	115	1	70-130/30
71-55-6	1,1,1-Trichloroethane	10	10.5	105	10.4	104	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	11.2	112	11.0	110	2	70-130/30
79-00-5	1,1,2-Trichloroethane	10	11.0	110	10.8	108	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	9.5	95	9.6	96	1	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	12.0	120	11.9	119	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	11.9	119	11.6	116	3	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	10.3	103	10.1	101	2	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	9.3	93	9.2	92	1	70-130/30
127-18-4	Tetrachloroethylene	10	10.0	100	10	100	0	70-130/30
109-99-9	Tetrahydrofuran	10	9.7	97	9.5	95	2	70-130/30
108-88-3	Toluene	10	11.1	111	10.9	109	2	70-130/30
79-01-6	Trichloroethylene	10	10.5	105	10.3	103	2	70-130/30
75-69-4	Trichlorofluoromethane	10	10.4	104	10.1	101	3	70-130/30
75-01-4	Vinyl chloride	10	10.5	105	10.3	103	2	70-130/30
108-05-4	Vinyl Acetate	10	10.8	108	10.3	103	5	70-130/30
	m,p-Xylene	20	21.4	107	21.3	107	0	70-130/30
95-47-6	o-Xylene	10	10.9	109	10.8	108	1	70-130/30
1330-20-7	Xylenes (total)	30	32.4	108	32.1	107	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	108%	107%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-BS	3W12868.D	1	10/05/09	YMH	n/a	n/a	V3W524
V3W524-BSD	3W12869.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

V3W524-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
108-88-3	Toluene	10	10.8	108	10.9	109	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	104%	102%	65-128%

Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28271-5DUP	2W25722.D	1	09/28/09	YMH	n/a	n/a	V2W1083
JA28271-5	2W25721.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

CAS No.	Compound	JA28271-5 ppbv	Q	DUP ppbv	Q	RPD	Limits
67-64-1	Acetone	509		534		5	27
106-99-0	1,3-Butadiene	ND		ND		nc	20
71-43-2	Benzene	6.2		6.6		6	17
75-27-4	Bromodichloromethane	ND		ND		nc	20
75-25-2	Bromoform	ND		ND		nc	20
74-83-9	Bromomethane	ND		ND		nc	20
593-60-2	Bromoethene	ND		ND		nc	30
100-44-7	Benzyl Chloride	ND		ND		nc	20
75-15-0	Carbon disulfide	ND		ND		nc	11
108-90-7	Chlorobenzene	ND		ND		nc	20
75-00-3	Chloroethane	ND		ND		nc	20
67-66-3	Chloroform	2.7	J	2.9	J	7	12
74-87-3	Chloromethane	ND		ND		nc	22
107-05-1	3-Chloropropene	ND		ND		nc	10
95-49-8	2-Chlorotoluene	11.6		ND		0	20
56-23-5	Carbon tetrachloride	ND		ND		nc	10
110-82-7	Cyclohexane	ND		ND		nc	12
75-34-3	1,1-Dichloroethane	ND		ND		nc	20
75-35-4	1,1-Dichloroethylene	ND		ND		nc	20
106-93-4	1,2-Dibromoethane	ND		ND		nc	20
107-06-2	1,2-Dichloroethane	ND		ND		nc	20
78-87-5	1,2-Dichloropropane	ND		ND		nc	20
123-91-1	1,4-Dioxane	ND		ND		nc	20
75-71-8	Dichlorodifluoromethane	ND		ND		nc	22
124-48-1	Dibromochloromethane	ND		ND		nc	20
156-60-5	trans-1,2-Dichloroethylene	6.1		6.6		8	10
156-59-2	cis-1,2-Dichloroethylene	77.3		82.5		7	10
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	20
541-73-1	m-Dichlorobenzene	ND		ND		nc	20
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	3.6	J	4.1		13	20
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	20
64-17-5	Ethanol	55.2		58.3		5	33
100-41-4	Ethylbenzene	7.3		8.0		9	15
141-78-6	Ethyl Acetate	ND		ND		nc	20
622-96-8	4-Ethyltoluene	ND		ND		nc	13

Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28271-5DUP	2W25722.D	1	09/28/09	YMH	n/a	n/a	V2W1083
JA28271-5	2W25721.D	1	09/28/09	YMH	n/a	n/a	V2W1083

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-1, JA28238-2, JA28238-3, JA28238-5, JA28238-6

CAS No.	Compound	JA28271-5 ppbv	Q	DUP ppbv	Q	RPD	Limits
76-13-1	Freon 113	ND		ND		nc	10
76-14-2	Freon 114	ND		ND		nc	20
142-82-5	Heptane	5.9		6.7		13	20
87-68-3	Hexachlorobutadiene	ND		ND		nc	20
110-54-3	Hexane	10.1		10.2		1	17
591-78-6	2-Hexanone	ND		ND		nc	20
67-63-0	Isopropyl Alcohol	ND		ND		nc	26
75-09-2	Methylene chloride	ND		ND		nc	26
78-93-3	Methyl ethyl ketone	29.2		32.0		9	21
108-10-1	Methyl Isobutyl Ketone	ND		ND		nc	20
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	20
115-07-1	Propylene	41.6		43.6		5	16
100-42-5	Styrene	ND		ND		nc	11
71-55-6	1,1,1-Trichloroethane	4.0		4.2		5	20
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	20
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	20
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	20
95-63-6	1,2,4-Trimethylbenzene	7.3		7.9		8	19
108-67-8	1,3,5-Trimethylbenzene	2.1	J	2.4	J	13	13
540-84-1	2,2,4-Trimethylpentane	2.6	J	2.7	J	4	18
75-65-0	Tertiary Butyl Alcohol	3.5	J	3.4	J	3	21
127-18-4	Tetrachloroethylene	1030	E	1080	E	5	17
109-99-9	Tetrahydrofuran	ND		ND		nc	20
108-88-3	Toluene	45.8		49.6		8	20
79-01-6	Trichloroethylene	46.8		49.3		5	13
75-69-4	Trichlorofluoromethane	42.6		43.9		3	21
75-01-4	Vinyl chloride	ND		ND		nc	20
108-05-4	Vinyl Acetate	ND		ND		nc	20
	m,p-Xylene	26.6		29.0		9	26
95-47-6	o-Xylene	8.6		9.3		8	20
1330-20-7	Xylenes (total)	35.2		38.3		8	26

CAS No.	Surrogate Recoveries	DUP	JA28271-5	Limits
460-00-4	4-Bromofluorobenzene	90%	91%	65-128%

Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28598-2DUP	2W25751.D	1	09/29/09	YMH	n/a	n/a	V2W1084
JA28598-2	2W25750.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-4

CAS No.	Compound	JA28598-2 ppbv	Q	DUP ppbv	Q	RPD	Limits
67-64-1	Acetone	22.0		22.8		4	27
106-99-0	1,3-Butadiene	ND		ND		nc	20
71-43-2	Benzene	10.5		10.9		4	17
75-27-4	Bromodichloromethane	ND		ND		nc	20
75-25-2	Bromoform	ND		ND		nc	20
74-83-9	Bromomethane	ND		ND		nc	20
593-60-2	Bromoethene	ND		ND		nc	30
100-44-7	Benzyl Chloride	ND		ND		nc	20
75-15-0	Carbon disulfide	ND		ND		nc	11
108-90-7	Chlorobenzene	ND		ND		nc	20
75-00-3	Chloroethane	ND		ND		nc	20
67-66-3	Chloroform	ND		ND		nc	12
74-87-3	Chloromethane	ND		ND		nc	22
107-05-1	3-Chloropropene	ND		ND		nc	10
95-49-8	2-Chlorotoluene	ND		ND		nc	20
56-23-5	Carbon tetrachloride	ND		ND		nc	10
110-82-7	Cyclohexane	ND		ND		nc	12
75-34-3	1,1-Dichloroethane	ND		ND		nc	20
75-35-4	1,1-Dichloroethylene	ND		ND		nc	20
106-93-4	1,2-Dibromoethane	ND		ND		nc	20
107-06-2	1,2-Dichloroethane	ND		ND		nc	20
78-87-5	1,2-Dichloropropane	ND		ND		nc	20
123-91-1	1,4-Dioxane	ND		ND		nc	20
75-71-8	Dichlorodifluoromethane	ND		ND		nc	22
124-48-1	Dibromochloromethane	ND		ND		nc	20
156-60-5	trans-1,2-Dichloroethylene	0.49	J	0.43	J	13* [a]	10
156-59-2	cis-1,2-Dichloroethylene	3.1		3.1		0	10
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	20
541-73-1	m-Dichlorobenzene	ND		ND		nc	20
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	20
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	20
64-17-5	Ethanol	33.3		35.3		6	33
100-41-4	Ethylbenzene	0.81		0.83		2	15
141-78-6	Ethyl Acetate	ND		ND		nc	20
622-96-8	4-Ethyltoluene	ND		ND		nc	13

Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28598-2DUP	2W25751.D	1	09/29/09	YMH	n/a	n/a	V2W1084
JA28598-2	2W25750.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-4

CAS No.	Compound	JA28598-2 ppbv	Q	DUP ppbv	Q	RPD	Limits
76-13-1	Freon 113	ND		ND		nc	10
76-14-2	Freon 114	ND		ND		nc	20
142-82-5	Heptane	0.82		0.87		6	20
87-68-3	Hexachlorobutadiene	ND		ND		nc	20
110-54-3	Hexane	ND		ND		nc	17
591-78-6	2-Hexanone	ND		ND		nc	20
67-63-0	Isopropyl Alcohol	5.2		5.6		7	26
75-09-2	Methylene chloride	ND		ND		nc	26
78-93-3	Methyl ethyl ketone	ND		ND		nc	21
108-10-1	Methyl Isobutyl Ketone	ND		ND		nc	20
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	20
115-07-1	Propylene	ND		ND		nc	16
100-42-5	Styrene	ND		ND		nc	11
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	20
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	20
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	20
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	20
95-63-6	1,2,4-Trimethylbenzene	2.5		2.8		11	19
108-67-8	1,3,5-Trimethylbenzene	0.62	J	0.68	J	9	13
540-84-1	2,2,4-Trimethylpentane	ND		ND		nc	18
75-65-0	Tertiary Butyl Alcohol	ND		ND		nc	21
127-18-4	Tetrachloroethylene	0.69		0.71		3	17
109-99-9	Tetrahydrofuran	ND		ND		nc	20
108-88-3	Toluene	1.5		1.6		6	20
79-01-6	Trichloroethylene	1.0		1.0		0	13
75-69-4	Trichlorofluoromethane	ND		ND		nc	21
75-01-4	Vinyl chloride	21.5		23.0		7	20
108-05-4	Vinyl Acetate	ND		ND		nc	20
	m,p-Xylene	3.2		3.3		3	26
95-47-6	o-Xylene	0.91		0.89		2	20
1330-20-7	Xylenes (total)	4.1		4.2		2	26

CAS No.	Surrogate Recoveries	DUP	JA28598-2	Limits
460-00-4	4-Bromofluorobenzene	83%	86%	65-128%

Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28598-2DUP	2W25751.D	1	09/29/09	YMH	n/a	n/a	V2W1084
JA28598-2	2W25750.D	1	09/29/09	YMH	n/a	n/a	V2W1084

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-4

(a) High RPD due to low concentration of hit

Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28739-1DUP	2W25795.D	1	10/05/09	YMH	n/a	n/a	V2W1086
JA28739-1	2W25794.D	1	10/05/09	YMH	n/a	n/a	V2W1086

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-7, JA28238-8, JA28238-9, JA28238-10, JA28238-11, JA28238-12, JA28238-13

CAS No.	Compound	JA28739-1 ppbv	Q	DUP ppbv	Q	RPD	Limits
67-64-1	Acetone	5.1		4.8		6	27
106-99-0	1,3-Butadiene	ND		ND		nc	20
71-43-2	Benzene	ND		ND		nc	17
75-27-4	Bromodichloromethane	ND		ND		nc	20
75-25-2	Bromoform	ND		ND		nc	20
74-83-9	Bromomethane	ND		ND		nc	20
593-60-2	Bromoethene	ND		ND		nc	30
100-44-7	Benzyl Chloride	ND		ND		nc	20
75-15-0	Carbon disulfide	0.67	J	0.65	J	3	11
108-90-7	Chlorobenzene	ND		ND		nc	20
75-00-3	Chloroethane	ND		ND		nc	20
67-66-3	Chloroform	0.78	J	0.75	J	4	12
74-87-3	Chloromethane	ND		ND		nc	22
107-05-1	3-Chloropropene	ND		ND		nc	10
95-49-8	2-Chlorotoluene	ND		ND		nc	20
56-23-5	Carbon tetrachloride	ND		ND		nc	10
110-82-7	Cyclohexane	ND		ND		nc	12
75-34-3	1,1-Dichloroethane	ND		ND		nc	20
75-35-4	1,1-Dichloroethylene	ND		ND		nc	20
106-93-4	1,2-Dibromoethane	ND		ND		nc	20
107-06-2	1,2-Dichloroethane	ND		ND		nc	20
78-87-5	1,2-Dichloropropane	ND		ND		nc	20
123-91-1	1,4-Dioxane	ND		ND		nc	20
75-71-8	Dichlorodifluoromethane	ND		ND		nc	22
124-48-1	Dibromochloromethane	ND		ND		nc	20
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethylene	ND		ND		nc	10
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	20
541-73-1	m-Dichlorobenzene	ND		ND		nc	20
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	2.5		2.6		4	20
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	20
64-17-5	Ethanol	32.0		34.9		9	33
100-41-4	Ethylbenzene	24.2		23.7		2	15
141-78-6	Ethyl Acetate	ND		ND		nc	20
622-96-8	4-Ethyltoluene	ND		ND		nc	13

Duplicate Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28739-1DUP	2W25795.D	1	10/05/09	YMH	n/a	n/a	V2W1086
JA28739-1	2W25794.D	1	10/05/09	YMH	n/a	n/a	V2W1086

The QC reported here applies to the following samples: **Method:** TO-15

JA28238-7, JA28238-8, JA28238-9, JA28238-10, JA28238-11, JA28238-12, JA28238-13

CAS No.	Compound	JA28739-1 ppbv	Q	DUP ppbv	Q	RPD	Limits
76-13-1	Freon 113	ND		ND		nc	10
76-14-2	Freon 114	ND		ND		nc	20
142-82-5	Heptane	ND		ND		nc	20
87-68-3	Hexachlorobutadiene	ND		ND		nc	20
110-54-3	Hexane	ND		ND		nc	17
591-78-6	2-Hexanone	ND		ND		nc	20
67-63-0	Isopropyl Alcohol	8.5		7.8		9	26
75-09-2	Methylene chloride	3.0		2.9		3	26
78-93-3	Methyl ethyl ketone	ND		ND		nc	21
108-10-1	Methyl Isobutyl Ketone	ND		ND		nc	20
1634-04-4	Methyl Tert Butyl Ether	ND		ND		nc	20
115-07-1	Propylene	ND		ND		nc	16
100-42-5	Styrene	ND		ND		nc	11
71-55-6	1,1,1-Trichloroethane	ND		ND		nc	20
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	20
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	20
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	20
95-63-6	1,2,4-Trimethylbenzene	ND		ND		nc	19
108-67-8	1,3,5-Trimethylbenzene	ND		ND		nc	13
540-84-1	2,2,4-Trimethylpentane	ND		ND		nc	18
75-65-0	Tertiary Butyl Alcohol	ND		ND		nc	21
127-18-4	Tetrachloroethylene	0.16		0.15	J	6	17
109-99-9	Tetrahydrofuran	ND		ND		nc	20
108-88-3	Toluene	1.1		1.1		0	20
79-01-6	Trichloroethylene	0.17		0.17		0	13
75-69-4	Trichlorofluoromethane	1.3		1.2		8	21
75-01-4	Vinyl chloride	ND		ND		nc	20
108-05-4	Vinyl Acetate	ND		ND		nc	20
	m,p-Xylene	14.5		14.4		1	26
95-47-6	o-Xylene	4.3		4.1		5	20
1330-20-7	Xylenes (total)	18.8		18.6		1	26

CAS No.	Surrogate Recoveries	DUP	JA28739-1	Limits
460-00-4	4-Bromofluorobenzene	100%	100%	65-128%

Summa Cleaning Certification

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-SCC	2W25425.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here (Summa A817) applies to the following samples: **Method:** TO-15

Batch CP3597 cleaned 09/08/09: JA28238-1(A101), JA28238-2(A195), JA28238-3(A332), JA28238-4(A193), JA28238-5(A882), JA28238-6(A169), JA28238-7(A225), JA28238-8(A745)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.039	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.021	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.047	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.077	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.019	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3

Summa Cleaning Certification

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-SCC	2W25425.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here (Summa A817) applies to the following samples: **Method:** TO-15

Batch CP3597 cleaned 09/08/09: JA28238-1(A101), JA28238-2(A195), JA28238-3(A332), JA28238-4(A193), JA28238-5(A882), JA28238-6(A169), JA28238-7(A225), JA28238-8(A745)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.019	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.039	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.021	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.020	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.018	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.045	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.023	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.023	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	78%	65-128%

Summa Cleaning Certification

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-SCC	2W25443.D	1	09/10/09	YMH	n/a	n/a	V2W1073

The QC reported here (Summa A590) applies to the following samples: **Method:** TO-15

Batch CP3592 cleaned 09/02/09: JA28238-11(A594), JA28238-12(A422), JA28238-13(A730)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.039	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.021	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.047	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.077	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.019	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3

Summa Cleaning Certification

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-SCC	2W25443.D	1	09/10/09	YMH	n/a	n/a	V2W1073

The QC reported here (Summa A590) applies to the following samples: **Method:** TO-15

Batch CP3592 cleaned 09/02/09: JA28238-11(A594), JA28238-12(A422), JA28238-13(A730)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.019	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.039	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.021	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.020	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.018	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.045	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.023	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.023	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	87%	65-128%

Summa Cleaning Certification

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-SCC	2W25482.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here (Summa A674) applies to the following samples: **Method:** TO-15

Batch CP3598 cleaned 09/08/09: JA28238-9(A502), JA28238-10(A400)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.039	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.021	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.047	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.077	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.019	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3

Summa Cleaning Certification

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-SCC	2W25482.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here (Summa A674) applies to the following samples: **Method:** TO-15

Batch CP3598 cleaned 09/08/09: JA28238-9(A502), JA28238-10(A400)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.019	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.039	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.021	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.020	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.018	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.045	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.023	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.023	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	70%	65-128%

Summa Cleaning Certification

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-SCC	3W12870A.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here (Summa A425) applies to the following samples: **Method:** TO-15

Batch CP3635 cleaned 09/28/09: JA28238-10(A425)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
108-88-3	Toluene	ND	0.20	0.018	ppbv		ND	0.75	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	86%	65-128%

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1070-BFB
Lab File ID: 2W25355.D
Instrument ID: GCMS2W
Injection Date: 09/05/09
Injection Time: 10:16

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	19333	21.7		Pass
75	30.0 - 66.0% of mass 95	46261	52.0		Pass
95	Base peak, 100% relative abundance	89037	100.0		Pass
96	5.0 - 9.0% of mass 95	6398	7.2		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	70765	79.5		Pass
175	4.0 - 9.01% of mass 174	5329	6.0	(7.5) [a]	Pass
176	93.0 - 101.0% of mass 174	69757	78.3	(98.6) [a]	Pass
177	5.0 - 9.0% of mass 176	4659	5.2	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1070-ICC1070	2W25356.D	09/05/09	11:46	01:30	Initial cal 10
V2W1070-IC1070	2W25357.D	09/05/09	12:30	02:14	Initial cal 0.5
V2W1070-IC1070	2W25359.D	09/05/09	14:41	04:25	Initial cal 0.2
V2W1070-IC1070	2W25360.D	09/05/09	15:24	05:08	Initial cal 20
V2W1070-IC1070	2W25361.D	09/05/09	16:08	05:52	Initial cal 5.0
V2W1070-IC1070	2W25362.D	09/05/09	16:51	06:35	Initial cal 0.1
V2W1070-IC1070	2W25363.D	09/05/09	17:35	07:19	Initial cal 0.04
V2W1070-IC1070	2W25364.D	09/05/09	18:19	08:03	Initial cal 40

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1073-BFB
Lab File ID: 2W25417.D
Instrument ID: GCMS2W
Injection Date: 09/09/09
Injection Time: 08:18

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	8049	18.8		Pass
75	30.0 - 66.0% of mass 95	20416	47.7		Pass
95	Base peak, 100% relative abundance	42808	100.0		Pass
96	5.0 - 9.0% of mass 95	3021	7.1		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	36965	86.4		Pass
175	4.0 - 9.01% of mass 174	2778	6.5	(7.5) [a]	Pass
176	93.0 - 101.0% of mass 174	36333	84.9	(98.3) [a]	Pass
177	5.0 - 9.0% of mass 176	2417	5.6	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1073-CC1070	2W25419.D	09/09/09	10:34	02:16	Continuing cal 10
V2W1073-BS	2W25420.D	09/09/09	11:23	03:05	Blank Spike
V2W1073-BSD	2W25421.D	09/09/09	12:07	03:49	Blank Spike Duplicate
V2W1073-MB	2W25422.D	09/09/09	13:35	05:17	Method Blank
ZZZZZZ	2W25423.D	09/09/09	14:19	06:01	(unrelated sample)
ZZZZZZ	2W25424.D	09/09/09	15:03	06:45	(unrelated sample)
V2W1073-SCC	2W25425.D	09/09/09	15:46	07:28	Summa Cleaning Certification
ZZZZZZ	2W25426.D	09/09/09	16:30	08:12	(unrelated sample)
ZZZZZZ	2W25427.D	09/09/09	17:14	08:56	(unrelated sample)
ZZZZZZ	2W25428.D	09/09/09	18:41	10:23	(unrelated sample)
ZZZZZZ	2W25429.D	09/09/09	19:25	11:07	(unrelated sample)
ZZZZZZ	2W25430.D	09/09/09	20:08	11:50	(unrelated sample)
ZZZZZZ	2W25431.D	09/09/09	20:52	12:34	(unrelated sample)
ZZZZZZ	2W25432.D	09/09/09	21:36	13:18	(unrelated sample)
JA26160-5	2W25433.D	09/09/09	22:20	14:02	(used for QC only; not part of job JA28238)
JA26160-5DUP	2W25434.D	09/09/09	23:04	14:46	Duplicate
ZZZZZZ	2W25435.D	09/09/09	23:48	15:30	(unrelated sample)
ZZZZZZ	2W25436.D	09/10/09	00:32	16:14	(unrelated sample)
ZZZZZZ	2W25437.D	09/10/09	01:16	16:58	(unrelated sample)
ZZZZZZ	2W25438.D	09/10/09	01:59	17:41	(unrelated sample)
ZZZZZZ	2W25439.D	09/10/09	02:43	18:25	(unrelated sample)
ZZZZZZ	2W25440.D	09/10/09	03:27	19:09	(unrelated sample)
ZZZZZZ	2W25441.D	09/10/09	04:11	19:53	(unrelated sample)
ZZZZZZ	2W25442.D	09/10/09	04:55	20:37	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1073-BFB
Lab File ID: 2W25417.D
Instrument ID: GCMS2W
Injection Date: 09/09/09
Injection Time: 08:18

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1073-SCC	2W25443.D	09/10/09	05:39	21:21	Summa Cleaning Certification

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1075-BFB
Lab File ID: 2W25471.D
Instrument ID: GCMS2W
Injection Date: 09/11/09
Injection Time: 06:34

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	7456	20.0		Pass
75	30.0 - 66.0% of mass 95	18520	49.8		Pass
95	Base peak, 100% relative abundance	37216	100.0		Pass
96	5.0 - 9.0% of mass 95	2584	6.9		Pass
173	Less than 2.0% of mass 174	77	0.21	(0.25) [a]	Pass
174	50.0 - 120.0% of mass 95	30637	82.3		Pass
175	4.0 - 9.01% of mass 174	2189	5.9	(7.1) [a]	Pass
176	93.0 - 101.0% of mass 174	29986	80.6	(97.9) [a]	Pass
177	5.0 - 9.0% of mass 176	1955	5.3	(6.5) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1075-CC1070	2W25472.D	09/11/09	07:19	00:45	Continuing cal 10
V2W1075-BS	2W25473.D	09/11/09	08:04	01:30	Blank Spike
V2W1075-BSD	2W25474.D	09/11/09	08:48	02:14	Blank Spike Duplicate
V2W1075-MB	2W25475.D	09/11/09	10:17	03:43	Method Blank
ZZZZZZ	2W25476.D	09/11/09	11:12	04:38	(unrelated sample)
ZZZZZZ	2W25477.D	09/11/09	11:56	05:22	(unrelated sample)
ZZZZZZ	2W25478.D	09/11/09	12:39	06:05	(unrelated sample)
ZZZZZZ	2W25479.D	09/11/09	13:23	06:49	(unrelated sample)
ZZZZZZ	2W25480.D	09/11/09	14:07	07:33	(unrelated sample)
ZZZZZZ	2W25481.D	09/11/09	14:51	08:17	(unrelated sample)
V2W1075-SCC	2W25482.D	09/11/09	15:35	09:01	Summa Cleaning Certification
JA26852-1	2W25483.D	09/11/09	16:19	09:45	(used for QC only; not part of job JA28238)
JA26852-1DUP	2W25484.D	09/11/09	17:02	10:28	Duplicate
ZZZZZZ	2W25485.D	09/11/09	17:46	11:12	(unrelated sample)
ZZZZZZ	2W25486.D	09/11/09	18:29	11:55	(unrelated sample)
ZZZZZZ	2W25487.D	09/11/09	19:57	13:23	(unrelated sample)
ZZZZZZ	2W25488.D	09/11/09	20:41	14:07	(unrelated sample)
ZZZZZZ	2W25489.D	09/11/09	21:25	14:51	(unrelated sample)
ZZZZZZ	2W25490.D	09/11/09	22:08	15:34	(unrelated sample)
ZZZZZZ	2W25491.D	09/11/09	22:52	16:18	(unrelated sample)
ZZZZZZ	2W25492.D	09/11/09	23:35	17:01	(unrelated sample)
ZZZZZZ	2W25494.D	09/12/09	01:02	18:28	(unrelated sample)
ZZZZZZ	2W25495.D	09/12/09	01:46	19:12	(unrelated sample)
ZZZZZZ	2W25496.D	09/12/09	02:30	19:56	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample:	V2W1075-BFB	**Injection Date:**	09/11/09
Lab File ID:	2W25471.D	**Injection Time:**	06:34
Instrument ID:	GCMS2W		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	2W25497.D	09/12/09	03:13	20:39	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1080-BFB
Lab File ID: 2W25643.D
Instrument ID: GCMS2W
Injection Date: 09/22/09
Injection Time: 16:01

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	7860	16.8		Pass
75	30.0 - 66.0% of mass 95	21336	45.6		Pass
95	Base peak, 100% relative abundance	46797	100.0		Pass
96	5.0 - 9.0% of mass 95	3480	7.4		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	43234	92.4		Pass
175	4.0 - 9.01% of mass 174	3189	6.8	(7.4) [a]	Pass
176	93.0 - 101.0% of mass 174	42669	91.2	(98.7) [a]	Pass
177	5.0 - 9.0% of mass 176	2872	6.1	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1080-ICC1080	2W25644.D	09/22/09	16:45	00:44	Initial cal 10
V2W1080-IC1080	2W25645.D	09/22/09	19:01	03:00	Initial cal 0.5
V2W1080-IC1080	2W25646.D	09/22/09	20:29	04:28	Initial cal 5.0
V2W1080-IC1080	2W25647.D	09/22/09	21:12	05:11	Initial cal 0.2
V2W1080-IC1080	2W25648.D	09/22/09	21:55	05:54	Initial cal 20
V2W1080-IC1080	2W25650.D	09/22/09	23:22	07:21	Initial cal 0.1
V2W1080-IC1080	2W25651.D	09/23/09	06:03	14:02	Initial cal 0.04
V2W1080-IC1080	2W25652.D	09/23/09	07:31	15:30	Initial cal 5.0
V2W1080-IC1080	2W25653.D	09/23/09	08:14	16:13	Initial cal 10
V2W1080-IC1080	2W25654.D	09/23/09	08:58	16:57	Initial cal 40
V2W1080-IC1080	2W25655.D	09/23/09	09:41	17:40	Initial cal 0.5
V2W1080-IC1080	2W25656.D	09/23/09	10:25	18:24	Initial cal 0.2
V2W1080-IC1080	2W25657.D	09/23/09	11:52	19:51	Initial cal 20

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1083-BFB
Lab File ID: 2W25708.D
Instrument ID: GCMS2W
Injection Date: 09/28/09
Injection Time: 05:58

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	7339	18.4		Pass
75	30.0 - 66.0% of mass 95	18877	47.4		Pass
95	Base peak, 100% relative abundance	39821	100.0		Pass
96	5.0 - 9.0% of mass 95	3008	7.6		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	35712	89.7		Pass
175	4.0 - 9.01% of mass 174	2595	6.5	(7.3) [a]	Pass
176	93.0 - 101.0% of mass 174	34677	87.1	(97.1) [a]	Pass
177	5.0 - 9.0% of mass 176	2321	5.8	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1083-CC1080	2W25709.D	09/28/09	07:27	01:29	Continuing cal 10
V2W1083-BS	2W25710.D	09/28/09	08:11	02:13	Blank Spike
V2W1083-BSD	2W25711.D	09/28/09	08:56	02:58	Blank Spike Duplicate
V2W1083-MB	2W25712.D	09/28/09	12:49	06:51	Method Blank
V2W1083-SCC	2W25712A.D	09/28/09	12:49	06:51	Summa Cleaning Certification
ZZZZZZ	2W25713.D	09/28/09	13:32	07:34	(unrelated sample)
ZZZZZZ	2W25714.D	09/28/09	14:16	08:18	(unrelated sample)
ZZZZZZ	2W25715.D	09/28/09	15:00	09:02	(unrelated sample)
ZZZZZZ	2W25716.D	09/28/09	15:43	09:45	(unrelated sample)
ZZZZZZ	2W25717.D	09/28/09	18:38	12:40	(unrelated sample)
ZZZZZZ	2W25718.D	09/28/09	19:22	13:24	(unrelated sample)
ZZZZZZ	2W25720.D	09/28/09	20:50	14:52	(unrelated sample)
JA28271-5	2W25721.D	09/28/09	21:34	15:36	(used for QC only; not part of job JA28238)
JA28271-5DUP	2W25722.D	09/28/09	22:18	16:20	Duplicate
ZZZZZZ	2W25723.D	09/28/09	23:02	17:04	(unrelated sample)
ZZZZZZ	2W25724.D	09/28/09	23:46	17:48	(unrelated sample)
ZZZZZZ	2W25725.D	09/29/09	00:30	18:32	(unrelated sample)
JA28238-1	2W25726.D	09/29/09	01:14	19:16	IA-01
JA28238-2	2W25727.D	09/29/09	01:59	20:01	IA-02
JA28238-3	2W25728.D	09/29/09	03:27	21:29	IA-03
JA28238-5	2W25730.D	09/29/09	04:56	22:58	IA-04
JA28238-6	2W25731.D	09/29/09	05:40	23:42	IA-BG-05

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1084-BFB
Lab File ID: 2W25733.D
Instrument ID: GCMS2W
Injection Date: 09/29/09
Injection Time: 07:55

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	5091	17.1		Pass
75	30.0 - 66.0% of mass 95	14523	48.7		Pass
95	Base peak, 100% relative abundance	29808	100.0		Pass
96	5.0 - 9.0% of mass 95	2214	7.4		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	28410	95.3		Pass
175	4.0 - 9.01% of mass 174	2102	7.1	(7.4) [a]	Pass
176	93.0 - 101.0% of mass 174	27880	93.5	(98.1) [a]	Pass
177	5.0 - 9.0% of mass 176	1855	6.2	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1084-CC1080	2W25735.D	09/29/09	10:18	02:23	Continuing cal 10
V2W1084-BS	2W25736.D	09/29/09	11:05	03:10	Blank Spike
V2W1084-BSD	2W25737.D	09/29/09	11:49	03:54	Blank Spike Duplicate
V2W1084-SCC	2W25738A.D	09/29/09	13:17	05:22	Summa Cleaning Certification
V2W1084-MB	2W25738.D	09/29/09	13:17	05:22	Method Blank
ZZZZZZ	2W25739.D	09/29/09	14:00	06:05	(unrelated sample)
ZZZZZZ	2W25740.D	09/29/09	14:44	06:49	(unrelated sample)
ZZZZZZ	2W25741.D	09/29/09	15:27	07:32	(unrelated sample)
ZZZZZZ	2W25742.D	09/29/09	16:10	08:15	(unrelated sample)
ZZZZZZ	2W25743.D	09/29/09	16:54	08:59	(unrelated sample)
ZZZZZZ	2W25744.D	09/29/09	17:37	09:42	(unrelated sample)
ZZZZZZ	2W25745.D	09/29/09	18:21	10:26	(unrelated sample)
ZZZZZZ	2W25746.D	09/29/09	19:04	11:09	(unrelated sample)
JA28238-4	2W25747.D	09/29/09	20:32	12:37	IA-03 DUP
ZZZZZZ	2W25748.D	09/29/09	21:16	13:21	(unrelated sample)
ZZZZZZ	2W25749.D	09/29/09	22:00	14:05	(unrelated sample)
JA28598-2	2W25750.D	09/29/09	22:43	14:48	(used for QC only; not part of job JA28238)
JA28598-2DUP	2W25751.D	09/29/09	23:27	15:32	Duplicate
ZZZZZZ	2W25752.D	09/30/09	00:11	16:16	(unrelated sample)
ZZZZZZ	2W25753.D	09/30/09	00:56	17:01	(unrelated sample)
ZZZZZZ	2W25754.D	09/30/09	02:24	18:29	(unrelated sample)
ZZZZZZ	2W25755.D	09/30/09	03:08	19:13	(unrelated sample)
ZZZZZZ	2W25756.D	09/30/09	03:52	19:57	(unrelated sample)
ZZZZZZ	2W25757.D	09/30/09	04:36	20:41	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample:	V2W1084-BFB	**Injection Date:**	09/29/09
Lab File ID:	2W25733.D	**Injection Time:**	07:55
Instrument ID:	GCMS2W		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1084-SCC	2W25758.D	09/30/09	06:04	22:09	Summa Cleaning Certification

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1085-BFB
Lab File ID: 2W25763.D
Instrument ID: GCMS2W
Injection Date: 10/02/09
Injection Time: 06:47

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	5083	16.5		Pass
75	30.0 - 66.0% of mass 95	14468	47.1		Pass
95	Base peak, 100% relative abundance	30738	100.0		Pass
96	5.0 - 9.0% of mass 95	2216	7.2		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	30186	98.2		Pass
175	4.0 - 9.01% of mass 174	2201	7.2	(7.3) [a]	Pass
176	93.0 - 101.0% of mass 174	29464	95.9	(97.6) [a]	Pass
177	5.0 - 9.0% of mass 176	1981	6.4	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1085-ICC1085	2W25764.D	10/02/09	07:31	00:44	Initial cal 10
V2W1085-IC1085	2W25765.D	10/02/09	08:15	01:28	Initial cal 0.5
V2W1085-IC1085	2W25766.D	10/02/09	09:00	02:13	Initial cal 5.0
V2W1085-IC1085	2W25767.D	10/02/09	09:46	02:59	Initial cal 0.2
V2W1085-IC1085	2W25768.D	10/02/09	10:30	03:43	Initial cal 20
V2W1085-IC1085	2W25770.D	10/02/09	11:57	05:10	Initial cal 0.1
V2W1085-IC1085	2W25771.D	10/02/09	12:40	05:53	Initial cal 0.04
V2W1085-IC1085	2W25772.D	10/02/09	13:23	06:36	Initial cal 5.0
V2W1085-IC1085	2W25773.D	10/02/09	14:07	07:20	Initial cal 10
V2W1085-IC1085	2W25774.D	10/02/09	14:51	08:04	Initial cal 40
V2W1085-IC1085	2W25775.D	10/02/09	15:34	08:47	Initial cal 0.5
V2W1085-IC1085	2W25776.D	10/02/09	16:17	09:30	Initial cal 0.2
V2W1085-IC1085	2W25777.D	10/02/09	17:44	10:57	Initial cal 20
V2W1085-IC1085	2W25778.D	10/02/09	18:27	11:40	Initial cal 40
V2W1085-SCC	2W25779.D	10/02/09	19:55	13:08	Summa Cleaning Certification

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1086-BFB
Lab File ID: 2W25782.D
Instrument ID: GCMS2W
Injection Date: 10/05/09
Injection Time: 06:27

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	3347	16.9		Pass
75	30.0 - 66.0% of mass 95	9956	50.3		Pass
95	Base peak, 100% relative abundance	19784	100.0		Pass
96	5.0 - 9.0% of mass 95	1521	7.7		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	19824	100.2		Pass
175	4.0 - 9.01% of mass 174	1532	7.7	(7.7) [a]	Pass
176	93.0 - 101.0% of mass 174	19272	97.4	(97.2) [a]	Pass
177	5.0 - 9.0% of mass 176	1287	6.5	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1086-CC1085	2W25783.D	10/05/09	07:11	00:44	Continuing cal 10
V2W1086-ICV1085	2W25784.D	10/05/09	08:40	02:13	Initial cal verification 10
V2W1086-BS	2W25784.D	10/05/09	08:40	02:13	Blank Spike
V2W1086-BSD	2W25785.D	10/05/09	09:24	02:57	Blank Spike Duplicate
V2W1086-MB	2W25786.D	10/05/09	11:04	04:37	Method Blank
V2W1086-SCC	2W25786A.D	10/05/09	11:04	04:37	Summa Cleaning Certification
JA28238-7	2W25787.D	10/05/09	12:30	06:03	IA-BG-06
JA28238-8	2W25788.D	10/05/09	13:13	06:46	IA-BG-07
JA28238-9	2W25789.D	10/05/09	13:57	07:30	SG-01
JA28238-10	2W25790.D	10/05/09	14:41	08:14	SG-02
JA28238-11	2W25791.D	10/05/09	15:25	08:58	SG-03
JA28238-12	2W25792.D	10/05/09	16:09	09:42	SG-03 DUP
JA28238-13	2W25793.D	10/05/09	16:52	10:25	SG-04
JA28739-1	2W25794.D	10/05/09	18:22	11:55	(used for QC only; not part of job JA28238)
ZZZZZZ	2W25794.D	10/05/09	18:22	11:55	(unrelated sample)
JA28739-1DUP	2W25795.D	10/05/09	19:05	12:38	Duplicate
ZZZZZZ	2W25796.D	10/05/09	19:50	13:23	(unrelated sample)
ZZZZZZ	2W25796.D	10/05/09	19:50	13:23	(unrelated sample)
ZZZZZZ	2W25797.D	10/05/09	20:34	14:07	(unrelated sample)
ZZZZZZ	2W25797.D	10/05/09	20:34	14:07	(unrelated sample)
ZZZZZZ	2W25798.D	10/05/09	21:18	14:51	(unrelated sample)
ZZZZZZ	2W25798.D	10/05/09	21:18	14:51	(unrelated sample)
JA28238-10	2W25799.D	10/05/09	22:47	16:20	SG-02
JA28238-11	2W25800.D	10/05/09	23:31	17:04	SG-03

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1086-BFB
Lab File ID: 2W25782.D
Instrument ID: GCMS2W
Injection Date: 10/05/09
Injection Time: 06:27

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
JA28238-12	2W25801.D	10/06/09	00:16	17:49	SG-03 DUP
JA28238-13	2W25802.D	10/06/09	01:00	18:33	SG-04
ZZZZZZ	2W25803.D	10/06/09	01:44	19:17	(unrelated sample)
ZZZZZZ	2W25804.D	10/06/09	03:13	20:46	(unrelated sample)
ZZZZZZ	2W25805.D	10/06/09	03:57	21:30	(unrelated sample)
ZZZZZZ	2W25806.D	10/06/09	04:41	22:14	(unrelated sample)
ZZZZZZ	2W25807.D	10/06/09	05:25	22:58	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V3W523-BFB
Lab File ID: 3W12850.D
Instrument ID: GCMS3W
Injection Date: 10/02/09
Injection Time: 19:06

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	4462	18.7		Pass
75	30.0 - 66.0% of mass 95	12055	50.4		Pass
95	Base peak, 100% relative abundance	23920	100.0		Pass
96	5.0 - 9.0% of mass 95	1743	7.3		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	25045	104.7		Pass
175	4.0 - 9.01% of mass 174	1800	7.5	(7.2) [a]	Pass
176	93.0 - 101.0% of mass 174	24549	102.6	(98.0) [a]	Pass
177	5.0 - 9.0% of mass 176	1618	6.8	(6.6) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3W523-ICC523	3W12851.D	10/02/09	19:46	00:40	Initial cal 10
V3W523-IC523	3W12852.D	10/02/09	20:26	01:20	Initial cal 0.5
V3W523-IC523	3W12854.D	10/02/09	22:24	03:18	Initial cal 0.2
V3W523-IC523	3W12855.D	10/02/09	23:05	03:59	Initial cal 20
V3W523-IC523	3W12856.D	10/02/09	23:44	04:38	Initial cal 5.0
V3W523-IC523	3W12857.D	10/03/09	00:25	05:19	Initial cal 0.1
V3W523-IC523	3W12858.D	10/03/09	01:04	05:58	Initial cal 0.04
V3W523-IC523	3W12859.D	10/03/09	02:23	07:17	Initial cal 5.0
V3W523-IC523	3W12860.D	10/03/09	03:03	07:57	Initial cal 10
V3W523-IC523	3W12861.D	10/03/09	03:45	08:39	Initial cal 40
V3W523-IC523	3W12862.D	10/03/09	04:25	09:19	Initial cal 0.5
V3W523-IC523	3W12863.D	10/03/09	05:04	09:58	Initial cal 0.2
V3W523-IC523	3W12864.D	10/03/09	06:24	11:18	Initial cal 20
V3W523-IC523	3W12865.D	10/03/09	07:06	12:00	Initial cal 40

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V3W524-BFB
Lab File ID: 3W12866.D
Instrument ID: GCMS3W
Injection Date: 10/05/09
Injection Time: 07:13

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	5509	20.5		Pass
75	30.0 - 66.0% of mass 95	13487	50.3		Pass
95	Base peak, 100% relative abundance	26834	100.0		Pass
96	5.0 - 9.0% of mass 95	2061	7.7		Pass
173	Less than 2.0% of mass 174	70	0.26	(0.27) [a]	Pass
174	50.0 - 120.0% of mass 95	25957	96.7		Pass
175	4.0 - 9.01% of mass 174	1846	6.9	(7.1) [a]	Pass
176	93.0 - 101.0% of mass 174	25720	95.8	(99.1) [a]	Pass
177	5.0 - 9.0% of mass 176	1648	6.1	(6.4) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3W524-CC523	3W12867.D	10/05/09	08:32	01:19	Continuing cal 10
V3W524-BS	3W12868.D	10/05/09	10:00	02:47	Blank Spike
V3W524-ICV523	3W12868.D	10/05/09	10:00	02:47	Initial cal verification 10
V3W524-BSD	3W12869.D	10/05/09	11:00	03:47	Blank Spike Duplicate
V3W524-MB	3W12870.D	10/05/09	12:24	05:11	Method Blank
V3W524-SCC	3W12870A.D	10/05/09	12:24	05:11	Summa Cleaning Certification
ZZZZZZ	3W12871.D	10/05/09	13:04	05:51	(unrelated sample)
ZZZZZZ	3W12872.D	10/05/09	13:45	06:32	(unrelated sample)
ZZZZZZ	3W12873.D	10/05/09	14:25	07:12	(unrelated sample)
V3W524-SCC	3W12874.D	10/05/09	15:07	07:54	Summa Cleaning Certification
ZZZZZZ	3W12875.D	10/05/09	15:46	08:33	(unrelated sample)
ZZZZZZ	3W12876.D	10/05/09	16:25	09:12	(unrelated sample)
ZZZZZZ	3W12877.D	10/05/09	17:05	09:52	(unrelated sample)
JA28296-1	3W12878.D	10/05/09	18:25	11:12	(used for QC only; not part of job JA28238)
JA28296-1DUP	3W12879.D	10/05/09	19:05	11:52	Duplicate
ZZZZZZ	3W12880.D	10/05/09	19:46	12:33	(unrelated sample)
ZZZZZZ	3W12881.D	10/05/09	20:26	13:13	(unrelated sample)
ZZZZZZ	3W12882.D	10/05/09	21:07	13:54	(unrelated sample)
ZZZZZZ	3W12883.D	10/05/09	22:26	15:13	(unrelated sample)
ZZZZZZ	3W12884.D	10/05/09	23:06	15:53	(unrelated sample)
ZZZZZZ	3W12885.D	10/05/09	23:50	16:37	(unrelated sample)
ZZZZZZ	3W12886.D	10/06/09	00:34	17:21	(unrelated sample)
ZZZZZZ	3W12887.D	10/06/09	01:17	18:04	(unrelated sample)
ZZZZZZ	3W12889.D	10/06/09	03:21	20:08	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V3W524-BFB
Lab File ID: 3W12866.D
Instrument ID: GCMS3W
Injection Date: 10/05/09
Injection Time: 07:13

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3W12890.D	10/06/09	04:04	20:51	(unrelated sample)
ZZZZZZ	3W12891.D	10/06/09	04:46	21:33	(unrelated sample)
V3W524-SCC	3W12892.D	10/06/09	06:08	22:55	Summa Cleaning Certification

Volatile Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1073-CC1070	**Injection Date:**	09/09/09
Lab File ID:	2W25419.D	**Injection Time:**	10:34
Instrument ID:	GCMS2W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	151545	9.95	751574	11.88	388121	16.41
Upper Limit [a]	212163	10.28	1052204	12.21	543369	16.74
Lower Limit [b]	90927	9.62	450944	11.55	232873	16.08

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2W1073-BS	153257	9.95	747829	11.88	395550	16.40
V2W1073-BSD	153051	9.95	740990	11.89	381950	16.41
V2W1073-MB	163630	9.94	733786	11.88	311382	16.40
ZZZZZZ	152239	9.95	722171	11.88	331993	16.40
ZZZZZZ	147344	10.00	728807	11.91	340099	16.42
V2W1073-SCC	154291	9.94	695241	11.88	304014	16.40
ZZZZZZ	147007	10.02	715667	11.93	336251	16.43
ZZZZZZ	163845	9.94	799291	11.88	385102	16.40
ZZZZZZ	162583	9.94	754549	11.88	346723	16.40
ZZZZZZ	152247	9.94	713212	11.88	331361	16.40
ZZZZZZ	150894	9.94	703088	11.88	329095	16.40
ZZZZZZ	151720	9.95	728658	11.88	345744	16.40
ZZZZZZ	167611	9.95	822273	11.88	385219	16.40
JA26160-5	148842	9.95	719549	11.88	321421	16.40
JA26160-5DUP	159697	9.95	791646	11.88	377111	16.40
ZZZZZZ	157556	9.95	786770	11.88	383545	16.40
ZZZZZZ	178187	9.95	873192	11.88	424366	16.41
ZZZZZZ	156397	9.97	789977	11.89	387487	16.40
ZZZZZZ	157834	9.94	734567	11.88	320125	16.40
ZZZZZZ	166679	9.95	774294	11.88	350326	16.40
ZZZZZZ	168592	9.95	826402	11.88	389150	16.40
ZZZZZZ	164803	9.95	814149	11.88	383091	16.40
ZZZZZZ	161611	9.95	791397	11.88	380618	16.40
V2W1073-SCC	160150	9.95	782954	11.88	369730	16.40

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1075-CC1070	**Injection Date:**	09/11/09
Lab File ID:	2W25472.D	**Injection Time:**	07:19
Instrument ID:	GCMS2W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	113525	9.95	535099	11.89	289967	16.41
Upper Limit [a]	158935	10.28	749139	12.22	405954	16.74
Lower Limit [b]	68115	9.62	321059	11.56	173980	16.08

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2W1075-BS	117415	9.95	552536	11.89	294205	16.41
V2W1075-BSD	120727	9.95	567505	11.88	298489	16.40
V2W1075-MB	133845	9.96	569612	11.89	233731	16.41
ZZZZZZ	136088	9.96	676536	11.89	326320	16.41
ZZZZZZ	141839	9.98	648359	11.91	294398	16.41
ZZZZZZ	139984	9.98	670175	11.91	296057	16.41
ZZZZZZ	150295	9.99	694894	11.91	302848	16.41
ZZZZZZ	145129	9.98	682525	11.91	303841	16.41
ZZZZZZ	139106	9.97	654420	11.90	311102	16.41
V2W1075-SCC	148781	9.98	676588	11.91	288197	16.41
JA26852-1	142048	9.98	664218	11.91	305617	16.41
JA26852-1DUP	133195	9.98	624632	11.91	287654	16.41
ZZZZZZ	128665	9.99	630045	11.91	296243	16.42
ZZZZZZ	124038	10.00	606169	11.92	281997	16.42
ZZZZZZ	144700	10.03	679178	11.94	320542	16.43
ZZZZZZ	138849	10.03	653268	11.94	306148	16.42
ZZZZZZ	142240	10.02	675520	11.93	305452	16.43
ZZZZZZ	144613	9.98	710991	11.91	329941	16.42
ZZZZZZ	143717	10.00	716839	11.92	329288	16.42
ZZZZZZ	142278	10.01	713935	11.93	333443	16.42
ZZZZZZ	143672	9.98	716441	11.89	351947	16.41
ZZZZZZ	137064	9.97	622892	11.89	290280	16.41
ZZZZZZ	131597	10.03	627739	11.94	315274	16.43
ZZZZZZ	146032	9.95	663713	11.88	307064	16.40

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1083-CC1080	**Injection Date:**	09/28/09
Lab File ID:	2W25709.D	**Injection Time:**	07:27
Instrument ID:	GCMS2W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	111987	9.97	533651	11.89	284402	16.40
Upper Limit [a]	156782	10.30	747111	12.22	398163	16.73
Lower Limit [b]	67192	9.64	320191	11.56	170641	16.07

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2W1083-BS	115896	9.94	555542	11.88	294813	16.40
V2W1083-BSD	115710	9.95	555957	11.88	289858	16.39
V2W1083-MB	121702	9.97	581303	11.89	237403	16.40
V2W1083-SCC	121702	9.97	581303	11.89	237403	16.40
ZZZZZZ	115575	9.92	558743	11.86	247119	16.38
ZZZZZZ	111065	9.97	529947	11.89	240973	16.40
ZZZZZZ	113081	9.96	539186	11.88	233271	16.39
ZZZZZZ	103337	9.95	502130	11.87	222962	16.39
ZZZZZZ	115692	9.97	547079	11.89	223229	16.40
ZZZZZZ	107187	9.97	514676	11.89	217833	16.40
ZZZZZZ	97929	9.92	473190	11.86	207018	16.38
JA28271-5	99037	9.92	487008	11.86	215530	16.38
JA28271-5DUP	99702	9.92	489473	11.86	213737	16.38
ZZZZZZ	99434	9.92	487376	11.86	207348	16.38
ZZZZZZ	99056	9.92	482316	11.86	209593	16.38
ZZZZZZ	105708	9.92	518854	11.86	229970	16.38
JA28238-1	104319	9.92	516958	11.86	228122	16.38
JA28238-2	101786	9.92	505237	11.86	225058	16.38
JA28238-3	103975	9.92	513576	11.86	218900	16.38
JA28238-5	101653	9.92	500378	11.86	222063	16.38
JA28238-6	101120	9.92	498899	11.86	217645	16.38

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1084-CC1080	**Injection Date:**	09/29/09
Lab File ID:	2W25735.D	**Injection Time:**	10:18
Instrument ID:	GCMS2W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	111022	9.92	523035	11.86	282901	16.38
Upper Limit [a]	155431	10.25	732249	12.19	396061	16.71
Lower Limit [b]	66613	9.59	313821	11.53	169741	16.05

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2W1084-BS	121913	9.92	577822	11.86	319044	16.38
V2W1084-BSD	122626	9.92	590616	11.86	321472	16.38
V2W1084-SCC	134573	9.92	639927	11.86	270232	16.38
V2W1084-MB	134573	9.92	639927	11.86	270232	16.38
ZZZZZZ	122909	9.92	594388	11.86	264759	16.38
ZZZZZZ	113727	9.92	557315	11.86	243201	16.38
ZZZZZZ	113724	9.92	567156	11.86	283262	16.38
ZZZZZZ	121988	9.92	593642	11.86	259161	16.38
ZZZZZZ	112554	9.92	548241	11.86	234288	16.38
ZZZZZZ	108155	9.92	512486	11.86	224300	16.38
ZZZZZZ	102429	9.92	492141	11.85	214705	16.38
ZZZZZZ	105507	9.92	495098	11.86	218377	16.38
JA28238-4	103405	9.92	487241	11.85	211110	16.38
ZZZZZZ	111115	9.92	536069	11.86	238832	16.38
ZZZZZZ	100678	9.92	457782	11.86	214572	16.38
JA28598-2	106048	9.92	497463	11.85	219489	16.38
JA28598-2DUP	101564	9.92	479993	11.85	210988	16.38
ZZZZZZ	95442	9.92	442302	11.86	208629	16.38
ZZZZZZ	100573	9.92	475633	11.85	208025	16.38
ZZZZZZ	102000	9.92	476218	11.85	203236	16.38
ZZZZZZ	102330	9.92	493935	11.85	212708	16.38
ZZZZZZ	106314	9.92	508773	11.85	222746	16.38
ZZZZZZ	99577	9.92	487799	11.86	220093	16.38
V2W1084-SCC	95571	9.92	431174	11.86	173334	16.38

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1086-CC1085	**Injection Date:**	10/05/09
Lab File ID:	2W25783.D	**Injection Time:**	07:11
Instrument ID:	GCMS2W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	70641	9.91	292890	11.85	138205	16.38
Upper Limit [a]	98897	10.24	410046	12.18	193487	16.71
Lower Limit [b]	42385	9.58	175734	11.52	82923	16.05

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2W1086-BS	65111	9.91	277959	11.85	145677	16.38
V2W1086-BSD	71015	9.91	301667	11.85	157372	16.38
V2W1086-MB	71022	9.92	280951	11.85	111480	16.38
V2W1086-SCC	71022	9.92	280951	11.85	111480	16.38
JA28238-7	80767	9.92	340987	11.85	143862	16.37
JA28238-8	86372	9.92	391748	11.85	173573	16.38
JA28238-9	85220	9.92	394484	11.85	174261	16.38
JA28238-10	73146	9.92	310454	11.85	133435	16.38
JA28238-11	66825	9.92	287611	11.85	126014	16.38
JA28238-12	68996	9.91	292860	11.85	129767	16.38
JA28238-13	66075	9.92	275777	11.86	125873	16.38
JA28739-1	69855	9.92	298222	11.85	130857	16.38
ZZZZZZ	69855	9.92	298222	11.85	130857	16.38
JA28739-1DUP	73731	9.92	304495	11.85	134911	16.38
ZZZZZZ	73369	9.93	308201	11.85	136570	16.38
ZZZZZZ	73369	9.93	308201	11.85	136570	16.38
ZZZZZZ	79037	9.92	314938	11.85	139959	16.37
ZZZZZZ	79037	9.92	314938	11.85	139959	16.37
ZZZZZZ	77845	9.92	321351	11.85	141414	16.37
ZZZZZZ	77845	9.92	321351	11.85	141414	16.37
JA28238-10	59255	9.92	248353	11.85	113036	16.38
JA28238-11	68794	9.92	279722	11.86	124983	16.38
JA28238-12	71955	9.92	302818	11.85	131146	16.38
JA28238-13	71920	9.92	298037	11.85	133359	16.38
ZZZZZZ	72658	9.92	305922	11.85	135157	16.38
ZZZZZZ	56929	9.92	241705	11.85	109508	16.37
ZZZZZZ	65449	9.92	273901	11.85	118728	16.38
ZZZZZZ	69041	9.92	278792	11.85	124074	16.38
ZZZZZZ	81555	9.91	373399	11.85	168923	16.37

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1086-CC1085	**Injection Date:**	10/05/09
Lab File ID:	2W25783.D	**Injection Time:**	07:11
Instrument ID:	GCMS2W	**Method:**	TO-15

Lab	IS 1		IS 2		IS 3	
Sample ID	**AREA**	**RT**	**AREA**	**RT**	**AREA**	**RT**

(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V3W524-CC523	**Injection Date:**	10/05/09
Lab File ID:	3W12867.D	**Injection Time:**	08:32
Instrument ID:	GCMS3W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	89777	7.76	398659	9.46	188188	13.71
Upper Limit [a]	125688	8.09	558123	9.79	263463	14.04
Lower Limit [b]	53866	7.43	239195	9.13	112913	13.38

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V3W524-BS	95784	7.76	413899	9.46	194989	13.71
V3W524-BSD	96953	7.75	423905	9.46	198824	13.71
V3W524-MB	97525	7.75	387135	9.46	147587	13.71
V3W524-SCC	97525	7.75	387135	9.46	147587	13.71
ZZZZZZ	89828	7.76	394616	9.46	164449	13.71
ZZZZZZ	97547	7.76	406973	9.46	170807	13.71
ZZZZZZ	111469	7.77	457441	9.47	177168	13.71
V3W524-SCC	101559	7.75	399851	9.46	151005	13.71
ZZZZZZ	87912	7.76	354164	9.46	143642	13.71
ZZZZZZ	80057	7.75	344183	9.46	147689	13.71
ZZZZZZ	83865	7.76	337994	9.46	135344	13.71
JA28296-1	115918	7.76	485255	9.47	191305	13.71
JA28296-1DUP	104514	7.76	444495	9.46	182668	13.71
ZZZZZZ	96808	7.75	425073	9.46	179974	13.71
ZZZZZZ	90240	7.76	420699	9.46	176768	13.71
ZZZZZZ	83983	7.76	390895	9.46	177537	13.71
ZZZZZZ	110974	7.76	488796	9.47	199034	13.71
ZZZZZZ	95074	7.75	435597	9.46	189706	13.71
ZZZZZZ	91993	7.76	418595	9.46	187242	13.71
ZZZZZZ	100452	7.76	458955	9.46	200043	13.71
ZZZZZZ	107315	7.76	477024	9.46	213098	13.71
ZZZZZZ	107810	7.76	487028	9.46	211802	13.71
ZZZZZZ	111321	7.76	495852	9.46	204647	13.71
ZZZZZZ	100382	7.76	454050	9.46	187884	13.71
V3W524-SCC	100378	7.75	400341	9.46	158385	13.71

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.86	9.95	0.689	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.95	0.585	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.17	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.95	0.631	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.72	9.95	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.82	9.95	1.087	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.88	1.062	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.95	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.41	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.38	9.95	0.641	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.95	1.000	ok	1.001	0.941-1.061
4-Ethyltoluene	18.89	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.13	9.95	0.516	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.77	16.41	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.08	9.95	0.712	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.30	9.95	0.935	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.51	11.88	1.137	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.95	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.88	1.076	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Propane	5.24	9.95	0.527	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.65	11.88	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.69	9.95	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.95	1.053	ok	1.057	0.997-1.117
Toluene	14.53	11.88	1.223	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.69	9.95	0.572	ok	0.571	0.511-0.631
Vinyl Acetate	9.04	9.95	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.90	11.88	1.086	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	121875	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	602919	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	324618	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.91	9.95	0.694	ok	0.691	0.631-0.751
1,3-Butadiene	5.84	9.95	0.587	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.12	9.95	0.615	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.89	9.95	0.592	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.29	9.95	0.632	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.69	11.88	1.068	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.95	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.60	16.41	1.194	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.45	9.95	0.648	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.98	9.95	1.003	ok	1.001	0.941-1.061
4-Ethyltoluene	18.88	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.06	9.95	0.810	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.77	9.95	0.680	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.14	9.95	0.517	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.78	16.41	0.901	ok	0.900	0.840-0.960
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.16	9.95	0.720	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.35	9.95	0.940	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.53	11.88	1.139	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.01	9.95	0.906	ok	0.905	0.845-0.965
Methylmethacrylate	12.79	11.88	1.077	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Propane	5.23	9.95	0.526	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.96	16.41	1.155	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.64	11.88	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.76	9.95	0.780	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.53	9.95	1.058	ok	1.057	0.997-1.117
Toluene	14.52	11.88	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.06	9.95	0.911	ok	0.910	0.850-0.970
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.55	16.41	1.069	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	136804	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	642918	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	301322	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.92	9.95	0.695	ok	0.691	0.631-0.751
1,3-Butadiene	5.83	9.95	0.586	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.12	9.95	0.615	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.45	16.41	1.002	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.29	9.95	0.632	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.24	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.72	11.88	1.071	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.95	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.78	9.95	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.41	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.47	9.95	0.650	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.98	9.95	1.003	ok	1.001	0.941-1.061
4-Ethyltoluene	18.88	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.12	9.95	0.515	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.79	16.41	0.901	ok	0.900	0.840-0.960
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.17	9.95	0.721	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.37	9.95	0.942	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.54	11.88	1.140	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.02	9.95	0.907	ok	0.905	0.845-0.965
Methylmethacrylate	12.79	11.88	1.077	ok	1.076	1.016-1.136
Nonane	17.74	16.41	1.081	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.95	0.526	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.54	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.96	16.41	1.155	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.64	11.88	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.78	9.95	0.782	ok	0.778	0.718-0.838
Tetrachloroethylene	15.72	16.41	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.54	9.95	1.059	ok	1.057	0.997-1.117
Toluene	14.52	11.88	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.08	9.95	0.913	ok	0.910	0.850-0.970
m,p-Xylene	17.04	16.41	1.038	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	136025	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	633129	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	292447	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.85	9.95	0.688	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.95	0.585	ok	0.586	0.526-0.646
Benzene	11.57	11.89	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.89	1.058	ok	1.059	0.999-1.119
Bromoform	17.18	16.41	1.047	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.95	0.631	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.72	9.95	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.89	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.68	9.95	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.89	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.89	1.061	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.99	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.95	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.89	1.135	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.41	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.04	11.89	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.89	1.014	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.38	9.95	0.641	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.95	1.000	ok	1.001	0.941-1.061
4-Ethyltoluene	18.89	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.12	9.95	0.515	ok	0.515	0.455-0.575
Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.77	16.41	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.19	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.09	9.95	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.30	9.95	0.935	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.52	11.89	1.137	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.95	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.89	1.075	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Propane	5.24	9.95	0.527	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.45	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.56	16.41	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.23	11.89	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.43	16.41	1.184	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.66	11.89	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.69	9.95	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.95	1.053	ok	1.057	0.997-1.117
Toluene	14.53	11.89	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.89	1.061	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.69	9.95	0.572	ok	0.571	0.511-0.631
Vinyl Acetate	9.04	9.95	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	113592	ok	126872	76123-177621
1,4-Difluorobenzene	11.89	ok	11.88	11.55-12.21	570376	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	312683	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.86	9.94	0.690	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.94	0.586	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.94	0.615	ok	0.614	0.554-0.674
Bromoethene	6.64	9.94	0.668	ok	0.667	0.607-0.727
n-Butane	5.88	9.94	0.592	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.94	0.820	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.94	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.94	0.632	ok	0.632	0.572-0.692
Chloroform	10.07	9.94	1.013	ok	1.012	0.952-1.072
Chloromethane	5.46	9.94	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.94	0.797	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.94	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.94	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.68	9.94	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.82	9.94	1.089	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.88	1.062	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.94	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.94	0.879	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.94	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.60	16.41	1.194	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.02	11.88	1.180	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.94	1.094	ok	1.093	1.033-1.153
Ethanol	6.39	9.94	0.643	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.94	1.001	ok	1.001	0.941-1.061
4-Ethyltoluene	18.88	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.06	9.94	0.811	ok	0.810	0.750-0.870
Freon 114	5.56	9.94	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.94	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.94	0.679	ok	0.679	0.619-0.739
Freon 123A	6.81	9.94	0.685	ok	0.685	0.625-0.745
Freon 152A	5.13	9.94	0.516	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.94	1.004	ok	1.003	0.943-1.063
2-Hexanone	14.77	16.41	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.19	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.09	9.94	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.94	0.784	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.31	9.94	0.937	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.51	11.88	1.137	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.94	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.88	1.076	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.39	9.94	0.743	ok	0.743	0.683-0.803
Propane	5.24	9.94	0.527	ok	0.526	0.466-0.586
Propylene	5.21	9.94	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.94	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.96	16.41	1.155	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.65	11.88	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.70	9.94	0.775	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.49	9.94	1.055	ok	1.057	0.997-1.117
Toluene	14.52	11.88	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.94	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.94	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.04	9.94	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.04	16.41	1.038	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.94	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.94	ok	9.95	9.62-10.28	129325	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	611123	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	309325	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,3-Butadiene	5.84	9.95	0.587	ok	0.586	0.526-0.646
Benzene	11.57	11.88	0.974	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.63	9.95	0.666	ok	0.667	0.607-0.727
n-Butane	5.89	9.95	0.592	ok	0.591	0.531-0.651
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chloroethane	6.30	9.95	0.633	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
Cyclohexane	11.84	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.95	9.95	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.24	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.75	11.88	1.073	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.99	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.95	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
4-Ethyltoluene	18.89	16.41	1.151	ok	1.151	1.091-1.211
Freon 113	8.06	9.95	0.810	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.13	9.95	0.516	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Methyl Isobutyl Ketone	13.55	11.88	1.141	ok	1.139	1.079-1.199

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Methyl Tert Butyl Ether	9.04	9.95	0.909	ok	0.905	0.845-0.965
Methylmethacrylate	12.80	11.88	1.077	ok	1.076	1.016-1.136
Nonane	17.74	16.41	1.081	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trimethylbenzene	19.41	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.65	11.88	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.81	9.95	0.785	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.58	9.95	1.063	ok	1.057	0.997-1.117
Toluene	14.53	11.88	1.223	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.06	9.95	0.710	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099
o-Xylene	17.55	16.41	1.069	ok	1.070	1.010-1.130
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	138219	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	647187	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	294519	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Benzene	11.57	11.88	0.974	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chloroform	10.06	9.95	1.011	ok	1.012	0.952-1.072
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
cis-1,3-Dichloropropene	13.50	11.88	1.136	ok	1.135	1.075-1.195
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Freon 113	8.06	9.95	0.810	ok	0.810	0.750-0.870
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Heptane	12.90	11.88	1.086	ok	1.085	1.025-1.145
Hexane	9.97	9.95	1.002	ok	1.003	0.943-1.063
Isopropylbenzene	18.19	16.41	1.108	ok	1.108	1.048-1.168
Methyl Isobutyl Ketone	13.56	11.88	1.141	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.05	9.95	0.910	ok	0.905	0.845-0.965
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.64	11.88	1.064	ok	1.064	1.004-1.124
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Toluene	14.53	11.88	1.223	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.06	9.95	0.710	ok	0.709	0.649-0.769
m,p-Xylene	17.04	16.41	1.038	ok	1.039	0.979-1.099
o-Xylene	17.55	16.41	1.069	ok	1.070	1.010-1.130

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	130925	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	619828	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	282724	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.85	9.95	0.688	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.95	0.585	ok	0.586	0.526-0.646
Benzene	11.57	11.89	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.59	11.89	1.059	ok	1.059	0.999-1.119
Bromoform	17.19	16.42	1.047	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.59	16.42	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.48	16.42	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.95	0.631	ok	0.632	0.572-0.692
Chloroform	10.08	9.95	1.013	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.72	16.42	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.72	9.95	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.89	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.68	9.95	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.26	16.42	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.40	11.89	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.89	1.061	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	15.00	16.42	0.914	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.95	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.78	9.95	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.50	11.89	1.135	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.42	1.194	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.42	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.69	16.42	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.04	11.89	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.89	1.014	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.88	9.95	1.093	ok	1.093	1.033-1.153
Ethanol	6.38	9.95	0.641	ok	0.644	0.584-0.704
Ethylbenzene	16.86	16.42	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.95	1.000	ok	1.001	0.941-1.061
4-Ethyltoluene	18.90	16.42	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.55	9.95	0.558	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.12	9.95	0.515	ok	0.515	0.455-0.575
Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.42	1.366	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.78	16.42	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.20	16.42	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.10	9.95	0.714	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.89	16.42	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.32	9.95	0.937	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.53	11.89	1.138	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.95	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.79	11.89	1.076	ok	1.076	1.016-1.136
Nonane	17.76	16.42	1.082	ok	1.081	1.021-1.141
Octane	15.53	16.42	0.946	ok	0.946	0.886-1.006
Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.95	0.526	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.45	16.42	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.10	9.95	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.57	16.42	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.24	11.89	1.198	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.42	1.336	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.43	16.42	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.98	16.42	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.66	11.89	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.72	9.95	0.776	ok	0.778	0.718-0.838
Tetrachloroethylene	15.74	16.42	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.95	1.053	ok	1.057	0.997-1.117
Toluene	14.53	11.89	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.63	11.89	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.05	9.95	0.910	ok	0.910	0.850-0.970
m,p-Xylene	17.06	16.42	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.58	16.42	1.071	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	108209	ok	126872	76123-177621
1,4-Difluorobenzene	11.89	ok	11.88	11.55-12.21	559053	ok	610817	366490-855144
Chlorobenzene-D5	16.42	ok	16.41	16.08-16.74	314927	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.85	9.92	0.691	ok	0.692	0.632-0.752
1,3-Butadiene	5.81	9.92	0.586	ok	0.586	0.526-0.646
Benzene	11.54	11.86	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.86	1.059	ok	1.059	0.999-1.119
Bromoform	17.14	16.39	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.92	0.615	ok	0.615	0.555-0.675
Bromoethene	6.62	9.92	0.667	ok	0.667	0.607-0.727
n-Butane	5.87	9.92	0.592	ok	0.591	0.531-0.651
Benzyl Chloride	19.57	16.39	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.12	9.92	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.44	16.39	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.16	9.92	0.520	ok	0.520	0.460-0.580
Chloroethane	6.26	9.92	0.631	ok	0.632	0.572-0.692
Chloroform	10.05	9.92	1.013	ok	1.012	0.952-1.072
Chloromethane	5.45	9.92	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.90	9.92	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.70	16.39	1.141	ok	1.141	1.081-1.201
Carbon tetrachloride	11.69	9.92	1.178	ok	1.178	1.118-1.238
Cyclohexane	11.83	11.86	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.92	9.92	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.67	9.92	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.23	16.39	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.81	9.92	1.090	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.36	11.86	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.61	11.86	1.063	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.00	9.92	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.96	16.39	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.71	9.92	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.75	9.92	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.48	11.86	1.137	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.59	16.39	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.05	16.39	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.39	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.01	11.86	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.03	11.86	1.014	ok	1.014	0.954-1.074

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,4-Dimethylpentane	10.85	9.92	1.094	ok	1.093	1.033-1.153
Ethanol	6.36	9.92	0.641	ok	0.645	0.585-0.705
Ethylbenzene	16.83	16.39	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.93	9.92	1.001	ok	1.003	0.943-1.063
4-Ethyltoluene	18.87	16.39	1.151	ok	1.151	1.091-1.211
Freon 113	8.03	9.92	0.809	ok	0.809	0.749-0.869
Freon 114	5.54	9.92	0.558	ok	0.559	0.499-0.619
Freon 115	5.00	9.92	0.504	ok	0.504	0.444-0.564
Freon 123	6.74	9.92	0.679	ok	0.679	0.619-0.739
Freon 123A	6.79	9.92	0.684	ok	0.685	0.625-0.745
Freon 152A	5.11	9.92	0.515	ok	0.516	0.456-0.576
Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.39	1.367	ok	1.367	1.307-1.427
Hexane	9.95	9.92	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.75	16.39	0.900	ok	0.901	0.841-0.961
Isopropylbenzene	18.17	16.39	1.109	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.07	9.92	0.713	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.86	16.39	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.78	9.92	0.784	ok	0.784	0.724-0.844
Methyl ethyl ketone	9.29	9.92	0.936	ok	0.939	0.879-0.999
Methyl Isobutyl Ketone	13.49	11.86	1.137	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.96	9.92	0.903	ok	0.906	0.846-0.966
Methylmethacrylate	12.76	11.86	1.076	ok	1.077	1.017-1.137
Nonane	17.73	16.39	1.082	ok	1.082	1.022-1.142
Octane	15.50	16.39	0.946	ok	0.946	0.886-1.006
Pentane	7.37	9.92	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.92	0.527	ok	0.527	0.467-0.587
Propylene	5.20	9.92	0.524	ok	0.524	0.464-0.584
Styrene	17.42	16.39	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.92	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.53	16.39	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.86	1.198	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.39	1.338	ok	1.338	1.278-1.398
1,2,4-Trimethylbenzene	19.40	16.39	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.95	16.39	1.156	ok	1.156	1.096-1.216

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,2,4-Trimethylpentane	12.62	11.86	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.67	9.92	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.71	16.39	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.47	9.92	1.055	ok	1.058	0.998-1.118
Toluene	14.50	11.86	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.60	11.86	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.03	9.92	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.67	9.92	0.572	ok	0.572	0.512-0.632
Vinyl Acetate	9.03	9.92	0.910	ok	0.910	0.850-0.970
m,p-Xylene	17.02	16.39	1.038	ok	1.039	0.979-1.099
o-Xylene	17.54	16.39	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.37	9.92	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.93	9.60-10.26	139514	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	653756	ok	576145	345687-806603
Chlorobenzene-D5	16.39	ok	16.39	16.06-16.72	314842	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.90	9.92	0.696	ok	0.692	0.632-0.752
1,3-Butadiene	5.81	9.92	0.586	ok	0.586	0.526-0.646
Benzene	11.54	11.86	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.86	1.059	ok	1.059	0.999-1.119
Bromoform	17.14	16.38	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.92	0.615	ok	0.615	0.555-0.675
Bromoethene	6.62	9.92	0.667	ok	0.667	0.607-0.727
n-Butane	5.87	9.92	0.592	ok	0.591	0.531-0.651
Benzyl Chloride	19.57	16.38	1.195	ok	1.194	1.134-1.254
Carbon disulfide	8.13	9.92	0.820	ok	0.819	0.759-0.879
Chlorobenzene	16.44	16.38	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.15	9.92	0.519	ok	0.520	0.460-0.580
Chloroethane	6.27	9.92	0.632	ok	0.632	0.572-0.692
Chloroform	10.05	9.92	1.013	ok	1.012	0.952-1.072
Chloromethane	5.45	9.92	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.91	9.92	0.797	ok	0.796	0.736-0.856
2-Chlorotoluene	18.70	16.38	1.142	ok	1.141	1.081-1.201
Carbon tetrachloride	11.69	9.92	1.178	ok	1.178	1.118-1.238
Cyclohexane	11.82	11.86	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.92	9.92	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.67	9.92	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.22	16.38	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.81	9.92	1.090	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.36	11.86	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.68	11.86	1.069	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.00	9.92	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.96	16.38	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.71	9.92	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.75	9.92	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.47	11.86	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.58	16.38	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.05	16.38	1.224	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.38	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.01	11.86	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.03	11.86	1.014	ok	1.014	0.954-1.074

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,4-Dimethylpentane	10.85	9.92	1.094	ok	1.093	1.033-1.153
Ethanol	6.44	9.92	0.649	ok	0.645	0.585-0.705
Ethylbenzene	16.83	16.38	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.97	9.92	1.005	ok	1.003	0.943-1.063
4-Ethyltoluene	18.87	16.38	1.152	ok	1.151	1.091-1.211
Freon 113	8.03	9.92	0.809	ok	0.809	0.749-0.869
Freon 114	5.54	9.92	0.558	ok	0.559	0.499-0.619
Freon 115	5.00	9.92	0.504	ok	0.504	0.444-0.564
Freon 123	6.74	9.92	0.679	ok	0.679	0.619-0.739
Freon 123A	6.80	9.92	0.685	ok	0.685	0.625-0.745
Freon 152A	5.12	9.92	0.516	ok	0.516	0.456-0.576
Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.42	16.38	1.369	ok	1.367	1.307-1.427
Hexane	9.95	9.92	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.77	16.38	0.902	ok	0.901	0.841-0.961
Isopropylbenzene	18.17	16.38	1.109	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.14	9.92	0.720	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.86	16.38	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.77	9.92	0.783	ok	0.784	0.724-0.844
Methyl ethyl ketone	9.35	9.92	0.943	ok	0.939	0.879-0.999
Methyl Isobutyl Ketone	13.52	11.86	1.140	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.00	9.92	0.907	ok	0.906	0.846-0.966
Methylmethacrylate	12.78	11.86	1.078	ok	1.077	1.017-1.137
Nonane	17.72	16.38	1.082	ok	1.082	1.022-1.142
Octane	15.50	16.38	0.946	ok	0.946	0.886-1.006
Pentane	7.37	9.92	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.92	0.527	ok	0.527	0.467-0.587
Propylene	5.20	9.92	0.524	ok	0.524	0.464-0.584
Styrene	17.42	16.38	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.92	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.53	16.38	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.86	1.198	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.38	1.339	ok	1.338	1.278-1.398
1,2,4-Trimethylbenzene	19.40	16.38	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.95	16.38	1.157	ok	1.156	1.096-1.216

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,2,4-Trimethylpentane	12.62	11.86	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.76	9.92	0.782	ok	0.778	0.718-0.838
Tetrachloroethylene	15.70	16.38	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.53	9.92	1.061	ok	1.058	0.998-1.118
Toluene	14.50	11.86	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.60	11.86	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.03	9.92	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.92	0.573	ok	0.572	0.512-0.632
Vinyl Acetate	9.05	9.92	0.912	ok	0.910	0.850-0.970
m,p-Xylene	17.02	16.38	1.039	ok	1.039	0.979-1.099
o-Xylene	17.54	16.38	1.071	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.37	9.92	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.93	9.60-10.26	128151	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	585074	ok	576145	345687-806603
Chlorobenzene-D5	16.38	ok	16.39	16.06-16.72	249594	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

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Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.86	9.93	0.691	ok	0.692	0.632-0.752
1,3-Butadiene	5.82	9.93	0.586	ok	0.586	0.526-0.646
Benzene	11.54	11.86	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.86	1.059	ok	1.059	0.999-1.119
Bromoform	17.14	16.39	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.93	0.614	ok	0.615	0.555-0.675
Bromoethene	6.63	9.93	0.668	ok	0.667	0.607-0.727
n-Butane	5.87	9.93	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.57	16.39	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.13	9.93	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.44	16.39	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.93	0.521	ok	0.520	0.460-0.580
Chloroethane	6.27	9.93	0.631	ok	0.632	0.572-0.692
Chloroform	10.05	9.93	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.93	0.550	ok	0.549	0.489-0.609
3-Chloropropene	7.90	9.93	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.69	16.39	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.69	9.93	1.177	ok	1.178	1.118-1.238
Cyclohexane	11.83	11.86	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.92	9.93	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.67	9.93	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.23	16.39	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.81	9.93	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.37	11.86	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.86	1.064	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.00	9.93	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.96	16.39	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.71	9.93	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.75	9.93	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.48	11.86	1.137	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.59	16.39	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.05	16.39	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.39	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.01	11.86	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.03	11.86	1.014	ok	1.014	0.954-1.074

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,4-Dimethylpentane	10.85	9.93	1.093	ok	1.093	1.033-1.153
Ethanol	6.38	9.93	0.642	ok	0.645	0.585-0.705
Ethylbenzene	16.83	16.39	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.94	9.93	1.001	ok	1.003	0.943-1.063
4-Ethyltoluene	18.87	16.39	1.151	ok	1.151	1.091-1.211
Freon 113	8.03	9.93	0.809	ok	0.809	0.749-0.869
Freon 114	5.54	9.93	0.558	ok	0.559	0.499-0.619
Freon 115	5.00	9.93	0.504	ok	0.504	0.444-0.564
Freon 123	6.74	9.93	0.679	ok	0.679	0.619-0.739
Freon 123A	6.80	9.93	0.685	ok	0.685	0.625-0.745
Freon 152A	5.12	9.93	0.516	ok	0.516	0.456-0.576
Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.39	1.367	ok	1.367	1.307-1.427
Hexane	9.95	9.93	1.002	ok	1.003	0.943-1.063
2-Hexanone	14.75	16.39	0.900	ok	0.901	0.841-0.961
Isopropylbenzene	18.17	16.39	1.109	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.09	9.93	0.714	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.87	16.39	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.78	9.93	0.783	ok	0.784	0.724-0.844
Methyl ethyl ketone	9.30	9.93	0.937	ok	0.939	0.879-0.999
Methyl Isobutyl Ketone	13.50	11.86	1.138	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.96	9.93	0.902	ok	0.906	0.846-0.966
Methylmethacrylate	12.76	11.86	1.076	ok	1.077	1.017-1.137
Nonane	17.73	16.39	1.082	ok	1.082	1.022-1.142
Octane	15.50	16.39	0.946	ok	0.946	0.886-1.006
Pentane	7.38	9.93	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.93	0.527	ok	0.527	0.467-0.587
Propylene	5.21	9.93	0.525	ok	0.524	0.464-0.584
Styrene	17.42	16.39	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.93	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.53	16.39	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.86	1.198	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.39	1.338	ok	1.338	1.278-1.398
1,2,4-Trimethylbenzene	19.40	16.39	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.95	16.39	1.156	ok	1.156	1.096-1.216

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
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Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,2,4-Trimethylpentane	12.62	11.86	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.68	9.93	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.71	16.39	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.93	1.055	ok	1.058	0.998-1.118
Toluene	14.50	11.86	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.61	11.86	1.063	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.04	9.93	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.93	0.572	ok	0.572	0.512-0.632
Vinyl Acetate	9.03	9.93	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.02	16.39	1.038	ok	1.039	0.979-1.099
o-Xylene	17.54	16.39	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.38	9.93	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	117717	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	542948	ok	576145	345687-806603
Chlorobenzene-D5	16.39	ok	16.39	16.06-16.72	256093	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.93	9.93	0.698	ok	0.692	0.632-0.752
1,3-Butadiene	5.82	9.93	0.586	ok	0.586	0.526-0.646
Benzene	11.55	11.86	0.974	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.86	1.059	ok	1.059	0.999-1.119
Bromoform	17.14	16.39	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.93	0.615	ok	0.615	0.555-0.675
Bromoethene	6.63	9.93	0.668	ok	0.667	0.607-0.727
n-Butane	5.87	9.93	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.57	16.39	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.13	9.93	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.45	16.39	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.93	0.521	ok	0.520	0.460-0.580
Chloroethane	6.27	9.93	0.631	ok	0.632	0.572-0.692
Chloroform	10.05	9.93	1.012	ok	1.012	0.952-1.072
Chloromethane	5.45	9.93	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.93	0.798	ok	0.796	0.736-0.856
2-Chlorotoluene	18.70	16.39	1.141	ok	1.141	1.081-1.201
Carbon tetrachloride	11.70	9.93	1.178	ok	1.178	1.118-1.238
Cyclohexane	11.83	11.86	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.93	9.93	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.68	9.93	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.23	16.39	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.82	9.93	1.090	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.37	11.86	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.72	11.86	1.073	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.00	9.93	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.96	16.39	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.93	0.879	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.93	0.984	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.48	11.86	1.137	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.60	16.39	1.196	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.05	16.39	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.39	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.01	11.86	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.04	11.86	1.015	ok	1.014	0.954-1.074

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,4-Dimethylpentane	10.85	9.93	1.093	ok	1.093	1.033-1.153
Ethanol	6.47	9.93	0.652	ok	0.645	0.585-0.705
Ethylbenzene	16.83	16.39	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.98	9.93	1.005	ok	1.003	0.943-1.063
4-Ethyltoluene	18.87	16.39	1.151	ok	1.151	1.091-1.211
Freon 113	8.04	9.93	0.810	ok	0.809	0.749-0.869
Freon 114	5.54	9.93	0.558	ok	0.559	0.499-0.619
Freon 115	5.01	9.93	0.505	ok	0.504	0.444-0.564
Freon 123	6.74	9.93	0.679	ok	0.679	0.619-0.739
Freon 123A	6.80	9.93	0.685	ok	0.685	0.625-0.745
Freon 152A	5.12	9.93	0.516	ok	0.516	0.456-0.576
Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.42	16.39	1.368	ok	1.367	1.307-1.427
Hexane	9.95	9.93	1.002	ok	1.003	0.943-1.063
2-Hexanone	14.78	16.39	0.902	ok	0.901	0.841-0.961
Isopropylbenzene	18.16	16.39	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.18	9.93	0.723	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.86	16.39	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.79	9.93	0.784	ok	0.784	0.724-0.844
Methyl ethyl ketone	9.36	9.93	0.943	ok	0.939	0.879-0.999
Methyl Isobutyl Ketone	13.53	11.86	1.141	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.02	9.93	0.908	ok	0.906	0.846-0.966
Methylmethacrylate	12.79	11.86	1.078	ok	1.077	1.017-1.137
Nonane	17.73	16.39	1.082	ok	1.082	1.022-1.142
Octane	15.50	16.39	0.946	ok	0.946	0.886-1.006
Pentane	7.38	9.93	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.93	0.527	ok	0.527	0.467-0.587
Propylene	5.20	9.93	0.524	ok	0.524	0.464-0.584
Styrene	17.42	16.39	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.93	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.53	16.39	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.86	1.198	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.39	1.338	ok	1.338	1.278-1.398
1,2,4-Trimethylbenzene	19.41	16.39	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.95	16.39	1.156	ok	1.156	1.096-1.216

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,2,4-Trimethylpentane	12.62	11.86	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.79	9.93	0.784	ok	0.778	0.718-0.838
Tetrachloroethylene	15.71	16.39	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.55	9.93	1.062	ok	1.058	0.998-1.118
Toluene	14.51	11.86	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.61	11.86	1.063	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.03	9.93	0.708	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.93	0.572	ok	0.572	0.512-0.632
Vinyl Acetate	9.05	9.93	0.911	ok	0.910	0.850-0.970
m,p-Xylene	17.02	16.39	1.038	ok	1.039	0.979-1.099
o-Xylene	17.55	16.39	1.071	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.38	9.93	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	131042	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	590893	ok	576145	345687-806603
Chlorobenzene-D5	16.39	ok	16.39	16.06-16.72	244249	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.85	9.93	0.690	ok	0.692	0.632-0.752
1,3-Butadiene	5.81	9.93	0.585	ok	0.586	0.526-0.646
Benzene	11.55	11.87	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.87	1.058	ok	1.059	0.999-1.119
Bromoform	17.16	16.40	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.93	0.614	ok	0.615	0.555-0.675
Bromoethene	6.62	9.93	0.667	ok	0.667	0.607-0.727
n-Butane	5.87	9.93	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.57	16.40	1.193	ok	1.194	1.134-1.254
Carbon disulfide	8.13	9.93	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.45	16.40	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.93	0.521	ok	0.520	0.460-0.580
Chloroethane	6.27	9.93	0.631	ok	0.632	0.572-0.692
Chloroform	10.06	9.93	1.013	ok	1.012	0.952-1.072
Chloromethane	5.45	9.93	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.90	9.93	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.70	16.40	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.70	9.93	1.178	ok	1.178	1.118-1.238
Cyclohexane	11.83	11.87	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.92	9.93	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.67	9.93	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.23	16.40	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.81	9.93	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.37	11.87	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.61	11.87	1.062	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.00	9.93	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.97	16.40	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.72	9.93	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.75	9.93	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.48	11.87	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.60	16.40	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.05	16.40	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.67	16.40	1.199	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.02	11.87	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.04	11.87	1.014	ok	1.014	0.954-1.074

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,4-Dimethylpentane	10.85	9.93	1.093	ok	1.093	1.033-1.153
Ethanol	6.37	9.93	0.641	ok	0.645	0.585-0.705
Ethylbenzene	16.84	16.40	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.94	9.93	1.001	ok	1.003	0.943-1.063
4-Ethyltoluene	18.88	16.40	1.151	ok	1.151	1.091-1.211
Freon 113	8.03	9.93	0.809	ok	0.809	0.749-0.869
Freon 114	5.54	9.93	0.558	ok	0.559	0.499-0.619
Freon 115	5.00	9.93	0.504	ok	0.504	0.444-0.564
Freon 123	6.74	9.93	0.679	ok	0.679	0.619-0.739
Freon 123A	6.80	9.93	0.685	ok	0.685	0.625-0.745
Freon 152A	5.12	9.93	0.516	ok	0.516	0.456-0.576
Heptane	12.87	11.87	1.084	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.40	1.366	ok	1.367	1.307-1.427
Hexane	9.95	9.93	1.002	ok	1.003	0.943-1.063
2-Hexanone	14.76	16.40	0.900	ok	0.901	0.841-0.961
Isopropylbenzene	18.17	16.40	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.08	9.93	0.713	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.87	16.40	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.78	9.93	0.783	ok	0.784	0.724-0.844
Methyl ethyl ketone	9.30	9.93	0.937	ok	0.939	0.879-0.999
Methyl Isobutyl Ketone	13.51	11.87	1.138	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.96	9.93	0.902	ok	0.906	0.846-0.966
Methylmethacrylate	12.77	11.87	1.076	ok	1.077	1.017-1.137
Nonane	17.73	16.40	1.081	ok	1.082	1.022-1.142
Octane	15.50	16.40	0.945	ok	0.946	0.886-1.006
Pentane	7.38	9.93	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.93	0.527	ok	0.527	0.467-0.587
Propylene	5.21	9.93	0.525	ok	0.524	0.464-0.584
Styrene	17.43	16.40	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.93	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.40	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.87	1.197	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.40	1.337	ok	1.338	1.278-1.398
1,2,4-Trimethylbenzene	19.41	16.40	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.96	16.40	1.156	ok	1.156	1.096-1.216

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,2,4-Trimethylpentane	12.63	11.87	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.68	9.93	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.72	16.40	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.47	9.93	1.054	ok	1.058	0.998-1.118
Toluene	14.51	11.87	1.222	ok	1.223	1.163-1.283
Trichloroethylene	12.61	11.87	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.03	9.93	0.708	ok	0.709	0.649-0.769
Vinyl chloride	5.67	9.93	0.571	ok	0.572	0.512-0.632
Vinyl Acetate	9.03	9.93	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.03	16.40	1.038	ok	1.039	0.979-1.099
o-Xylene	17.55	16.40	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.37	9.93	0.742	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.87	11.87	1.084	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	116475	ok	126645	75987-177303
1,4-Difluorobenzene	11.87	ok	11.86	11.53-12.19	543835	ok	576145	345687-806603
Chlorobenzene-D5	16.40	ok	16.39	16.06-16.72	290001	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,3-Butadiene	5.82	9.93	0.586	ok	0.586	0.526-0.646
Benzene	11.55	11.86	0.974	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.86	1.059	ok	1.059	0.999-1.119
Bromoform	17.14	16.39	1.046	ok	1.046	0.986-1.106
Bromomethane	6.12	9.93	0.616	ok	0.615	0.555-0.675
Bromoethene	6.63	9.93	0.668	ok	0.667	0.607-0.727
Carbon disulfide	8.13	9.93	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.45	16.39	1.004	ok	1.003	0.943-1.063
Chloroethane	6.29	9.93	0.633	ok	0.632	0.572-0.692
Chloroform	10.04	9.93	1.011	ok	1.012	0.952-1.072
2-Chlorotoluene	18.69	16.39	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.69	9.93	1.177	ok	1.178	1.118-1.238
Cyclohexane	11.82	11.86	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.93	9.93	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.67	9.93	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.23	16.39	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.81	9.93	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.38	11.86	1.044	ok	1.043	0.983-1.103
1,4-Dioxane	12.72	11.86	1.073	ok	1.067	1.007-1.127
Dibromochloromethane	14.95	16.39	0.912	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.93	0.879	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.75	9.93	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.48	11.86	1.137	ok	1.136	1.076-1.196
trans-1,3-Dichloropropene	14.02	11.86	1.182	ok	1.181	1.121-1.241
2,4-Dimethylpentane	10.84	9.93	1.092	ok	1.093	1.033-1.153
Ethylbenzene	16.83	16.39	1.027	ok	1.027	0.967-1.087
4-Ethyltoluene	18.87	16.39	1.151	ok	1.151	1.091-1.211
Freon 113	8.04	9.93	0.810	ok	0.809	0.749-0.869
Freon 114	5.55	9.93	0.559	ok	0.559	0.499-0.619
Freon 123	6.74	9.93	0.679	ok	0.679	0.619-0.739
Freon 123A	6.80	9.93	0.685	ok	0.685	0.625-0.745
Freon 152A	5.12	9.93	0.516	ok	0.516	0.456-0.576
Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145
Hexane	9.95	9.93	1.002	ok	1.003	0.943-1.063
Isopropylbenzene	18.17	16.39	1.109	ok	1.108	1.048-1.168

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Methyl Tert Butyl Ether	9.03	9.93	0.909	ok	0.906	0.846-0.966
Methylmethacrylate	12.78	11.86	1.078	ok	1.077	1.017-1.137
Nonane	17.73	16.39	1.082	ok	1.082	1.022-1.142
Octane	15.50	16.39	0.946	ok	0.946	0.886-1.006
Propylene	5.20	9.93	0.524	ok	0.524	0.464-0.584
Styrene	17.42	16.39	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.93	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.53	16.39	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.86	1.198	ok	1.198	1.138-1.258
1,2,4-Trimethylbenzene	19.41	16.39	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.95	16.39	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.62	11.86	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.79	9.93	0.784	ok	0.778	0.718-0.838
Tetrachloroethylene	15.70	16.39	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.56	9.93	1.063	ok	1.058	0.998-1.118
Toluene	14.51	11.86	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.59	11.86	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.03	9.93	0.708	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.93	0.572	ok	0.572	0.512-0.632
m,p-Xylene	17.02	16.39	1.038	ok	1.039	0.979-1.099
o-Xylene	17.54	16.39	1.070	ok	1.070	1.010-1.130

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	129882	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	592824	ok	576145	345687-806603
Chlorobenzene-D5	16.39	ok	16.39	16.06-16.72	237894	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Benzene	11.58	11.89	0.974	ok	0.973	0.913-1.033
Bromodichloromethane	12.59	11.89	1.059	ok	1.059	0.999-1.119
Carbon disulfide	8.18	9.97	0.820	ok	0.819	0.759-0.879
Chloroform	10.09	9.97	1.012	ok	1.012	0.952-1.072
Carbon tetrachloride	11.72	9.97	1.176	ok	1.178	1.118-1.238
Cyclohexane	11.85	11.89	0.997	ok	0.997	0.937-1.057
Dibromochloromethane	14.98	16.40	0.913	ok	0.913	0.853-0.973
cis-1,3-Dichloropropene	13.51	11.89	1.136	ok	1.136	1.076-1.196
trans-1,3-Dichloropropene	14.03	11.89	1.180	ok	1.181	1.121-1.241
2,4-Dimethylpentane	10.89	9.97	1.092	ok	1.093	1.033-1.153
Ethylbenzene	16.85	16.40	1.027	ok	1.027	0.967-1.087
Freon 113	8.09	9.97	0.811	ok	0.809	0.749-0.869
Freon 114	5.60	9.97	0.562	ok	0.559	0.499-0.619
Freon 123	6.81	9.97	0.683	ok	0.679	0.619-0.739
Heptane	12.89	11.89	1.084	ok	1.085	1.025-1.145
Hexane	10.01	9.97	1.004	ok	1.003	0.943-1.063
Methyl Isobutyl Ketone	13.59	11.89	1.143	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.11	9.97	0.914	ok	0.906	0.846-0.966
Nonane	17.73	16.40	1.081	ok	1.082	1.022-1.142
Octane	15.52	16.40	0.946	ok	0.946	0.886-1.006
Styrene	17.43	16.40	1.063	ok	1.063	1.003-1.123
2,2,4-Trimethylpentane	12.66	11.89	1.065	ok	1.064	1.004-1.124
Tetrachloroethylene	15.72	16.40	0.959	ok	0.958	0.898-1.018
Toluene	14.52	11.89	1.221	ok	1.223	1.163-1.283
Trichloroethylene	12.63	11.89	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.11	9.97	0.713	ok	0.709	0.649-0.769
m,p-Xylene	17.04	16.40	1.039	ok	1.039	0.979-1.099
o-Xylene	17.55	16.40	1.070	ok	1.070	1.010-1.130

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.97	ok	9.93	9.60-10.26	142182	ok	126645	75987-177303
1,4-Difluorobenzene	11.89	ok	11.86	11.53-12.19	650377	ok	576145	345687-806603
Chlorobenzene-D5	16.40	ok	16.39	16.06-16.72	278757	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.93	9.60-10.26	126120	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	561692	ok	576145	345687-806603
Chlorobenzene-D5	16.38	ok	16.39	16.06-16.72	234439	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.39	1.345	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	120679	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	537863	ok	576145	345687-806603
Chlorobenzene-D5	16.39	ok	16.39	16.06-16.72	231619	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
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V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.85	9.94	0.689	ok	0.692	0.632-0.752
1,3-Butadiene	5.81	9.94	0.585	ok	0.586	0.526-0.646
Benzene	11.55	11.88	0.972	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.18	16.41	1.047	ok	1.046	0.986-1.106
Bromomethane	6.10	9.94	0.614	ok	0.615	0.555-0.675
Bromoethene	6.62	9.94	0.666	ok	0.667	0.607-0.727
n-Butane	5.87	9.94	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.194	1.134-1.254
Carbon disulfide	8.13	9.94	0.818	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.16	9.94	0.519	ok	0.520	0.460-0.580
Chloroethane	6.27	9.94	0.631	ok	0.632	0.572-0.692
Chloroform	10.06	9.94	1.012	ok	1.012	0.952-1.072
Chloromethane	5.45	9.94	0.548	ok	0.549	0.489-0.609
3-Chloropropene	7.90	9.94	0.795	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.71	9.94	1.178	ok	1.178	1.118-1.238
Cyclohexane	11.83	11.88	0.996	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.93	9.94	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.67	9.94	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.82	9.94	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.38	11.88	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.64	11.88	1.064	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.00	9.94	0.503	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.72	9.94	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.76	9.94	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.60	16.41	1.194	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.05	16.41	1.222	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.05	11.88	1.014	ok	1.014	0.954-1.074

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
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V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,4-Dimethylpentane	10.85	9.94	1.092	ok	1.093	1.033-1.153
Ethanol	6.38	9.94	0.642	ok	0.645	0.585-0.705
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.96	9.94	1.002	ok	1.003	0.943-1.063
4-Ethyltoluene	18.88	16.41	1.151	ok	1.151	1.091-1.211
Freon 113	8.03	9.94	0.808	ok	0.809	0.749-0.869
Freon 114	5.54	9.94	0.557	ok	0.559	0.499-0.619
Freon 115	5.00	9.94	0.503	ok	0.504	0.444-0.564
Freon 123	6.74	9.94	0.678	ok	0.679	0.619-0.739
Freon 123A	6.80	9.94	0.684	ok	0.685	0.625-0.745
Freon 152A	5.12	9.94	0.515	ok	0.516	0.456-0.576
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.41	1.366	ok	1.367	1.307-1.427
Hexane	9.97	9.94	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.78	16.41	0.901	ok	0.901	0.841-0.961
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.10	9.94	0.714	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.212	1.152-1.272
Methylene chloride	7.78	9.94	0.783	ok	0.784	0.724-0.844
Methyl ethyl ketone	9.31	9.94	0.937	ok	0.939	0.879-0.999
Methyl Isobutyl Ketone	13.52	11.88	1.138	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.96	9.94	0.901	ok	0.906	0.846-0.966
Methylmethacrylate	12.78	11.88	1.076	ok	1.077	1.017-1.137
Nonane	17.74	16.41	1.081	ok	1.082	1.022-1.142
Octane	15.51	16.41	0.945	ok	0.946	0.886-1.006
Pentane	7.37	9.94	0.741	ok	0.743	0.683-0.803
Propane	5.23	9.94	0.526	ok	0.527	0.467-0.587
Propylene	5.20	9.94	0.523	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.08	9.94	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.56	16.41	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.23	11.88	1.198	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.41	1.336	ok	1.338	1.278-1.398
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.96	16.41	1.155	ok	1.156	1.096-1.216

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25645.D	09/22/09 19:01	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,2,4-Trimethylpentane	12.64	11.88	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.71	9.94	0.776	ok	0.778	0.718-0.838
Tetrachloroethylene	15.72	16.41	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.94	1.054	ok	1.058	0.998-1.118
Toluene	14.52	11.88	1.222	ok	1.223	1.163-1.283
Trichloroethylene	12.61	11.88	1.061	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.03	9.94	0.707	ok	0.709	0.649-0.769
Vinyl chloride	5.67	9.94	0.570	ok	0.572	0.512-0.632
Vinyl Acetate	9.04	9.94	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.38	9.94	0.742	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.94	ok	9.93	9.60-10.26	107331	ok	126645	75987-177303
1,4-Difluorobenzene	11.88	ok	11.86	11.53-12.19	511073	ok	576145	345687-806603
Chlorobenzene-D5	16.41	ok	16.39	16.06-16.72	287877	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
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V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
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V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	141969	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	620031	ok	576145	345687-806603
Chlorobenzene-D5	16.38	ok	16.39	16.06-16.72	242690	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
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V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
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V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.06	16.39	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	124288	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	558357	ok	576145	345687-806603
Chlorobenzene-D5	16.39	ok	16.39	16.06-16.72	224474	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1080-ICC1080	2W25644.D	09/22/09 16:45	YMH	10	GCMS2W	TO-15	
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V2W1080-IC1080	2W25646.D	09/22/09 20:29	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25647.D	09/22/09 21:12	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25648.D	09/22/09 21:55	YMH	20	GCMS2W	TO-15	
V2W1080-IC1080	2W25650.D	09/22/09 23:22	YMH	0.1	GCMS2W	TO-15	
V2W1080-IC1080	2W25651.D	09/23/09 06:03	YMH	0.04	GCMS2W	TO-15	
V2W1080-IC1080	2W25652.D	09/23/09 07:31	YMH	5.0	GCMS2W	TO-15	
V2W1080-IC1080	2W25653.D	09/23/09 08:14	YMH	10	GCMS2W	TO-15	
V2W1080-IC1080	2W25654.D	09/23/09 08:58	YMH	40	GCMS2W	TO-15	
V2W1080-IC1080	2W25655.D	09/23/09 09:41	YMH	0.5	GCMS2W	TO-15	
V2W1080-IC1080	2W25656.D	09/23/09 10:25	YMH	0.2	GCMS2W	TO-15	
V2W1080-IC1080	2W25657.D	09/23/09 11:52	YMH	20	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.39	1.345	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.93	9.60-10.26	121041	ok	126645	75987-177303
1,4-Difluorobenzene	11.86	ok	11.86	11.53-12.19	541166	ok	576145	345687-806603
Chlorobenzene-D5	16.39	ok	16.39	16.06-16.72	227436	ok	255382	153229-357535

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.84	9.91	0.690	ok	0.694	0.634-0.754
1,3-Butadiene	5.80	9.91	0.585	ok	0.586	0.526-0.646
Benzene	11.52	11.85	0.972	ok	0.973	0.913-1.033
Bromodichloromethane	12.55	11.85	1.059	ok	1.059	0.999-1.119
Bromoform	17.13	16.38	1.046	ok	1.046	0.986-1.106
Bromomethane	6.08	9.91	0.614	ok	0.614	0.554-0.674
Bromoethene	6.61	9.91	0.667	ok	0.667	0.607-0.727
n-Butane	5.85	9.91	0.590	ok	0.591	0.531-0.651
Benzyl Chloride	19.55	16.38	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.11	9.91	0.818	ok	0.819	0.759-0.879
Chlorobenzene	16.43	16.38	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.15	9.91	0.520	ok	0.520	0.460-0.580
Chloroethane	6.26	9.91	0.632	ok	0.632	0.572-0.692
Chloroform	10.03	9.91	1.012	ok	1.012	0.952-1.072
Chloromethane	5.43	9.91	0.548	ok	0.549	0.489-0.609
3-Chloropropene	7.88	9.91	0.795	ok	0.795	0.735-0.855
2-Chlorotoluene	18.68	16.38	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.68	9.91	1.179	ok	1.178	1.118-1.238
Cyclohexane	11.81	11.85	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.90	9.91	0.898	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.65	9.91	0.772	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.22	16.38	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.79	9.91	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.35	11.85	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.59	11.85	1.062	ok	1.067	1.007-1.127
Dichlorodifluoromethane	4.99	9.91	0.504	ok	0.503	0.443-0.563
Dibromochloromethane	14.95	16.38	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.70	9.91	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.73	9.91	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.46	11.85	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.58	16.38	1.195	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.03	16.38	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.65	16.38	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	13.99	11.85	1.181	ok	1.181	1.121-1.241

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	12.02	11.85	1.014	ok	1.014	0.954-1.074
2,4-Dimethylpentane	10.83	9.91	1.093	ok	1.093	1.033-1.153
Ethanol	6.36	9.91	0.642	ok	0.643	0.583-0.703
Ethylbenzene	16.82	16.38	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.92	9.91	1.001	ok	1.003	0.943-1.063
4-Ethyltoluene	18.86	16.38	1.151	ok	1.152	1.092-1.212
Freon 113	8.01	9.91	0.808	ok	0.809	0.749-0.869
Freon 114	5.53	9.91	0.558	ok	0.558	0.498-0.618
Freon 115	4.99	9.91	0.504	ok	0.504	0.444-0.564
Freon 123	6.72	9.91	0.678	ok	0.679	0.619-0.739
Freon 123A	6.78	9.91	0.684	ok	0.684	0.624-0.744
Freon 152A	5.11	9.91	0.516	ok	0.515	0.455-0.575
Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.38	1.368	ok	1.368	1.308-1.428
Hexane	9.94	9.91	1.003	ok	1.002	0.942-1.062
2-Hexanone	14.74	16.38	0.900	ok	0.901	0.841-0.961
Isopropylbenzene	18.15	16.38	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.06	9.91	0.712	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.86	16.38	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.76	9.91	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.28	9.91	0.936	ok	0.938	0.878-0.998
Methyl Isobutyl Ketone	13.48	11.85	1.138	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	8.94	9.91	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.75	11.85	1.076	ok	1.077	1.017-1.137
Nonane	17.72	16.38	1.082	ok	1.082	1.022-1.142
Octane	15.48	16.38	0.945	ok	0.945	0.885-1.005
Pentane	7.36	9.91	0.743	ok	0.743	0.683-0.803
Propane	5.21	9.91	0.526	ok	0.526	0.466-0.586
Propylene	5.19	9.91	0.524	ok	0.525	0.465-0.585
Styrene	17.41	16.38	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.06	9.91	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.52	16.38	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.19	11.85	1.197	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.92	16.38	1.338	ok	1.338	1.278-1.398

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trimethylbenzene	19.40	16.38	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.94	16.38	1.156	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.61	11.85	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.66	9.91	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.70	16.38	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.46	9.91	1.055	ok	1.058	0.998-1.118
Toluene	14.49	11.85	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.59	11.85	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.02	9.91	0.708	ok	0.708	0.648-0.768
Vinyl chloride	5.66	9.91	0.571	ok	0.572	0.512-0.632
Vinyl Acetate	9.01	9.91	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.01	16.38	1.038	ok	1.039	0.979-1.099
o-Xylene	17.53	16.38	1.070	ok	1.071	1.011-1.131
TVHC As Equiv Pentane	7.36	9.91	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.91	ok	9.92	9.59-10.25	87807	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	382042	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	190233	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.89	9.91	0.695	ok	0.694	0.634-0.754
1,3-Butadiene	5.80	9.91	0.585	ok	0.586	0.526-0.646
Benzene	11.53	11.85	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.54	11.85	1.058	ok	1.059	0.999-1.119
Bromoform	17.13	16.37	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.91	0.616	ok	0.614	0.554-0.674
Bromoethene	6.61	9.91	0.667	ok	0.667	0.607-0.727
n-Butane	5.85	9.91	0.590	ok	0.591	0.531-0.651
Benzyl Chloride	19.55	16.37	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.11	9.91	0.818	ok	0.819	0.759-0.879
Chlorobenzene	16.43	16.37	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.15	9.91	0.520	ok	0.520	0.460-0.580
Chloroethane	6.25	9.91	0.631	ok	0.632	0.572-0.692
Chloroform	10.03	9.91	1.012	ok	1.012	0.952-1.072
Chloromethane	5.43	9.91	0.548	ok	0.549	0.489-0.609
3-Chloropropene	7.88	9.91	0.795	ok	0.795	0.735-0.855
2-Chlorotoluene	18.68	16.37	1.141	ok	1.141	1.081-1.201
Carbon tetrachloride	11.68	9.91	1.179	ok	1.178	1.118-1.238
Cyclohexane	11.81	11.85	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.91	9.91	0.899	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.65	9.91	0.772	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.21	16.37	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.79	9.91	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.35	11.85	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.67	11.85	1.069	ok	1.067	1.007-1.127
Dichlorodifluoromethane	4.98	9.91	0.503	ok	0.503	0.443-0.563
Dibromochloromethane	14.95	16.37	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.70	9.91	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.74	9.91	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.46	11.85	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.58	16.37	1.196	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.03	16.37	1.224	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.65	16.37	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	13.99	11.85	1.181	ok	1.181	1.121-1.241

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	12.02	11.85	1.014	ok	1.014	0.954-1.074
2,4-Dimethylpentane	10.83	9.91	1.093	ok	1.093	1.033-1.153
Ethanol	6.40	9.91	0.646	ok	0.643	0.583-0.703
Ethylbenzene	16.82	16.37	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.91	1.004	ok	1.003	0.943-1.063
4-Ethyltoluene	18.85	16.37	1.151	ok	1.152	1.092-1.212
Freon 113	8.02	9.91	0.809	ok	0.809	0.749-0.869
Freon 114	5.53	9.91	0.558	ok	0.558	0.498-0.618
Freon 115	4.99	9.91	0.504	ok	0.504	0.444-0.564
Freon 123	6.74	9.91	0.680	ok	0.679	0.619-0.739
Freon 123A	6.78	9.91	0.684	ok	0.684	0.624-0.744
Freon 152A	5.11	9.91	0.516	ok	0.515	0.455-0.575
Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.37	1.369	ok	1.368	1.308-1.428
Hexane	9.93	9.91	1.002	ok	1.002	0.942-1.062
2-Hexanone	14.75	16.37	0.901	ok	0.901	0.841-0.961
Isopropylbenzene	18.15	16.37	1.109	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.13	9.91	0.719	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.85	16.37	1.213	ok	1.212	1.152-1.272
Methylene chloride	7.76	9.91	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.32	9.91	0.940	ok	0.938	0.878-0.998
Methyl Isobutyl Ketone	13.50	11.85	1.139	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	8.98	9.91	0.906	ok	0.905	0.845-0.965
Methylmethacrylate	12.76	11.85	1.077	ok	1.077	1.017-1.137
Nonane	17.72	16.37	1.082	ok	1.082	1.022-1.142
Octane	15.48	16.37	0.946	ok	0.945	0.885-1.005
Pentane	7.36	9.91	0.743	ok	0.743	0.683-0.803
Propane	5.21	9.91	0.526	ok	0.526	0.466-0.586
Propylene	5.20	9.91	0.525	ok	0.525	0.465-0.585
Styrene	17.41	16.37	1.064	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.06	9.91	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.52	16.37	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.19	11.85	1.197	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.37	1.340	ok	1.338	1.278-1.398

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trimethylbenzene	19.39	16.37	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.94	16.37	1.157	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.61	11.85	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.73	9.91	0.780	ok	0.778	0.718-0.838
Tetrachloroethylene	15.69	16.37	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.51	9.91	1.061	ok	1.058	0.998-1.118
Toluene	14.49	11.85	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.59	11.85	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.02	9.91	0.708	ok	0.708	0.648-0.768
Vinyl chloride	5.67	9.91	0.572	ok	0.572	0.512-0.632
Vinyl Acetate	9.02	9.91	0.910	ok	0.910	0.850-0.970
m,p-Xylene	17.01	16.37	1.039	ok	1.039	0.979-1.099
o-Xylene	17.53	16.37	1.071	ok	1.071	1.011-1.131
TVHC As Equiv Pentane	7.37	9.91	0.744	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.91	ok	9.92	9.59-10.25	87922	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	392278	ok	361356	216814-505898
Chlorobenzene-D5	16.37	ok	16.38	16.05-16.71	173371	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.88	9.93	0.693	ok	0.694	0.634-0.754
1,3-Butadiene	5.83	9.93	0.587	ok	0.586	0.526-0.646
Benzene	11.54	11.86	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.86	1.059	ok	1.059	0.999-1.119
Bromoform	17.13	16.38	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.93	0.615	ok	0.614	0.554-0.674
Bromoethene	6.64	9.93	0.669	ok	0.667	0.607-0.727
n-Butane	5.88	9.93	0.592	ok	0.591	0.531-0.651
Benzyl Chloride	19.55	16.38	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.13	9.93	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.43	16.38	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.18	9.93	0.522	ok	0.520	0.460-0.580
Chloroethane	6.28	9.93	0.632	ok	0.632	0.572-0.692
Chloroform	10.05	9.93	1.012	ok	1.012	0.952-1.072
Chloromethane	5.47	9.93	0.551	ok	0.549	0.489-0.609
3-Chloropropene	7.90	9.93	0.796	ok	0.795	0.735-0.855
2-Chlorotoluene	18.68	16.38	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.69	9.93	1.177	ok	1.178	1.118-1.238
Cyclohexane	11.82	11.86	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.93	9.93	0.899	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.68	9.93	0.773	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.22	16.38	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.81	9.93	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.36	11.86	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.86	1.064	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.01	9.93	0.505	ok	0.503	0.443-0.563
Dibromochloromethane	14.95	16.38	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.72	9.93	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.75	9.93	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.47	11.86	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.58	16.38	1.195	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.03	16.38	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.65	16.38	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.01	11.86	1.181	ok	1.181	1.121-1.241

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	12.03	11.86	1.014	ok	1.014	0.954-1.074
2,4-Dimethylpentane	10.84	9.93	1.092	ok	1.093	1.033-1.153
Ethanol	6.41	9.93	0.646	ok	0.643	0.583-0.703
Ethylbenzene	16.82	16.38	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.93	1.002	ok	1.003	0.943-1.063
4-Ethyltoluene	18.86	16.38	1.151	ok	1.152	1.092-1.212
Freon 113	8.04	9.93	0.810	ok	0.809	0.749-0.869
Freon 114	5.56	9.93	0.560	ok	0.558	0.498-0.618
Freon 115	5.02	9.93	0.506	ok	0.504	0.444-0.564
Freon 123	6.75	9.93	0.680	ok	0.679	0.619-0.739
Freon 123A	6.81	9.93	0.686	ok	0.684	0.624-0.744
Freon 152A	5.13	9.93	0.517	ok	0.515	0.455-0.575
Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.38	1.368	ok	1.368	1.308-1.428
Hexane	9.95	9.93	1.002	ok	1.002	0.942-1.062
2-Hexanone	14.75	16.38	0.900	ok	0.901	0.841-0.961
Isopropylbenzene	18.15	16.38	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.10	9.93	0.715	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.86	16.38	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.79	9.93	0.784	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.30	9.93	0.937	ok	0.938	0.878-0.998
Methyl Isobutyl Ketone	13.50	11.86	1.138	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	8.97	9.93	0.903	ok	0.905	0.845-0.965
Methylmethacrylate	12.76	11.86	1.076	ok	1.077	1.017-1.137
Nonane	17.72	16.38	1.082	ok	1.082	1.022-1.142
Octane	15.49	16.38	0.946	ok	0.945	0.885-1.005
Pentane	7.39	9.93	0.744	ok	0.743	0.683-0.803
Propane	5.24	9.93	0.528	ok	0.526	0.466-0.586
Propylene	5.22	9.93	0.526	ok	0.525	0.465-0.585
Styrene	17.41	16.38	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.93	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.52	16.38	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.20	11.86	1.197	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.92	16.38	1.338	ok	1.338	1.278-1.398

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trimethylbenzene	19.40	16.38	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.94	16.38	1.156	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.62	11.86	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.70	9.93	0.775	ok	0.778	0.718-0.838
Tetrachloroethylene	15.70	16.38	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.49	9.93	1.056	ok	1.058	0.998-1.118
Toluene	14.50	11.86	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.60	11.86	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.93	0.710	ok	0.708	0.648-0.768
Vinyl chloride	5.69	9.93	0.573	ok	0.572	0.512-0.632
Vinyl Acetate	9.04	9.93	0.910	ok	0.910	0.850-0.970
m,p-Xylene	17.02	16.38	1.039	ok	1.039	0.979-1.099
o-Xylene	17.53	16.38	1.070	ok	1.071	1.011-1.131
TVHC As Equiv Pentane	7.39	9.93	0.744	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.93	ok	9.92	9.59-10.25	89305	ok	83442	50065-116819
1,4-Difluorobenzene	11.86	ok	11.85	11.52-12.18	383564	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	184839	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.92	9.92	0.698	ok	0.694	0.634-0.754
1,3-Butadiene	5.80	9.92	0.585	ok	0.586	0.526-0.646
Benzene	11.52	11.85	0.972	ok	0.973	0.913-1.033
Bromodichloromethane	12.55	11.85	1.059	ok	1.059	0.999-1.119
Bromoform	17.13	16.38	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.92	0.615	ok	0.614	0.554-0.674
Bromoethene	6.62	9.92	0.667	ok	0.667	0.607-0.727
n-Butane	5.86	9.92	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.56	16.38	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.12	9.92	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.43	16.38	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.15	9.92	0.519	ok	0.520	0.460-0.580
Chloroethane	6.27	9.92	0.632	ok	0.632	0.572-0.692
Chloroform	10.04	9.92	1.012	ok	1.012	0.952-1.072
Chloromethane	5.45	9.92	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.89	9.92	0.795	ok	0.795	0.735-0.855
2-Chlorotoluene	18.69	16.38	1.141	ok	1.141	1.081-1.201
Carbon tetrachloride	11.69	9.92	1.178	ok	1.178	1.118-1.238
Cyclohexane	11.81	11.85	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.91	9.92	0.898	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.67	9.92	0.773	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.22	16.38	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.80	9.92	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.35	11.85	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.72	11.85	1.073	ok	1.067	1.007-1.127
Dichlorodifluoromethane	5.00	9.92	0.504	ok	0.503	0.443-0.563
Dibromochloromethane	14.95	16.38	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.71	9.92	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.74	9.92	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.46	11.85	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.58	16.38	1.195	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.04	16.38	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.38	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	13.99	11.85	1.181	ok	1.181	1.121-1.241

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	12.02	11.85	1.014	ok	1.014	0.954-1.074
2,4-Dimethylpentane	10.84	9.92	1.093	ok	1.093	1.033-1.153
Ethylbenzene	16.82	16.38	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.99	9.92	1.007	ok	1.003	0.943-1.063
4-Ethyltoluene	18.86	16.38	1.151	ok	1.152	1.092-1.212
Freon 113	8.03	9.92	0.809	ok	0.809	0.749-0.869
Freon 114	5.53	9.92	0.557	ok	0.558	0.498-0.618
Freon 115	5.00	9.92	0.504	ok	0.504	0.444-0.564
Freon 123	6.74	9.92	0.679	ok	0.679	0.619-0.739
Freon 123A	6.79	9.92	0.684	ok	0.684	0.624-0.744
Freon 152A	5.11	9.92	0.515	ok	0.515	0.455-0.575
Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.38	1.368	ok	1.368	1.308-1.428
Hexane	9.94	9.92	1.002	ok	1.002	0.942-1.062
2-Hexanone	14.78	16.38	0.902	ok	0.901	0.841-0.961
Isopropylbenzene	18.15	16.38	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.16	9.92	0.722	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.86	16.38	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.77	9.92	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.35	9.92	0.943	ok	0.938	0.878-0.998
Methyl Isobutyl Ketone	13.52	11.85	1.141	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	9.02	9.92	0.909	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.85	1.078	ok	1.077	1.017-1.137
Nonane	17.72	16.38	1.082	ok	1.082	1.022-1.142
Octane	15.49	16.38	0.946	ok	0.945	0.885-1.005
Pentane	7.37	9.92	0.743	ok	0.743	0.683-0.803
Propane	5.22	9.92	0.526	ok	0.526	0.466-0.586
Propylene	5.21	9.92	0.525	ok	0.525	0.465-0.585
Styrene	17.41	16.38	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.06	9.92	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.52	16.38	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.19	11.85	1.197	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.93	16.38	1.339	ok	1.338	1.278-1.398
1,2,4-Trimethylbenzene	19.40	16.38	1.184	ok	1.184	1.124-1.244

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,3,5-Trimethylbenzene	18.94	16.38	1.156	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.61	11.85	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.79	9.92	0.785	ok	0.778	0.718-0.838
Tetrachloroethylene	15.70	16.38	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.54	9.92	1.062	ok	1.058	0.998-1.118
Toluene	14.50	11.85	1.224	ok	1.223	1.163-1.283
Trichloroethylene	12.59	11.85	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.02	9.92	0.708	ok	0.708	0.648-0.768
Vinyl chloride	5.67	9.92	0.572	ok	0.572	0.512-0.632
Vinyl Acetate	9.06	9.92	0.913	ok	0.910	0.850-0.970
m,p-Xylene	17.00	16.38	1.038	ok	1.039	0.979-1.099
o-Xylene	17.53	16.38	1.070	ok	1.071	1.011-1.131
TVHC As Equiv Pentane	7.37	9.92	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	89176	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	383799	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	165302	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.83	9.92	0.689	ok	0.694	0.634-0.754
1,3-Butadiene	5.81	9.92	0.586	ok	0.586	0.526-0.646
Benzene	11.53	11.85	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.55	11.85	1.059	ok	1.059	0.999-1.119
Bromoform	17.14	16.38	1.046	ok	1.046	0.986-1.106
Bromomethane	6.08	9.92	0.613	ok	0.614	0.554-0.674
Bromoethene	6.61	9.92	0.666	ok	0.667	0.607-0.727
n-Butane	5.85	9.92	0.590	ok	0.591	0.531-0.651
Benzyl Chloride	19.56	16.38	1.194	ok	1.194	1.134-1.254
Carbon disulfide	8.11	9.92	0.818	ok	0.819	0.759-0.879
Chlorobenzene	16.43	16.38	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.15	9.92	0.519	ok	0.520	0.460-0.580
Chloroethane	6.26	9.92	0.631	ok	0.632	0.572-0.692
Chloroform	10.04	9.92	1.012	ok	1.012	0.952-1.072
Chloromethane	5.43	9.92	0.547	ok	0.549	0.489-0.609
3-Chloropropene	7.88	9.92	0.794	ok	0.795	0.735-0.855
2-Chlorotoluene	18.69	16.38	1.141	ok	1.141	1.081-1.201
Carbon tetrachloride	11.68	9.92	1.177	ok	1.178	1.118-1.238
Cyclohexane	11.81	11.85	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.90	9.92	0.897	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.65	9.92	0.771	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.22	16.38	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.79	9.92	1.088	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.36	11.85	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.60	11.85	1.063	ok	1.067	1.007-1.127
Dichlorodifluoromethane	4.99	9.92	0.503	ok	0.503	0.443-0.563
Dibromochloromethane	14.95	16.38	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.70	9.92	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.74	9.92	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.46	11.85	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.59	16.38	1.196	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.04	16.38	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.38	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.00	11.85	1.181	ok	1.181	1.121-1.241

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	12.02	11.85	1.014	ok	1.014	0.954-1.074
2,4-Dimethylpentane	10.84	9.92	1.093	ok	1.093	1.033-1.153
Ethanol	6.35	9.92	0.640	ok	0.643	0.583-0.703
Ethylbenzene	16.83	16.38	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.92	9.92	1.000	ok	1.003	0.943-1.063
4-Ethyltoluene	18.87	16.38	1.152	ok	1.152	1.092-1.212
Freon 113	8.02	9.92	0.808	ok	0.809	0.749-0.869
Freon 114	5.53	9.92	0.557	ok	0.558	0.498-0.618
Freon 115	4.99	9.92	0.503	ok	0.504	0.444-0.564
Freon 123	6.72	9.92	0.677	ok	0.679	0.619-0.739
Freon 123A	6.78	9.92	0.683	ok	0.684	0.624-0.744
Freon 152A	5.11	9.92	0.515	ok	0.515	0.455-0.575
Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.38	1.368	ok	1.368	1.308-1.428
Hexane	9.94	9.92	1.002	ok	1.002	0.942-1.062
2-Hexanone	14.75	16.38	0.900	ok	0.901	0.841-0.961
Isopropylbenzene	18.16	16.38	1.109	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.07	9.92	0.713	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.86	16.38	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.76	9.92	0.782	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.28	9.92	0.935	ok	0.938	0.878-0.998
Methyl Isobutyl Ketone	13.49	11.85	1.138	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	8.94	9.92	0.901	ok	0.905	0.845-0.965
Methylmethacrylate	12.75	11.85	1.076	ok	1.077	1.017-1.137
Nonane	17.72	16.38	1.082	ok	1.082	1.022-1.142
Octane	15.49	16.38	0.946	ok	0.945	0.885-1.005
Pentane	7.36	9.92	0.742	ok	0.743	0.683-0.803
Propane	5.21	9.92	0.525	ok	0.526	0.466-0.586
Propylene	5.20	9.92	0.524	ok	0.525	0.465-0.585
Styrene	17.42	16.38	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.06	9.92	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.53	16.38	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.20	11.85	1.198	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.92	16.38	1.338	ok	1.338	1.278-1.398

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trimethylbenzene	19.40	16.38	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.95	16.38	1.157	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.61	11.85	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.67	9.92	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.70	16.38	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.46	9.92	1.054	ok	1.058	0.998-1.118
Toluene	14.49	11.85	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.59	11.85	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.02	9.92	0.708	ok	0.708	0.648-0.768
Vinyl chloride	5.67	9.92	0.572	ok	0.572	0.512-0.632
Vinyl Acetate	9.01	9.92	0.908	ok	0.910	0.850-0.970
m,p-Xylene	17.02	16.38	1.039	ok	1.039	0.979-1.099
o-Xylene	17.54	16.38	1.071	ok	1.071	1.011-1.131
TVHC As Equiv Pentane	7.36	9.92	0.742	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	85573	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	374084	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	193281	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,3-Butadiene	5.81	9.91	0.586	ok	0.586	0.526-0.646
Benzene	11.53	11.85	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.85	1.060	ok	1.059	0.999-1.119
Bromoform	17.13	16.38	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.91	0.616	ok	0.614	0.554-0.674
Bromoethene	6.63	9.91	0.669	ok	0.667	0.607-0.727
Carbon disulfide	8.12	9.91	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.43	16.38	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.15	9.91	0.520	ok	0.520	0.460-0.580
Chloroethane	6.27	9.91	0.633	ok	0.632	0.572-0.692
Chloroform	10.03	9.91	1.012	ok	1.012	0.952-1.072
Chloromethane	5.44	9.91	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.90	9.91	0.797	ok	0.795	0.735-0.855
2-Chlorotoluene	18.68	16.38	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.68	9.91	1.179	ok	1.178	1.118-1.238
Cyclohexane	11.82	11.85	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.91	9.91	0.899	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.66	9.91	0.773	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.22	16.38	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.79	9.91	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.36	11.85	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.72	11.85	1.073	ok	1.067	1.007-1.127
Dibromochloromethane	14.94	16.38	0.912	ok	0.913	0.853-0.973
cis-1,2-Dichloroethylene	9.73	9.91	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.46	11.85	1.136	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.58	16.38	1.195	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.03	16.38	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.38	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.00	11.85	1.181	ok	1.181	1.121-1.241
2,4-Dimethylpentane	10.83	9.91	1.093	ok	1.093	1.033-1.153
Ethylbenzene	16.82	16.38	1.027	ok	1.027	0.967-1.087
4-Ethyltoluene	18.86	16.38	1.151	ok	1.152	1.092-1.212
Freon 113	8.02	9.91	0.809	ok	0.809	0.749-0.869
Freon 114	5.54	9.91	0.559	ok	0.558	0.498-0.618

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 123	6.74	9.91	0.680	ok	0.679	0.619-0.739
Freon 123A	6.79	9.91	0.685	ok	0.684	0.624-0.744
Freon 152A	5.10	9.91	0.515	ok	0.515	0.455-0.575
Heptane	12.86	11.85	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.40	16.38	1.368	ok	1.368	1.308-1.428
Hexane	9.94	9.91	1.003	ok	1.002	0.942-1.062
Isopropylbenzene	18.15	16.38	1.108	ok	1.108	1.048-1.168
Methyl Isobutyl Ketone	13.53	11.85	1.142	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	9.00	9.91	0.908	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.85	1.078	ok	1.077	1.017-1.137
Nonane	17.71	16.38	1.081	ok	1.082	1.022-1.142
Octane	15.48	16.38	0.945	ok	0.945	0.885-1.005
Pentane	7.36	9.91	0.743	ok	0.743	0.683-0.803
Styrene	17.41	16.38	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.05	9.91	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.52	16.38	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.19	11.85	1.197	ok	1.198	1.138-1.258
1,2,4-Trimethylbenzene	19.39	16.38	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.94	16.38	1.156	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.61	11.85	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.78	9.91	0.785	ok	0.778	0.718-0.838
Tetrachloroethylene	15.69	16.38	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.55	9.91	1.065	ok	1.058	0.998-1.118
Toluene	14.50	11.85	1.224	ok	1.223	1.163-1.283
Trichloroethylene	12.59	11.85	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.02	9.91	0.708	ok	0.708	0.648-0.768
Vinyl chloride	5.67	9.91	0.572	ok	0.572	0.512-0.632
m,p-Xylene	17.02	16.38	1.039	ok	1.039	0.979-1.099
o-Xylene	17.53	16.38	1.070	ok	1.071	1.011-1.131

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.91	ok	9.92	9.59-10.25	85792	ok	83442	50065-116819

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	376585	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	159885	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.97	9.92	0.703	ok	0.694	0.634-0.754
Benzene	11.52	11.85	0.972	ok	0.973	0.913-1.033
Bromodichloromethane	12.54	11.85	1.058	ok	1.059	0.999-1.119
Bromoform	17.13	16.38	1.046	ok	1.046	0.986-1.106
Bromomethane	6.10	9.92	0.615	ok	0.614	0.554-0.674
Carbon disulfide	8.12	9.92	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.43	16.38	1.003	ok	1.003	0.943-1.063
Chloroform	10.04	9.92	1.012	ok	1.012	0.952-1.072
2-Chlorotoluene	18.69	16.38	1.141	ok	1.141	1.081-1.201
Carbon tetrachloride	11.68	9.92	1.177	ok	1.178	1.118-1.238
1,1-Dichloroethane	8.91	9.92	0.898	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.65	9.92	0.771	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.23	16.38	0.930	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.80	9.92	1.089	ok	1.089	1.029-1.149
Dibromochloromethane	14.95	16.38	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.71	9.92	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.73	9.92	0.981	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.48	11.85	1.138	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.60	16.38	1.197	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.04	16.38	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.66	16.38	1.200	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.01	11.85	1.182	ok	1.181	1.121-1.241
2,4-Dimethylpentane	10.85	9.92	1.094	ok	1.093	1.033-1.153
Ethylbenzene	16.82	16.38	1.027	ok	1.027	0.967-1.087
4-Ethyltoluene	18.95	16.38	1.157	ok	1.152	1.092-1.212
Freon 113	8.03	9.92	0.809	ok	0.809	0.749-0.869
Freon 114	5.54	9.92	0.558	ok	0.558	0.498-0.618
Freon 123	6.74	9.92	0.679	ok	0.679	0.619-0.739
Freon 123A	6.78	9.92	0.683	ok	0.684	0.624-0.744
Freon 152A	5.11	9.92	0.515	ok	0.515	0.455-0.575
Heptane	12.85	11.85	1.084	ok	1.085	1.025-1.145
Hexane	9.94	9.92	1.002	ok	1.002	0.942-1.062
Isopropylbenzene	18.15	16.38	1.108	ok	1.108	1.048-1.168
p-Isopropyltoluene	19.86	16.38	1.212	ok	1.212	1.152-1.272

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Methylene chloride	7.77	9.92	0.783	ok	0.783	0.723-0.843
Methyl Isobutyl Ketone	13.55	11.85	1.143	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	9.04	9.92	0.911	ok	0.905	0.845-0.965
Nonane	17.71	16.38	1.081	ok	1.082	1.022-1.142
Octane	15.48	16.38	0.945	ok	0.945	0.885-1.005
Styrene	17.41	16.38	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.06	9.92	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.52	16.38	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.85	1.199	ok	1.198	1.138-1.258
1,2,4-Trimethylbenzene	19.40	16.38	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.95	16.38	1.157	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.61	11.85	1.064	ok	1.064	1.004-1.124
Tetrachloroethylene	15.69	16.38	0.958	ok	0.958	0.898-1.018
Toluene	14.50	11.85	1.224	ok	1.223	1.163-1.283
Trichloroethylene	12.58	11.85	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.02	9.92	0.708	ok	0.708	0.648-0.768
Vinyl chloride	5.67	9.92	0.572	ok	0.572	0.512-0.632
m,p-Xylene	17.02	16.38	1.039	ok	1.039	0.979-1.099
o-Xylene	17.55	16.38	1.071	ok	1.071	1.011-1.131

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	85725	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	367765	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	156098	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	85465	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	365978	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	159757	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	85655	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	361235	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	165050	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.84	9.92	0.690	ok	0.694	0.634-0.754
1,3-Butadiene	5.80	9.92	0.585	ok	0.586	0.526-0.646
Benzene	11.54	11.86	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.56	11.86	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.40	1.046	ok	1.046	0.986-1.106
Bromomethane	6.08	9.92	0.613	ok	0.614	0.554-0.674
Bromoethene	6.61	9.92	0.666	ok	0.667	0.607-0.727
n-Butane	5.86	9.92	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.57	16.40	1.193	ok	1.194	1.134-1.254
Carbon disulfide	8.12	9.92	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.45	16.40	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.15	9.92	0.519	ok	0.520	0.460-0.580
Chloroethane	6.26	9.92	0.631	ok	0.632	0.572-0.692
Chloroform	10.05	9.92	1.013	ok	1.012	0.952-1.072
Chloromethane	5.44	9.92	0.548	ok	0.549	0.489-0.609
3-Chloropropene	7.89	9.92	0.795	ok	0.795	0.735-0.855
2-Chlorotoluene	18.70	16.40	1.140	ok	1.141	1.081-1.201
Carbon tetrachloride	11.69	9.92	1.178	ok	1.178	1.118-1.238
Cyclohexane	11.82	11.86	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.91	9.92	0.898	ok	0.898	0.838-0.958
1,1-Dichloroethylene	7.66	9.92	0.772	ok	0.772	0.712-0.832
1,2-Dibromoethane	15.23	16.40	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.80	9.92	1.089	ok	1.089	1.029-1.149
1,2-Dichloropropane	12.37	11.86	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.86	1.064	ok	1.067	1.007-1.127
Dichlorodifluoromethane	4.99	9.92	0.503	ok	0.503	0.443-0.563
Dibromochloromethane	14.97	16.40	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.71	9.92	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.75	9.92	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.48	11.86	1.137	ok	1.136	1.076-1.196
m-Dichlorobenzene	19.60	16.40	1.195	ok	1.196	1.136-1.256
o-Dichlorobenzene	20.05	16.40	1.223	ok	1.223	1.163-1.283
p-Dichlorobenzene	19.67	16.40	1.199	ok	1.200	1.140-1.260
trans-1,3-Dichloropropene	14.01	11.86	1.181	ok	1.181	1.121-1.241

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	12.03	11.86	1.014	ok	1.014	0.954-1.074
2,4-Dimethylpentane	10.84	9.92	1.093	ok	1.093	1.033-1.153
Ethanol	6.36	9.92	0.641	ok	0.643	0.583-0.703
Ethylbenzene	16.83	16.40	1.026	ok	1.027	0.967-1.087
Ethyl Acetate	9.94	9.92	1.002	ok	1.003	0.943-1.063
4-Ethyltoluene	18.87	16.40	1.151	ok	1.152	1.092-1.212
Freon 113	8.02	9.92	0.808	ok	0.809	0.749-0.869
Freon 114	5.53	9.92	0.557	ok	0.558	0.498-0.618
Freon 115	4.99	9.92	0.503	ok	0.504	0.444-0.564
Freon 123	6.73	9.92	0.678	ok	0.679	0.619-0.739
Freon 123A	6.78	9.92	0.683	ok	0.684	0.624-0.744
Freon 152A	5.11	9.92	0.515	ok	0.515	0.455-0.575
Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.41	16.40	1.366	ok	1.368	1.308-1.428
Hexane	9.94	9.92	1.002	ok	1.002	0.942-1.062
2-Hexanone	14.77	16.40	0.901	ok	0.901	0.841-0.961
Isopropylbenzene	18.17	16.40	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.08	9.92	0.714	ok	0.716	0.656-0.776
p-Isopropyltoluene	19.87	16.40	1.212	ok	1.212	1.152-1.272
Methylene chloride	7.76	9.92	0.782	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.30	9.92	0.938	ok	0.938	0.878-0.998
Methyl Isobutyl Ketone	13.51	11.86	1.139	ok	1.140	1.080-1.200
Methyl Tert Butyl Ether	8.95	9.92	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.77	11.86	1.077	ok	1.077	1.017-1.137
Nonane	17.73	16.40	1.081	ok	1.082	1.022-1.142
Octane	15.50	16.40	0.945	ok	0.945	0.885-1.005
Pentane	7.36	9.92	0.742	ok	0.743	0.683-0.803
Propane	5.22	9.92	0.526	ok	0.526	0.466-0.586
Propylene	5.20	9.92	0.524	ok	0.525	0.465-0.585
Styrene	17.43	16.40	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.07	9.92	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.40	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.21	11.86	1.198	ok	1.198	1.138-1.258
1,2,4-Trichlorobenzene	21.92	16.40	1.337	ok	1.338	1.278-1.398

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trimethylbenzene	19.41	16.40	1.184	ok	1.184	1.124-1.244
1,3,5-Trimethylbenzene	18.96	16.40	1.156	ok	1.157	1.097-1.217
2,2,4-Trimethylpentane	12.62	11.86	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.69	9.92	0.775	ok	0.778	0.718-0.838
Tetrachloroethylene	15.71	16.40	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.46	9.92	1.054	ok	1.058	0.998-1.118
Toluene	14.50	11.86	1.223	ok	1.223	1.163-1.283
Trichloroethylene	12.60	11.86	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.02	9.92	0.708	ok	0.708	0.648-0.768
Vinyl chloride	5.66	9.92	0.571	ok	0.572	0.512-0.632
Vinyl Acetate	9.02	9.92	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.04	16.40	1.039	ok	1.039	0.979-1.099
o-Xylene	17.55	16.40	1.070	ok	1.071	1.011-1.131
TVHC As Equiv Pentane	7.36	9.92	0.742	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.87	11.86	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	78922	ok	83442	50065-116819
1,4-Difluorobenzene	11.86	ok	11.85	11.52-12.18	338920	ok	361356	216814-505898
Chlorobenzene-D5	16.40	ok	16.38	16.05-16.71	190728	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	77614	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	336727	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	140640	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	79275	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	341896	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	145279	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	71957	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	314904	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	144471	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1085-ICC1085	2W25764.D	10/02/09 07:31	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25765.D	10/02/09 08:15	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25766.D	10/02/09 09:00	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25767.D	10/02/09 09:46	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25768.D	10/02/09 10:30	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25770.D	10/02/09 11:57	YMH	0.1	GCMS2W	TO-15	
V2W1085-IC1085	2W25771.D	10/02/09 12:40	YMH	0.04	GCMS2W	TO-15	
V2W1085-IC1085	2W25772.D	10/02/09 13:23	YMH	5.0	GCMS2W	TO-15	
V2W1085-IC1085	2W25773.D	10/02/09 14:07	YMH	10	GCMS2W	TO-15	
V2W1085-IC1085	2W25774.D	10/02/09 14:51	YMH	40	GCMS2W	TO-15	
V2W1085-IC1085	2W25775.D	10/02/09 15:34	YMH	0.5	GCMS2W	TO-15	
V2W1085-IC1085	2W25776.D	10/02/09 16:17	YMH	0.2	GCMS2W	TO-15	
V2W1085-IC1085	2W25777.D	10/02/09 17:44	YMH	20	GCMS2W	TO-15	
V2W1085-IC1085	2W25778.D	10/02/09 18:27	YMH	40	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	22.05	16.38	1.346	ok	1.346	1.286-1.406

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.92	ok	9.92	9.59-10.25	77994	ok	83442	50065-116819
1,4-Difluorobenzene	11.85	ok	11.85	11.52-12.18	339210	ok	361356	216814-505898
Chlorobenzene-D5	16.38	ok	16.38	16.05-16.71	154814	ok	165982	99589-232375

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.35	7.76	0.689	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.76	0.595	ok	0.595	0.535-0.655
Benzene	9.15	9.47	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.09	9.47	1.065	ok	1.066	1.006-1.126
Bromoform	14.44	13.72	1.052	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.18	7.76	0.668	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.72	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.72	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.93	7.76	0.635	ok	0.635	0.575-0.695
Chloroform	7.86	7.76	1.013	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.72	1.169	ok	1.170	1.110-1.230
Carbon tetrachloride	9.28	7.76	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.47	0.984	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.90	7.76	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.72	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.87	9.47	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.14	9.47	1.071	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.35	13.72	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.76	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.95	9.47	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.72	1.240	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.72	1.276	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.10	13.72	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.47	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.68	7.76	0.990	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.47	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.04	7.76	0.649	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.72	1.029	ok	1.030	0.970-1.090
Ethyl Acetate	7.76	7.76	1.000	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.72	1.183	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.07	7.76	0.524	ok	0.526	0.466-0.586
Freon 123	5.26	7.76	0.678	ok	0.677	0.617-0.737
Freon 123A	5.30	7.76	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.76	0.536	ok	0.536	0.476-0.596
Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.72	1.460	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.12	13.72	0.883	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.72	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.53	7.76	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.72	1.261	ok	1.261	1.201-1.321
Methylene chloride	6.04	7.76	0.778	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.21	7.76	0.929	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.92	9.47	1.153	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.76	0.888	ok	0.890	0.830-0.950
Methylmethacrylate	10.30	9.47	1.088	ok	1.088	1.028-1.148
Nonane	14.99	13.72	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.72	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.22	7.76	0.544	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.72	1.073	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.72	1.082	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.63	9.47	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.72	1.421	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.81	13.72	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.32	13.72	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.03	9.47	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.95	7.76	0.767	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.72	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.20	7.76	1.057	ok	1.059	0.999-1.119
Toluene	11.89	9.47	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.11	9.47	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.76	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.31	13.72	1.043	ok	1.043	0.983-1.103
o-Xylene	14.83	13.72	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	76719	ok	82191	49315-115067
1,4-Difluorobenzene	9.47	ok	9.46	9.13-9.79	347493	ok	366744	220046-513442
Chlorobenzene-D5	13.72	ok	13.71	13.38-14.04	164995	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.36	7.75	0.692	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.75	0.596	ok	0.595	0.535-0.655
Benzene	9.13	9.46	0.965	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.43	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.75	0.622	ok	0.621	0.561-0.681
Bromoethene	5.17	7.75	0.667	ok	0.667	0.607-0.727
n-Butane	4.64	7.75	0.599	ok	0.598	0.538-0.658
Benzyl Chloride	17.00	13.71	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.25	7.75	0.806	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.75	0.541	ok	0.540	0.480-0.600
Chloroethane	4.92	7.75	0.635	ok	0.635	0.575-0.695
Chloroform	7.84	7.75	1.012	ok	1.012	0.952-1.072
Chloromethane	4.38	7.75	0.565	ok	0.565	0.505-0.625
3-Chloropropene	6.08	7.75	0.785	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.75	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.75	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.75	0.765	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.71	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.48	7.75	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.19	9.46	1.077	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.75	0.550	ok	0.549	0.489-0.609
Dibromochloromethane	12.33	13.71	0.899	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.71	7.75	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.62	7.75	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.94	9.46	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.00	13.71	1.240	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.08	13.71	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.45	9.46	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.67	7.75	0.990	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.46	1.004	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.75	1.088	ok	1.087	1.027-1.147
Ethanol	5.04	7.75	0.650	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.77	7.75	1.003	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.71	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.75	0.799	ok	0.798	0.738-0.858
Freon 114	4.44	7.75	0.573	ok	0.572	0.512-0.632
Freon 115	4.08	7.75	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.75	0.677	ok	0.677	0.617-0.737
Freon 123A	5.29	7.75	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.75	0.537	ok	0.536	0.476-0.596
Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.66	7.75	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.14	13.71	0.885	ok	0.885	0.825-0.945
Isopropylbenzene	15.46	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.54	7.75	0.715	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.71	1.262	ok	1.261	1.201-1.321
Methylene chloride	6.02	7.75	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.23	7.75	0.933	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.93	9.46	1.155	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.90	7.75	0.890	ok	0.890	0.830-0.950
Methylmethacrylate	10.30	9.46	1.089	ok	1.088	1.028-1.148
Nonane	14.97	13.71	1.092	ok	1.092	1.032-1.152
Octane	12.78	13.71	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
Propane	4.22	7.75	0.545	ok	0.544	0.484-0.604
Propylene	4.21	7.75	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.71	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.70	7.75	1.123	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.62	9.46	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.71	1.422	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.31	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.01	9.46	1.058	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.96	7.75	0.769	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.23	7.75	1.062	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.10	9.46	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.75	0.705	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.75	0.585	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.75	0.903	ok	0.903	0.843-0.963
m,p-Xylene	14.31	13.71	1.044	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	78237	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	349998	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	141719	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.39	7.76	0.695	ok	0.692	0.632-0.752
1,3-Butadiene	4.61	7.76	0.594	ok	0.595	0.535-0.655
Benzene	9.14	9.46	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.09	9.46	1.067	ok	1.066	1.006-1.126
Bromoform	14.44	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.17	7.76	0.666	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.71	1.241	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.92	7.76	0.634	ok	0.635	0.575-0.695
Chloroform	7.84	7.76	1.010	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.76	1.195	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.76	0.888	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.56	13.71	0.916	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.22	9.46	1.080	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.34	13.71	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.62	7.76	0.982	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.94	9.46	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.71	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.09	13.71	1.247	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.69	7.76	0.991	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.46	1.004	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.06	7.76	0.652	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.79	7.76	1.004	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.71	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.08	7.76	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.76	0.677	ok	0.677	0.617-0.737
Freon 123A	5.30	7.76	0.683	ok	0.682	0.622-0.742
Freon 152A	4.15	7.76	0.535	ok	0.536	0.476-0.596
Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.16	13.71	0.887	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.56	7.76	0.716	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.71	1.262	ok	1.261	1.201-1.321
Methylene chloride	6.03	7.76	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.25	7.76	0.934	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.96	9.46	1.159	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.92	7.76	0.892	ok	0.890	0.830-0.950
Methylmethacrylate	10.31	9.46	1.090	ok	1.088	1.028-1.148
Nonane	14.98	13.71	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.71	0.933	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.23	7.76	0.545	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.71	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.62	9.46	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.51	13.71	1.423	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.32	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.98	7.76	0.771	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.24	7.76	1.062	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.10	9.46	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.02	7.76	0.905	ok	0.903	0.843-0.963
m,p-Xylene	14.31	13.71	1.044	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	85709	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	366776	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	141020	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.34	7.76	0.688	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.76	0.595	ok	0.595	0.535-0.655
Benzene	9.15	9.47	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.09	9.47	1.065	ok	1.066	1.006-1.126
Bromoform	14.44	13.72	1.052	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.18	7.76	0.668	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.72	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.72	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.93	7.76	0.635	ok	0.635	0.575-0.695
Chloroform	7.86	7.76	1.013	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.05	13.72	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.28	7.76	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.33	9.47	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.90	7.76	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.56	13.72	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.47	1.041	ok	1.042	0.982-1.102
1,4-Dioxane	10.14	9.47	1.071	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.35	13.72	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.76	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.95	9.47	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.02	13.72	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.52	13.72	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.10	13.72	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.47	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.67	7.76	0.988	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.47	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.03	7.76	0.648	ok	0.649	0.589-0.709
Ethylbenzene	14.13	13.72	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.75	7.76	0.999	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.72	1.183	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.08	7.76	0.526	ok	0.526	0.466-0.586
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Freon 123A	5.30	7.76	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.76	0.536	ok	0.536	0.476-0.596
Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.72	1.460	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.13	13.72	0.884	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.72	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.53	7.76	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.72	1.261	ok	1.261	1.201-1.321
Methylene chloride	6.04	7.76	0.778	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.20	7.76	0.928	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.92	9.47	1.153	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.76	0.888	ok	0.890	0.830-0.950
Methylmethacrylate	10.29	9.47	1.087	ok	1.088	1.028-1.148
Nonane	14.99	13.72	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.72	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.22	7.76	0.544	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.73	13.72	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.86	13.72	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.63	9.47	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.72	1.421	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.81	13.72	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.33	13.72	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.03	9.47	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.95	7.76	0.767	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.72	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.19	7.76	1.055	ok	1.059	0.999-1.119
Toluene	11.89	9.47	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.11	9.47	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.76	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.32	13.72	1.044	ok	1.043	0.983-1.103
o-Xylene	14.83	13.72	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	80158	ok	82191	49315-115067
1,4-Difluorobenzene	9.47	ok	9.46	9.13-9.79	369628	ok	366744	220046-513442
Chlorobenzene-D5	13.72	ok	13.71	13.38-14.04	186452	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.35	7.76	0.689	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.76	0.595	ok	0.595	0.535-0.655
Benzene	9.14	9.46	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.44	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.18	7.76	0.668	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.71	1.241	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.92	7.76	0.634	ok	0.635	0.575-0.695
Chloroform	7.85	7.76	1.012	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.76	1.195	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.76	0.888	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.71	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.15	9.46	1.073	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.34	13.71	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.76	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.95	9.46	1.158	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.71	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.09	13.71	1.247	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.67	7.76	0.988	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.46	1.004	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.03	7.76	0.648	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.75	7.76	0.999	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.71	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.08	7.76	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.76	0.677	ok	0.677	0.617-0.737
Freon 123A	5.29	7.76	0.682	ok	0.682	0.622-0.742
Freon 152A	4.16	7.76	0.536	ok	0.536	0.476-0.596
Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.12	13.71	0.884	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.52	7.76	0.711	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.71	1.262	ok	1.261	1.201-1.321
Methylene chloride	6.03	7.76	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.20	7.76	0.928	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.92	9.46	1.154	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.76	0.888	ok	0.890	0.830-0.950
Methylmethacrylate	10.29	9.46	1.088	ok	1.088	1.028-1.148
Nonane	14.98	13.71	1.093	ok	1.092	1.032-1.152
Octane	12.78	13.71	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.22	7.76	0.544	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.71	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.62	9.46	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.71	1.422	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.32	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.94	7.76	0.765	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.20	7.76	1.057	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.11	9.46	1.069	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.76	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.30	13.71	1.043	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	91268	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	403912	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	172529	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.38	7.75	0.694	ok	0.692	0.632-0.752
1,3-Butadiene	4.61	7.75	0.595	ok	0.595	0.535-0.655
Benzene	9.13	9.46	0.965	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.43	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.75	0.622	ok	0.621	0.561-0.681
Bromoethene	5.17	7.75	0.667	ok	0.667	0.607-0.727
Benzyl Chloride	17.00	13.71	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.75	0.808	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.75	0.541	ok	0.540	0.480-0.600
Chloroethane	4.92	7.75	0.635	ok	0.635	0.575-0.695
Chloroform	7.84	7.75	1.012	ok	1.012	0.952-1.072
Chloromethane	4.39	7.75	0.566	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.75	0.787	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.75	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.75	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.92	7.75	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.56	13.71	0.916	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.75	1.095	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.23	9.46	1.081	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.75	0.550	ok	0.549	0.489-0.609
Dibromochloromethane	12.34	13.71	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.75	0.867	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.75	0.985	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.94	9.46	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.71	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.09	13.71	1.247	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271
Di-Isopropyl ether	7.69	7.75	0.992	ok	0.990	0.930-1.050

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	9.49	9.46	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.75	1.088	ok	1.087	1.027-1.147
Ethylbenzene	14.13	13.71	1.031	ok	1.030	0.970-1.090
Freon 113	6.18	7.75	0.797	ok	0.798	0.738-0.858
Freon 114	4.44	7.75	0.573	ok	0.572	0.512-0.632
Freon 115	4.08	7.75	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.75	0.677	ok	0.677	0.617-0.737
Freon 123A	5.28	7.75	0.681	ok	0.682	0.622-0.742
Freon 152A	4.16	7.75	0.537	ok	0.536	0.476-0.596
Heptane	10.27	9.46	1.086	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.67	7.75	0.990	ok	0.989	0.929-1.049
2-Hexanone	12.15	13.71	0.886	ok	0.885	0.825-0.945
Isopropylbenzene	15.46	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.56	7.75	0.717	ok	0.715	0.655-0.775
Methyl Tert Butyl Ether	6.92	7.75	0.893	ok	0.890	0.830-0.950
Nonane	14.97	13.71	1.092	ok	1.092	1.032-1.152
Octane	12.79	13.71	0.933	ok	0.932	0.872-0.992
Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
Propylene	4.21	7.75	0.543	ok	0.543	0.483-0.603
1,1,1-Trichloroethane	8.71	7.75	1.124	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.63	9.46	1.229	ok	1.228	1.168-1.288
1,2,4-Trichlorobenzene	19.52	13.71	1.424	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.31	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.98	7.75	0.772	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.26	7.75	1.066	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.09	9.46	1.067	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.45	7.75	0.703	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.75	0.585	ok	0.584	0.524-0.644

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Vinyl Acetate	7.02	7.75	0.906	ok	0.903	0.843-0.963
m,p-Xylene	14.30	13.71	1.043	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	85786	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	379583	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	146326	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.40	7.75	0.697	ok	0.692	0.632-0.752
1,3-Butadiene	4.61	7.75	0.595	ok	0.595	0.535-0.655
Benzene	9.14	9.46	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.43	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.75	0.622	ok	0.621	0.561-0.681
Bromoethene	5.18	7.75	0.668	ok	0.667	0.607-0.727
Carbon disulfide	6.26	7.75	0.808	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.20	7.75	0.542	ok	0.540	0.480-0.600
Chloroethane	4.93	7.75	0.636	ok	0.635	0.575-0.695
Chloroform	7.84	7.75	1.012	ok	1.012	0.952-1.072
Chloromethane	4.39	7.75	0.566	ok	0.565	0.505-0.625
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.75	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.75	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.91	7.75	0.763	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.71	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.75	1.095	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
Dichlorodifluoromethane	4.26	7.75	0.550	ok	0.549	0.489-0.609
Dibromochloromethane	12.33	13.71	0.899	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.71	7.75	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.75	0.985	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.93	9.46	1.155	ok	1.156	1.096-1.216
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271
Di-Isopropyl ether	7.71	7.75	0.995	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.49	9.46	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.75	1.088	ok	1.087	1.027-1.147
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Freon 113	6.19	7.75	0.799	ok	0.798	0.738-0.858
Freon 114	4.44	7.75	0.573	ok	0.572	0.512-0.632
Freon 115	4.08	7.75	0.526	ok	0.526	0.466-0.586

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 123	5.25	7.75	0.677	ok	0.677	0.617-0.737
Freon 123A	5.29	7.75	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.75	0.537	ok	0.536	0.476-0.596
Heptane	10.27	9.46	1.086	ok	1.086	1.026-1.146
Hexane	7.67	7.75	0.990	ok	0.989	0.929-1.049
Isopropylbenzene	15.47	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.57	7.75	0.719	ok	0.715	0.655-0.775
Methyl Tert Butyl Ether	6.94	7.75	0.895	ok	0.890	0.830-0.950
Nonane	14.98	13.71	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.71	0.933	ok	0.932	0.872-0.992
Propylene	4.21	7.75	0.543	ok	0.543	0.483-0.603
1,1,1-Trichloroethane	8.71	7.75	1.124	ok	1.123	1.063-1.183
1,1,2-Trichloroethane	11.63	9.46	1.229	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.99	7.75	0.773	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.09	9.46	1.067	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.75	0.705	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.75	0.585	ok	0.584	0.524-0.644
m,p-Xylene	14.31	13.71	1.044	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	73323	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	315332	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	125469	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	85556	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	372344	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	147170	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	74121	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	328473	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	136851	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.35	7.77	0.689	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.77	0.595	ok	0.595	0.535-0.655
Benzene	9.15	9.48	0.965	ok	0.966	0.906-1.026
Bromodichloromethane	10.10	9.48	1.065	ok	1.066	1.006-1.126
Bromoform	14.46	13.73	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.77	0.620	ok	0.621	0.561-0.681
Bromoethene	5.18	7.77	0.667	ok	0.667	0.607-0.727
n-Butane	4.64	7.77	0.597	ok	0.598	0.538-0.658
Benzyl Chloride	17.03	13.73	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.77	0.806	ok	0.807	0.747-0.867
Chlorobenzene	13.77	13.73	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.77	0.539	ok	0.540	0.480-0.600
Chloroethane	4.93	7.77	0.634	ok	0.635	0.575-0.695
Chloroform	7.87	7.77	1.013	ok	1.012	0.952-1.072
Chloromethane	4.38	7.77	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.11	7.77	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.06	13.73	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.28	7.77	1.194	ok	1.195	1.135-1.255
Cyclohexane	9.33	9.48	0.984	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.91	7.77	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.77	0.763	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.57	13.73	0.916	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.51	7.77	1.095	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.87	9.48	1.041	ok	1.042	0.982-1.102
1,4-Dioxane	10.15	9.48	1.071	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.77	0.548	ok	0.549	0.489-0.609
Dibromochloromethane	12.36	13.73	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.77	0.865	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.64	7.77	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.96	9.48	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.03	13.73	1.240	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.53	13.73	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.11	13.73	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.47	9.48	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.68	7.77	0.988	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.51	9.48	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.44	7.77	1.086	ok	1.087	1.027-1.147
Ethanol	5.04	7.77	0.649	ok	0.649	0.589-0.709
Ethylbenzene	14.14	13.73	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.76	7.77	0.999	ok	1.000	0.940-1.060
4-Ethyltoluene	16.25	13.73	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.77	0.797	ok	0.798	0.738-0.858
Freon 114	4.44	7.77	0.571	ok	0.572	0.512-0.632
Freon 115	4.08	7.77	0.525	ok	0.526	0.466-0.586
Freon 123	5.26	7.77	0.677	ok	0.677	0.617-0.737
Freon 123A	5.30	7.77	0.682	ok	0.682	0.622-0.742
Freon 152A	4.16	7.77	0.535	ok	0.536	0.476-0.596
Heptane	10.29	9.48	1.085	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.73	1.459	ok	1.460	1.400-1.520
Hexane	7.67	7.77	0.987	ok	0.989	0.929-1.049
2-Hexanone	12.14	13.73	0.884	ok	0.885	0.825-0.945
Isopropylbenzene	15.48	13.73	1.127	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.54	7.77	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.32	13.73	1.261	ok	1.261	1.201-1.321
Methylene chloride	6.04	7.77	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.21	7.77	0.928	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.93	9.48	1.153	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.77	0.887	ok	0.890	0.830-0.950
Methylmethacrylate	10.31	9.48	1.088	ok	1.088	1.028-1.148
Nonane	14.99	13.73	1.092	ok	1.092	1.032-1.152
Octane	12.80	13.73	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.77	0.730	ok	0.731	0.671-0.791
Propane	4.22	7.77	0.543	ok	0.544	0.484-0.604
Propylene	4.21	7.77	0.542	ok	0.543	0.483-0.603
Styrene	14.74	13.73	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.72	7.77	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.88	13.73	1.084	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.64	9.48	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.51	13.73	1.421	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.83	13.73	1.226	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.34	13.73	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.03	9.48	1.058	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.96	7.77	0.767	ok	0.769	0.709-0.829
Tetrachloroethylene	13.04	13.73	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.19	7.77	1.054	ok	1.059	0.999-1.119
Toluene	11.89	9.48	1.254	ok	1.256	1.196-1.316
Trichloroethylene	10.12	9.48	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.77	0.703	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.77	0.583	ok	0.584	0.524-0.644
Vinyl Acetate	7.01	7.77	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.33	13.73	1.044	ok	1.043	0.983-1.103
o-Xylene	14.84	13.73	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.68	7.77	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.29	9.48	1.085	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.77	ok	7.76	7.43-8.09	78769	ok	82191	49315-115067
1,4-Difluorobenzene	9.48	ok	9.46	9.13-9.79	373529	ok	366744	220046-513442
Chlorobenzene-D5	13.73	ok	13.71	13.38-14.04	216753	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.65	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	98336	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	430117	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	163974	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.65	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	81662	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	355221	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	139143	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	87655	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	393462	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	162462	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	73371	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	348551	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	149231	ok	156721	94033-219409

Volatile Surrogate Recovery Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Method: TO-15 **Matrix:** AIR

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JA28238-1	2W25726.D	93.0
JA28238-2	2W25727.D	90.0
JA28238-3	2W25728.D	84.0
JA28238-4	2W25747.D	81.0
JA28238-5	2W25730.D	93.0
JA28238-6	2W25731.D	93.0
JA28238-7	2W25787.D	93.0
JA28238-8	2W25788.D	93.0
JA28238-9	2W25789.D	101.0
JA28238-10	2W25799.D	101.0
JA28238-10	2W25790.D	102.0
JA28238-11	2W25800.D	103.0
JA28238-11	2W25791.D	99.0
JA28238-12	2W25801.D	97.0
JA28238-12	2W25792.D	101.0
JA28238-13	2W25802.D	104.0
JA28238-13	2W25793.D	107.0
JA28271-5DUP	2W25722.D	90.0
JA28598-2DUP	2W25751.D	83.0
JA28739-1DUP	2W25795.D	100.0
V2W1073-SCC	2W25443.D	87.0
V2W1073-SCC	2W25425.D	78.0
V2W1075-SCC	2W25482.D	70.0
V2W1083-BS	2W25710.D	102.0
V2W1083-BSD	2W25711.D	102.0
V2W1083-MB	2W25712.D	70.0
V2W1084-BS	2W25736.D	100.0
V2W1084-BSD	2W25737.D	100.0
V2W1084-MB	2W25738.D	70.0
V2W1086-BS	2W25784.D	115.0
V2W1086-BSD	2W25785.D	115.0
V2W1086-MB	2W25786.D	82.0
V3W524-SCC	3W12870A.D	86.0
V2W1073-BS	2W25420.D	113.0
V2W1073-BSD	2W25421.D	114.0
V2W1073-MB	2W25422.D	78.0
V2W1075-BS	2W25473.D	108.0
V2W1075-BSD	2W25474.D	107.0
V2W1075-MB	2W25475.D	74.0
V3W524-BS	3W12868.D	104.0

Volatile Surrogate Recovery Summary

Job Number: JA28238
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Method: TO-15 **Matrix:** AIR

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
V3W524-BSD	3W12869.D	102.0
V3W524-MB	3W12870.D	86.0

Surrogate Compounds	Recovery Limits
S1 = 4-Bromofluorobenzene	65-128%

Initial Calibration Summary

Job Number: JA28238 **Sample:** V2W1070-ICC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25356.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Response Factor Report MS2W

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Calibration Files
0.04=2W25363.D 0.1 =2W25362.D 0.2 =2W25359.D 0.5 =2W25357.D
5.0 =2W25361.D 10. =2W25356.D 20. =2W25360.D 40. =2W25364.D

Compound	0.04	0.1	0.2	0.5	5.0	10.	20.	40.	Avg	%RSD
1) I BROMOCHLOROMETHANE	----------ISTD----------									
2) FREON 115	1.009	1.155	0.971	1.128	0.946	1.063	0.932	1.029		8.59
3) DICHLORODIFL	1.479	1.744	1.467	1.698	1.478	1.620	1.392	1.554		8.57
4) FREON 152A	1.003	1.190	0.983	1.177	1.082	1.039	0.990	1.066		8.14
5) CHLORODIFLUO		0.470	0.411	0.441	0.414	0.392	0.370	0.416		8.48
6) PROPYLENE		2.078	1.743	1.838	1.758	1.622	1.476	1.752		11.61
7) PROPANE		1.010	0.683	0.655	0.625	0.583	0.533	0.682		24.87
8) FREON 114	4.061	4.779	4.017	4.637	4.079	3.782	3.326	4.097		12.03
9) CHLOROMETHAN		0.690	0.558	0.596	0.577	0.558	0.542	0.587		9.18
10) VINYL CHLORI	1.712	2.019	1.746	1.998	1.857	1.790	1.712	1.833		7.07
11) 1,3-BUTADIEN	1.257	1.558	1.352	1.542	1.449	1.366	1.301	1.404		8.29
12) n-BUTANE	3.445	3.467	2.888	3.044	3.018	2.788	2.491	3.020		11.56
13) BROMOMETHANE	1.406	1.589	1.396	1.701	1.435	1.402	1.348	1.468		8.70
14) CHLOROETHANE	0.778	1.038	0.932	1.086	1.007	0.983	0.960	0.969		10.12
15) FREON 123	3.093	2.990	3.346	3.274	3.636	3.204	3.018	2.775	3.167	8.25
16) FREON 123A	1.650	1.885	1.722	1.939	1.673	1.634	1.606	1.730		7.53
17) TRICHLOROFLU	3.991	3.350	3.745	3.281	3.858	3.336	3.204	3.026	3.474	9.93
18) ISOPROPYL AL		2.975	2.772	2.540	2.487	2.391	2.181	2.558		10.99
19) ACETONE		0.845	0.752	0.713	0.697	0.682	0.681	0.728		8.63
20) PENTANE	2.092	2.443	2.046	2.134	2.005	1.858	1.659	2.034		11.94
21) TVHC as EQUI		1.239	1.122	1.274	1.198	1.132	1.039	1.167	E1	7.40
22) ETHYL ETHER		0.656	0.648	0.749	0.710	0.704	0.713	0.697		5.46
23) IODOMETHANE	3.231	3.141	3.582	3.231	4.117	3.435	3.381	3.226	3.418	9.25
24) 1,1-DICHLORO	1.402	1.518	1.316	1.540	1.306	1.281	1.243	1.372		8.56
25) CARBON DISUL	5.054	4.601	5.175	4.572	5.174	4.533	4.339	4.024	4.684	8.90
26) ETHANOL		0.864	0.547	0.537	0.555	0.542	0.540	0.598		21.88
27) BROMOETHENE	1.205	1.387	1.249	1.622	1.360	1.332	1.290	1.349		10.08
28) METHYLENE CH		1.778	1.411	1.396	1.261	1.228	1.198	1.379		15.56
29) 3-CHLOROPROP		0.684	0.618	0.766	0.707	0.699	0.690	0.694		6.81
30) FREON 113	2.286	2.094	2.331	2.070	2.445	2.081	2.041	1.968	2.164	7.73
31) TRANS-1,2-DI	1.569	1.775	1.565	1.809	1.595	1.559	1.492	1.623		7.38
32) TERTIARY BUT	2.872	2.753	3.091	3.107	2.972	2.581		2.896		7.05
33) METHYL TERTI	3.851	3.682	4.046	3.993	4.008	3.859	3.681	3.505	3.828	5.00
34) TETRAHYDROFU	1.799	1.989	1.937	1.988	2.080	1.998	1.963	1.965		4.36
35) HEXANE	2.500	2.176	2.717	2.446	2.701	2.506	2.363	2.054	2.433	9.54
36) VINYL ACETAT		0.257	0.298	0.338	0.340	0.333	0.353	0.320		11.29
37) 1,1-DICHLORO	3.004	2.879	3.402	3.122	3.367	3.098	2.889	2.637	3.050	8.40
38) METHYL ETHYL		0.705	0.681	0.760	0.748	0.747	0.765	0.734		4.59
39) cis-1,2-DICH	1.532	1.664	1.544	1.750	1.583	1.552	1.500	1.589		5.52
40) ETHYL ACETAT		0.476	0.498	0.470	0.470	0.446	0.417	0.463		6.01
41) CHLOROFORM	2.895	2.650	3.149	2.889	3.222	2.941	2.820	2.654	2.902	7.09
42) 2,4-DIMETHYL	2.832	2.539	3.023	2.930	3.204	2.972	2.807	2.517	2.853	8.22
43) 1,1,1-TRICHL	2.950	2.786	3.178	2.990	3.314	3.019	2.876	2.660	2.972	7.00
44) CARBON TETRA	3.153	2.826	3.320	3.091	3.488	3.111	2.971	2.732	3.086	8.01
45) 1,2-DICHLORO	1.873	2.241	2.078	2.259	2.169	2.056	1.911	2.084		7.27

Initial Calibration Summary

Job Number: JA28238 **Sample:** V2W1070-ICC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25356.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

46) I 1,4-DIFLUOROBENZENE	----------ISTD----------									
47) BENZENE	1.154	1.034	1.134	1.040	1.132	1.002	0.932	0.829	1.032	10.84
48) CYCLOHEXANE		0.507	0.538	0.462	0.504	0.431	0.414	0.383	0.463	12.15
49) 2,3-DIMETHYL		0.201	0.217	0.207	0.245	0.221	0.214	0.200	0.215	7.24
50) TRICHLOROETH	0.376	0.368	0.437	0.403	0.430	0.367	0.339	0.286	0.376	13.15
51) 1,2-DICHLORO		0.357	0.403	0.386	0.436	0.394	0.373	0.341	0.384	8.16
52) BROMODICHLOR	0.581	0.575	0.671	0.637	0.720	0.633	0.586	0.502	0.613	10.93
53) 2,2,4-TRIMET	1.475	1.366	1.728	1.626	1.604	1.396	1.218	0.928	1.418	18.08
54) 1,4-DIOXANE		0.210	0.192	0.210	0.203	0.181	0.172	0.148	0.188	11.96
55) METHYL METHA		0.292	0.287	0.297	0.318	0.306	0.301	0.295	0.299	3.37
56) HEPTANE	0.652	0.606	0.724	0.648	0.691	0.627	0.568	0.481	0.625	12.06
57) TVHC as EQUI		2.367	2.765	2.542	2.864	2.549	2.388	2.128	2.515	9.93
58) METHYL ISOBU			0.829	0.817	0.761	0.719	0.645	0.555	0.721	14.66
59) cis-1,3-DICH	0.450	0.458	0.527	0.507	0.572	0.531	0.499	0.456	0.500	8.67
60) TOLUENE	0.547	0.610	0.674	0.643	0.722	0.651	0.613	0.555	0.627	9.39
61) trans-1,3-DI		0.438	0.448	0.453	0.524	0.498	0.482	0.458	0.472	6.58
62) 1,1,2-TRICHL		0.297	0.317	0.300	0.343	0.313	0.293	0.273	0.305	7.26
63) I CHLOROBENZENE-D5	----------ISTD----------									
64) 2-HEXANONE			0.922	0.855	0.686	0.626	0.607	0.549	0.708	20.97
65) TETRACHLOROE	0.813	0.827	0.895	0.840	0.898	0.724	0.685	0.608	0.786	13.19
66) DIBROMOCHLOR	1.037	1.082	1.149	1.110	1.305	1.097	1.042	0.937	1.095	9.69
67) 1,2-DIBROMOE		1.028	1.012	0.991	1.067	0.917	0.878	0.806	0.957	9.73
68) OCTANE			1.522	1.529	1.655	1.459	1.254	1.015	1.406	16.52
69) 1,1,1,2-TETR		0.699	0.786	0.749	0.862	0.735	0.695	0.616	0.735	10.55
70) CHLOROBENZEN	1.485	1.510	1.552	1.437	1.494	1.249	1.171	1.013	1.364	14.31
71) ETHYLBENZENE	2.280	2.435	2.540	2.429	2.648	2.253	2.033	1.721	2.292	13.01
72) m,p-XYLENE	0.746	0.916	0.898	0.883	0.957	0.816	0.753	0.657	0.828	12.39
73) o-XYLENE	0.744	0.785	0.818	0.829	0.900	0.767	0.719	0.629	0.774	10.46
74) STYRENE		1.010	0.997	1.036	1.325	1.187	1.142	1.040	1.105	10.83
75) NONANE	1.073	1.028	1.229	1.242	1.404	1.263	1.104	0.861	1.150	14.64
76) BROMOFORM		0.821	0.790	0.800	1.005	0.876	0.860	0.800	0.850	8.90
77) 4-BROMOFLUOR	0.892	0.909	0.895	0.954	1.080	1.111	1.140	1.170	1.019	11.59
78) 1,1,2,2-TETR	0.949	1.075	0.971	0.940	1.058	0.919	0.846	0.702	0.932	12.74
79) ISOPROPYLBEN	1.865	2.142	2.110	2.117	2.411	2.070	1.898	1.600	2.027	11.84
80) 2-CHLOROTOLU		0.469	0.431	0.427	0.536	0.468	0.457	0.421	0.459	8.63
81) n-PROPYLBENZ		0.475	0.433	0.447	0.573	0.510	0.501	0.466	0.486	9.67
82) 4-ETHYLTOLUE		1.654	1.430	1.465	1.842	1.672	1.572	1.362	1.571	10.55
83) 1,3,5-TRIMET	1.210	1.395	1.212	1.323	1.580	1.368	1.309	1.140	1.317	10.43
84) TERT-BUTYLBE			0.299	0.304	0.384	0.343	0.341	0.309	0.330	9.80
85) 1,2,4-TRIMET	0.985	1.197	1.000	1.105	1.328	1.186	1.110	0.923	1.104	12.03
86) m-DICHLOROBE			0.644	0.599	0.730	0.662	0.669	0.643	0.658	6.53
87) BENZYL CHLOR			0.683	0.658	0.702	0.685	0.717	0.692	0.690	2.86
88) p-DICHLOROBE			0.645	0.583	0.629	0.585	0.610	0.591	0.607	4.16
89) SEC-BUTYLBEN			0.281	0.320	0.406	0.366	0.368	0.354	0.349	12.43
90) p-ISOPROPYLT			0.241	0.271	0.378	0.350	0.359	0.347	0.324	16.89
91) o-DICHLOROBE			0.528	0.496	0.589	0.539	0.558	0.545	0.542	5.69
92) n-BUTYLBENZE			0.171	0.178	0.236	0.228	0.245	0.247	0.218	15.65
93) HEXACHLOROBU			0.273	0.288	0.180	0.147	0.136	0.123	0.191	37.57
94) 1,2,4-TRICHL			0.175	0.163	0.104	0.093	0.101	0.103	0.123	29.37
95) CHLOROBENZENE-D5(A)	----------ISTD----------									
96) NAPHTHALENE									0.000	-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

M2W1070.M Sun Sep 06 15:02:33 2009 MS2W

5.9.1

5

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1071-ICV1070
Account: HLANJPR Mactec **Lab FileID:** 2W25367.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	107	0.00	9.95
2		FREON 115	1.029	0.944	8.3	107	0.00	5.01
3		DICHLORODIFLUOROMETHANE	1.554	1.410	9.3	102	0.01	5.02
4		FREON 152A	1.066	1.020	4.3	101	0.00	5.14
5		CHLORODIFLUOROMETHANE	0.416	0.386	7.2	100	0.01	5.18
6		PROPYLENE	1.752	1.572	10.3	96	0.01	5.23
7		PROPANE	0.682	0.560	17.9	96	0.00	5.25
8		FREON 114	4.097	4.000	2.4	105	0.00	5.56
9		CHLOROMETHANE	0.587	0.538	8.3	100	0.01	5.47
10		VINYL CHLORIDE	1.833	1.808	1.4	104	0.00	5.70
11		1,3-BUTADIENE	1.404	1.366	2.7	101	0.01	5.84
12		n-BUTANE	3.020	2.749	9.0	97	0.00	5.89
13		BROMOMETHANE	1.468	1.491	-1.6	111	0.01	6.12
14		CHLOROETHANE	0.969	0.987	-1.9	105	0.01	6.29
15		FREON 123	3.167	3.174	-0.2	106	0.00	6.76
16		FREON 123A	1.730	1.718	0.7	110	0.00	6.81
17		TRICHLOROFLUOROMETHANE	3.474	3.358	3.3	108	0.00	7.06
18		ISOPROPYL ALCOHOL	2.558	2.513	1.8	108	0.01	7.09
19		ACETONE	0.728	0.684	6.0	105	0.01	6.87
20		PENTANE	2.034	1.842	9.4	98	0.00	7.40
21	H	TVHC as EQUIV PENTANE	11.672	11.141	4.5	99	0.00	7.40
22		ETHYL ETHER	0.697	0.704	-1.0	106	0.00	7.40
23		IODOMETHANE	3.418	3.567	-4.4	111	0.00	7.64
24		1,1-DICHLOROETHYLENE	1.372	1.324	3.5	108	0.00	7.70
25		CARBON DISULFIDE	4.684	4.533	3.2	107	0.00	8.15
26		ETHANOL	0.598	0.545	8.9	105	0.01	6.40
27		BROMOETHENE	1.349	1.425	-5.6	112	0.00	6.64
28		METHYLENE CHLORIDE	1.379	1.233	10.6	105	0.00	7.79
29		3-CHLOROPROPENE	0.694	0.686	1.2	104	0.00	7.92
30		FREON 113	2.164	2.116	2.2	109	0.00	8.06
31		TRANS-1,2-DICHLOROETHYLEN	1.623	1.594	1.8	107	0.00	8.74
32		TERTIARY BUTYL ALCOHOL	2.896	2.919	-0.8	105	0.00	7.70
33		METHYL TERTIARY BUTYL ETH	3.828	3.825	0.1	106	0.00	8.97
34		TETRAHYDROFURAN	1.965	1.955	0.5	100	0.00	10.48
35		HEXANE	2.433	2.352	3.3	100	0.00	9.98
36		VINYL ACETATE	0.320	0.331	-3.4	104	0.00	9.04
37		1,1-DICHLOROETHANE	3.050	2.897	5.0	100	0.00	8.94
38		METHYL ETHYL KETONE	0.734	0.760	-3.5	109	0.00	9.31
39		cis-1,2-DICHLOROETHYLENE	1.589	1.568	1.3	106	0.00	9.78
40		ETHYL ACETATE	0.463	0.459	0.9	104	0.00	9.95
41		CHLOROFORM	2.902	2.844	2.0	103	0.00	10.08
42		2,4-DIMETHYLPENTANE	2.853	2.794	2.1	100	0.00	10.87

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1071-ICV1070
Account: HLANJPR Mactec **Lab FileID:** 2W25367.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.972	2.899	2.5	103	0.00	11.10
44		CARBON TETRACHLORIDE	3.086	3.045	1.3	105	0.00	11.72
45		1,2-DICHLOROETHANE	2.084	1.993	4.4	98	0.00	10.83
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	107	0.00	11.89
47		BENZENE	1.032	0.953	7.7	102	0.00	11.57
48		CYCLOHEXANE	0.463	0.421	9.1	105	0.00	11.85
49		2,3-DIMETHYLPENTANE	0.215	0.211	1.9	103	0.00	12.07
50		TRICHLOROETHYLENE	0.376	0.354	5.9	104	0.00	12.62
51		1,2-DICHLOROPROPANE	0.384	0.370	3.6	101	0.00	12.39
52		BROMODICHLOROMETHANE	0.613	0.602	1.8	102	0.00	12.58
53		2,2,4-TRIMETHYLPENTANE	1.418	1.300	8.3	100	0.00	12.65
54		1,4-DIOXANE	0.188	0.187	0.5	111	0.00	12.62
55		METHYL METHACRYLATE	0.299	0.306	-2.3	108	0.00	12.78
56		HEPTANE	0.625	0.570	8.8	98	0.00	12.90
57	H	TVHC as EQUIV HEPTANE	2.515	2.395	4.8	101	0.00	12.90
58		METHYL ISOBUTYL KETONE	0.721	0.689	4.4	103	0.00	13.52
59		cis-1,3-DICHLOROPROPENE	0.500	0.510	-2.0	103	0.00	13.49
60		TOLUENE	0.627	0.629	-0.3	104	0.00	14.53
61		trans-1,3-DICHLOROPROPENE	0.472	0.488	-3.4	105	0.00	14.03
62		1,1,2-TRICHLOROETHANE	0.305	0.300	1.6	103	0.00	14.23
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00	16.41
64		2-HEXANONE	0.708	0.674	4.8	112	0.00	14.77
65		TETRACHLOROETHYLENE	0.786	0.745	5.2	107	0.00	15.73
66		DIBROMOCHLOROMETHANE	1.095	1.115	-1.8	106	0.00	14.99
67		1,2-DIBROMOETHANE	0.957	0.954	0.3	108	0.00	15.25
68		OCTANE	1.406	1.359	3.3	97	0.00	15.52
69		1,1,1,2-TETRACHLOROETHANE	0.735	0.740	-0.7	105	0.00	16.44
70		CHLOROBENZENE	1.364	1.287	5.6	107	0.00	16.46
71		ETHYLBENZENE	2.292	2.270	1.0	105	0.00	16.85
72		m,p-XYLENE	0.828	0.837	-1.1	107	0.00	17.05
73		o-XYLENE	0.774	0.790	-2.1	107	0.00	17.56
74		STYRENE	1.105	1.238	-12.0	109	0.00	17.44
75		NONANE	1.150	1.195	-3.9	98	0.00	17.75
76		BROMOFORM	0.850	0.934	-9.9	111	0.00	17.17
77	S	4-BROMOFLUOROBENZENE	1.019	1.138	-11.7	107	0.00	18.05
78		1,1,2,2-TETRACHLOROETHANE	0.932	0.972	-4.3	110	0.00	17.55
79		ISOPROPYLBENZENE	2.027	2.141	-5.6	108	0.00	18.19
80		2-CHLOROTOLUENE	0.459	0.496	-8.1	110	0.00	18.71
81		n-PROPYLBENZENE	0.486	0.544	-11.9	111	0.00	18.73
82		4-ETHYLTOLUENE	1.571	1.807	-15.0	112	0.00	18.89
83		1,3,5-TRIMETHYLBENZENE	1.317	1.475	-12.0	112	0.00	18.97
84		TERT-BUTYLBENZENE	0.330	0.368	-11.5	112	0.00	19.42
85		1,2,4-TRIMETHYLBENZENE	1.104	1.295	-17.3	114	0.00	19.42
86		m-DICHLOROBENZENE	0.658	0.762	-15.8	120	0.00	19.61
87		BENZYL CHLORIDE	0.690	0.831	-20.4	126	0.00	19.58
88		p-DICHLOROBENZENE	0.607	0.690	-13.7	123	0.00	19.68
89		SEC-BUTYLBENZENE	0.349	0.402	-15.2	114	0.00	19.72
90		p-ISOPROPYLTOLUENE	0.324	0.399	-23.1	119	0.00	19.88
91		o-DICHLOROBENZENE	0.542	0.640	-18.1	123	0.00	20.06
92		n-BUTYLBENZENE	0.218	0.274	-25.7	125	0.00	20.34
93		HEXACHLOROBUTADIENE	0.191	0.200	-4.7	141	0.00	22.43
94		1,2,4-TRICHLOROBENZENE	0.123	0.138	-12.2	155	0.00	21.94
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	104	0.00	16.41
96		NAPHTHALENE		----------NA----------				

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1071-ICV1070
Account: HLANJPR Mactec **Lab FileID:** 2W25367.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25356.D  M2W1070.M        Mon Sep 14 09:07:00 2009   MS2W
```

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1073-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25419.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2W CORE\v2w1073\2w25419.d Vial: 2
Acq On : 9 Sep 2009 10:34 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	124	0.00	9.95
2		FREON 115	1.029	0.967	6.0	127	0.00	5.02
3		DICHLORODIFLUOROMETHANE	1.554	1.458	6.2	123	0.01	5.02
4		FREON 152A	1.066	0.943	11.5	108	0.00	5.14
5		CHLORODIFLUOROMETHANE	0.416	0.367	11.8	110	0.01	5.18
6		PROPYLENE	1.752	1.491	14.9	105	0.01	5.23
7		PROPANE	0.682	0.529	22.4	105	0.00	5.25
8		FREON 114	4.097	3.759	8.2	115	0.00	5.56
9		CHLOROMETHANE	0.587	0.509	13.3	110	0.01	5.47
10		VINYL CHLORIDE	1.833	1.740	5.1	117	0.00	5.70
11		1,3-BUTADIENE	1.404	1.303	7.2	112	0.00	5.83
12		n-BUTANE	3.020	2.619	13.3	108	0.00	5.89
13		BROMOMETHANE	1.468	1.452	1.1	126	0.01	6.12
14		CHLOROETHANE	0.969	0.938	3.2	116	0.00	6.29
15		FREON 123	3.167	2.985	5.7	116	0.00	6.76
16		FREON 123A	1.730	1.619	6.4	120	0.00	6.81
17		TRICHLOROFLUOROMETHANE	3.474	3.250	6.4	121	0.00	7.06
18		ISOPROPYL ALCOHOL	2.558	2.443	4.5	122	0.01	7.09
19		ACETONE	0.728	0.668	8.2	119	0.00	6.86
20		PENTANE	2.034	1.749	14.0	108	0.00	7.40
21	H	TVHC as EQUIV PENTANE	11.672	10.842	7.1	113	0.00	7.40
22		ETHYL ETHER	0.697	0.676	3.0	118	0.00	7.40
23		IODOMETHANE	3.418	3.442	-0.7	125	0.00	7.63
24		1,1-DICHLOROETHYLENE	1.372	1.275	7.1	121	0.00	7.70
25		CARBON DISULFIDE	4.684	4.385	6.4	120	0.00	8.15
26		ETHANOL	0.598	0.524	12.4	117	0.00	6.39
27		BROMOETHENE	1.349	1.376	-2.0	126	0.00	6.64
28		METHYLENE CHLORIDE	1.379	1.186	14.0	117	0.00	7.79
29		3-CHLOROPROPENE	0.694	0.649	6.5	114	0.00	7.92
30		FREON 113	2.164	2.043	5.6	122	0.00	8.06
31		TRANS-1,2-DICHLOROETHYLEN	1.623	1.522	6.2	119	0.00	8.74
32		TERTIARY BUTYL ALCOHOL	2.896	2.851	1.6	119	0.00	7.69
33		METHYL TERTIARY BUTYL ETH	3.828	3.694	3.5	119	0.00	8.97
34		TETRAHYDROFURAN	1.965	1.864	5.1	111	0.00	10.48
35		HEXANE	2.433	2.216	8.9	110	0.00	9.98
36		VINYL ACETATE	0.320	0.319	0.3	117	0.00	9.04
37		1,1-DICHLOROETHANE	3.050	2.733	10.4	110	0.00	8.94
38		METHYL ETHYL KETONE	0.734	0.745	-1.5	124	0.00	9.30
39		cis-1,2-DICHLOROETHYLENE	1.589	1.475	7.2	116	0.00	9.77
40		ETHYL ACETATE	0.463	0.435	6.0	115	0.00	9.95
41		CHLOROFORM	2.902	2.721	6.2	115	0.00	10.07
42		2,4-DIMETHYLPENTANE	2.853	2.639	7.5	110	0.00	10.87

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1073-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25419.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.972	2.755	7.3	113	0.00	11.09
44		CARBON TETRACHLORIDE	3.086	2.917	5.5	117	0.00	11.72
45		1,2-DICHLOROETHANE	2.084	1.892	9.2	108	0.00	10.82
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	125	0.00	11.88
47		BENZENE	1.032	0.894	13.4	111	0.00	11.56
48		CYCLOHEXANE	0.463	0.401	13.4	116	0.00	11.85
49		2,3-DIMETHYLPENTANE	0.215	0.200	7.0	113	0.00	12.06
50		TRICHLOROETHYLENE	0.376	0.332	11.7	113	0.00	12.62
51		1,2-DICHLOROPROPANE	0.384	0.346	9.9	109	0.00	12.39
52		BROMODICHLOROMETHANE	0.613	0.569	7.2	112	0.00	12.58
53		2,2,4-TRIMETHYLPENTANE	1.418	1.208	14.8	108	0.00	12.65
54		1,4-DIOXANE	0.188	0.182	3.2	125	0.00	12.62
55		METHYL METHACRYLATE	0.299	0.299	0.0	122	0.00	12.78
56		HEPTANE	0.625	0.528	15.5	105	0.00	12.89
57	H	TVHC as EQUIV HEPTANE	2.515	2.250	10.5	110	0.00	12.89
58		METHYL ISOBUTYL KETONE	0.721	0.662	8.2	115	0.00	13.51
59		cis-1,3-DICHLOROPROPENE	0.500	0.475	5.0	111	0.00	13.49
60		TOLUENE	0.627	0.591	5.7	113	0.00	14.52
61		trans-1,3-DICHLOROPROPENE	0.472	0.455	3.6	114	0.00	14.02
62		1,1,2-TRICHLOROETHANE	0.305	0.282	7.5	112	0.00	14.22
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	120	0.00	16.41
64		2-HEXANONE	0.708	0.659	6.9	126	0.00	14.77
65		TETRACHLOROETHYLENE	0.786	0.707	10.1	117	0.00	15.73
66		DIBROMOCHLOROMETHANE	1.095	1.061	3.1	116	0.00	14.98
67		1,2-DIBROMOETHANE	0.957	0.896	6.4	117	0.00	15.25
68		OCTANE	1.406	1.258	10.5	103	0.00	15.52
69		1,1,1,2-TETRACHLOROETHANE	0.735	0.695	5.4	113	0.00	16.43
70		CHLOROBENZENE	1.364	1.208	11.4	116	0.00	16.46
71		ETHYLBENZENE	2.292	2.137	6.8	113	0.00	16.85
72		m,p-XYLENE	0.828	0.788	4.8	116	0.00	17.04
73		o-XYLENE	0.774	0.744	3.9	116	0.00	17.56
74		STYRENE	1.105	1.165	-5.4	117	0.00	17.44
75		NONANE	1.150	1.105	3.9	105	0.00	17.75
76		BROMOFORM	0.850	0.892	-4.9	122	0.00	17.16
77	S	4-BROMOFLUOROBENZENE	1.019	1.158	-13.6	125	0.00	18.05
78		1,1,2,2-TETRACHLOROETHANE	0.932	0.933	-0.1	121	0.00	17.55
79		ISOPROPYLBENZENE	2.027	2.015	0.6	116	0.00	18.19
80		2-CHLOROTOLUENE	0.459	0.466	-1.5	119	0.00	18.71
81		n-PROPYLBENZENE	0.486	0.516	-6.2	121	0.00	18.73
82		4-ETHYLTOLUENE	1.571	1.684	-7.2	120	0.00	18.88
83		1,3,5-TRIMETHYLBENZENE	1.317	1.422	-8.0	124	0.00	18.96
84		TERT-BUTYLBENZENE	0.330	0.351	-6.4	122	0.00	19.41
85		1,2,4-TRIMETHYLBENZENE	1.104	1.232	-11.6	124	0.00	19.42
86		m-DICHLOROBENZENE	0.658	0.722	-9.7	131	0.00	19.60
87		BENZYL CHLORIDE	0.690	0.791	-14.6	138	0.00	19.58
88		p-DICHLOROBENZENE	0.607	0.639	-5.3	130	0.00	19.68
89		SEC-BUTYLBENZENE	0.349	0.386	-10.6	126	0.00	19.71
90		p-ISOPROPYLTOLUENE	0.324	0.381	-17.6	130	0.00	19.88
91		o-DICHLOROBENZENE	0.542	0.613	-13.1	136	0.00	20.06
92		n-BUTYLBENZENE	0.218	0.265	-21.6	139	0.00	20.34
93		HEXACHLOROBUTADIENE	0.191	0.194	-1.6	157	0.00	22.43
94		1,2,4-TRICHLOROBENZENE	0.123	0.130	-5.7	167	0.00	21.94
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	120	0.00	16.41
96		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1073-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25419.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25356.D  M2W1070.M        Thu Sep 10 09:14:08 2009   VOA-CLN-04
```

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1075-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25472.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	93	0.00	9.95
2		FREON 115	1.029	0.867	15.7	85	0.00	5.01
3		DICHLORODIFLUOROMETHANE	1.554	1.372	11.7	86	0.01	5.02
4		FREON 152A	1.066	1.058	0.8	91	0.00	5.13
5		CHLORODIFLUOROMETHANE	0.416	0.412	1.0	93	0.01	5.18
6		PROPYLENE	1.752	1.706	2.6	90	0.00	5.22
7		PROPANE	0.682	0.615	9.8	92	0.00	5.24
8		FREON 114	4.097	4.172	-1.8	95	0.00	5.56
9		CHLOROMETHANE	0.587	0.592	-0.9	96	0.00	5.46
10		VINYL CHLORIDE	1.833	1.890	-3.1	95	0.00	5.70
11		1,3-BUTADIENE	1.404	1.445	-2.9	93	0.01	5.84
12		n-BUTANE	3.020	3.013	0.2	93	0.00	5.89
13		BROMOMETHANE	1.468	1.495	-1.8	97	0.01	6.12
14		CHLOROETHANE	0.969	1.036	-6.9	96	0.01	6.29
15		FREON 123	3.167	3.332	-5.2	97	0.00	6.76
16		FREON 123A	1.730	1.712	1.0	95	0.01	6.82
17		TRICHLOROFLUOROMETHANE	3.474	3.550	-2.2	99	0.00	7.06
18		ISOPROPYL ALCOHOL	2.558	2.443	4.5	92	0.02	7.10
19		ACETONE	0.728	0.717	1.5	96	0.02	6.88
20		PENTANE	2.034	1.998	1.8	93	0.00	7.40
21	H	TVHC as EQUIV PENTANE	11.672	12.040	-3.2	94	0.01	7.40
22		ETHYL ETHER	0.697	0.710	-1.9	93	0.01	7.40
23		IODOMETHANE	3.418	3.406	0.4	92	0.00	7.64
24		1,1-DICHLOROETHYLENE	1.372	1.336	2.6	95	0.00	7.70
25		CARBON DISULFIDE	4.684	4.732	-1.0	97	0.00	8.15
26		ETHANOL	0.598	0.568	5.0	95	0.01	6.40
27		BROMOETHENE	1.349	1.370	-1.6	94	0.01	6.65
28		METHYLENE CHLORIDE	1.379	1.303	5.5	96	0.00	7.80
29		3-CHLOROPROPENE	0.694	0.707	-1.9	93	0.00	7.92
30		FREON 113	2.164	2.075	4.1	93	0.00	8.06
31		TRANS-1,2-DICHLOROETHYLEN	1.623	1.623	0.0	95	0.00	8.74
32		TERTIARY BUTYL ALCOHOL	2.896	2.645	8.7	83	0.01	7.70
33		METHYL TERTIARY BUTYL ETH	3.828	3.749	2.1	90	0.01	8.98
34		TETRAHYDROFURAN	1.965	1.926	2.0	86	0.02	10.50
35		HEXANE	2.433	2.487	-2.2	92	0.00	9.98
36		VINYL ACETATE	0.320	0.337	-5.3	92	0.00	9.05
37		1,1-DICHLOROETHANE	3.050	3.172	-4.0	95	0.00	8.94
38		METHYL ETHYL KETONE	0.734	0.719	2.0	90	0.01	9.32
39		cis-1,2-DICHLOROETHYLENE	1.589	1.618	-1.8	95	0.00	9.78
40		ETHYL ACETATE	0.463	0.437	5.6	86	0.00	9.95
41		CHLOROFORM	2.902	3.063	-5.5	97	0.00	10.08
42		2,4-DIMETHYLPENTANE	2.853	2.967	-4.0	93	0.00	10.87

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1075-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25472.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.972	3.153	-6.1	97	0.00	11.09
44		CARBON TETRACHLORIDE	3.086	3.234	-4.8	97	0.00	11.72
45		1,2-DICHLOROETHANE	2.084	2.186	-4.9	94	0.00	10.83
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	89	0.00	11.89
47		BENZENE	1.032	1.071	-3.8	95	0.00	11.57
48		CYCLOHEXANE	0.463	0.455	1.7	94	0.00	11.85
49		2,3-DIMETHYLPENTANE	0.215	0.232	-7.9	93	0.00	12.06
50		TRICHLOROETHYLENE	0.376	0.391	-4.0	95	0.00	12.62
51		1,2-DICHLOROPROPANE	0.384	0.419	-9.1	94	0.00	12.39
52		BROMODICHLOROMETHANE	0.613	0.689	-12.4	97	0.00	12.58
53		2,2,4-TRIMETHYLPENTANE	1.418	1.485	-4.7	94	0.00	12.65
54		1,4-DIOXANE	0.188	0.179	4.8	88	0.02	12.64
55		METHYL METHACRYLATE	0.299	0.307	-2.7	89	0.00	12.78
56		HEPTANE	0.625	0.652	-4.3	92	0.00	12.89
57	H	TVHC as EQUIV HEPTANE	2.515	2.731	-8.6	95	0.00	12.89
58		METHYL ISOBUTYL KETONE	0.721	0.692	4.0	86	0.00	13.52
59		cis-1,3-DICHLOROPROPENE	0.500	0.561	-12.2	94	0.00	13.49
60		TOLUENE	0.627	0.693	-10.5	95	0.00	14.52
61		trans-1,3-DICHLOROPROPENE	0.472	0.519	-10.0	92	0.00	14.03
62		1,1,2-TRICHLOROETHANE	0.305	0.338	-10.8	96	0.00	14.22
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	89	0.00	16.41
64		2-HEXANONE	0.708	0.594	16.1	85	0.00	14.77
65		TETRACHLOROETHYLENE	0.786	0.765	2.7	94	0.00	15.73
66		DIBROMOCHLOROMETHANE	1.095	1.189	-8.6	97	0.00	14.98
67		1,2-DIBROMOETHANE	0.957	0.982	-2.6	96	0.00	15.25
68		OCTANE	1.406	1.504	-7.0	92	0.00	15.52
69		1,1,1,2-TETRACHLOROETHANE	0.735	0.789	-7.3	96	0.00	16.43
70		CHLOROBENZENE	1.364	1.342	1.6	96	0.00	16.46
71		ETHYLBENZENE	2.292	2.410	-5.1	96	0.00	16.85
72		m,p-XYLENE	0.828	0.879	-6.2	96	0.00	17.04
73		o-XYLENE	0.774	0.840	-8.5	98	0.00	17.56
74		STYRENE	1.105	1.269	-14.8	95	0.00	17.44
75		NONANE	1.150	1.329	-15.6	94	0.00	17.75
76		BROMOFORM	0.850	0.964	-13.4	98	0.00	17.16
77	S	4-BROMOFLUOROBENZENE	1.019	1.107	-8.6	89	0.00	18.05
78		1,1,2,2-TETRACHLOROETHANE	0.932	1.047	-12.3	102	0.00	17.55
79		ISOPROPYLBENZENE	2.027	2.309	-13.9	100	0.00	18.18
80		2-CHLOROTOLUENE	0.459	0.520	-13.3	99	0.00	18.71
81		n-PROPYLBENZENE	0.486	0.561	-15.4	98	0.00	18.73
82		4-ETHYLTOLUENE	1.571	1.846	-17.5	99	0.00	18.88
83		1,3,5-TRIMETHYLBENZENE	1.317	1.559	-18.4	102	0.00	18.96
84		TERT-BUTYLBENZENE	0.330	0.379	-14.8	99	0.00	19.41
85		1,2,4-TRIMETHYLBENZENE	1.104	1.336	-21.0	101	0.00	19.41
86		m-DICHLOROBENZENE	0.658	0.738	-12.2	100	0.00	19.60
87		BENZYL CHLORIDE	0.690	0.734	-6.4	96	0.00	19.58
88		p-DICHLOROBENZENE	0.607	0.651	-7.2	99	0.00	19.68
89		SEC-BUTYLBENZENE	0.349	0.405	-16.0	99	0.00	19.71
90		p-ISOPROPYLTOLUENE	0.324	0.375	-15.7	96	0.00	19.88
91		o-DICHLOROBENZENE	0.542	0.616	-13.7	102	0.00	20.06
92		n-BUTYLBENZENE	0.218	0.241	-10.6	95	0.00	20.34
93		HEXACHLOROBUTADIENE	0.191	0.174	8.9	105	0.00	22.43
94		1,2,4-TRICHLOROBENZENE	0.123	0.105	14.6	101	0.00	21.94
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	89	0.00	16.41
96		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1075-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25472.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25356.D  M2W1070.M        Sun Sep 13 13:06:58 2009   MS2W
```

Initial Calibration Summary

Job Number: JA28238 **Sample:** V2W1080-ICC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25644.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Response Factor Report MS2W

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Calibration Files
0.04=2W25651.D 0.1 =2W25650.D 0.2 =2W25647.D 0.5 =2W25645.D
5.0 =2W25646.D 10. =2W25644.D 20. =2W25648.D 40. =2W25654.D

Compound	0.04	0.1	0.2	0.5	5.0	10.	20.	40.	Avg	%RSD
1) I BROMOCHLOROMETHANE			----------ISTD----------							
2) FREON 115			1.227	1.061	1.599	0.849	0.923	0.848	1.084	26.82
3) DICHLORODIFL			1.636	1.462	2.274	1.200	1.298	1.172	1.507	27.46
4) FREON 152A		0.919	1.015	0.826	0.920	0.883	0.809	0.776	0.878	9.32
5) CHLORODIFLUO			0.396	0.326	0.353	0.325	0.303	0.302	0.334	10.69
6) PROPYLENE		1.601	1.717	1.353	1.335	1.189	1.048	0.951	1.313	21.20
7) PROPANE			0.705	0.545	0.485	0.426	0.374	0.346	0.480	27.53
8) FREON 114	4.018	4.082	4.441	3.702	4.074	3.609	3.297	3.046	3.784	12.14
9) CHLOROMETHAN			0.565	0.461	0.495	0.451	0.425	0.400	0.466	12.47
10) VINYL CHLORI		1.592	1.761	1.439	1.644	1.514	1.398	1.313	1.523	10.13
11) 1,3-BUTADIEN		1.236	1.316	1.109	1.252	1.141	1.021	0.978	1.150	10.84
12) n-BUTANE			2.775	2.421	2.542	2.208	2.019	1.704	2.278	16.87
13) BROMOMETHANE		1.349	1.500	1.259	1.417	1.301	1.231	1.239	1.328	7.56
14) CHLOROETHANE		0.776	0.923	0.785	0.879	0.825	0.799	0.800	0.827	6.61
15) FREON 123	3.186	3.025	3.337	2.791	3.222	2.812	2.758	2.751	2.985	7.96
16) FREON 123A		1.691	1.804	1.537	1.735	1.536	1.532	1.634	1.638	6.66
17) TRICHLOROFLU	3.510	3.030	3.395	2.818	3.182	2.844	2.790	2.895	3.058	9.05
18) ISOPROPYL AL			2.391	1.917	2.135	1.800	1.773	1.625	1.940	14.36
19) ACETONE			0.947	0.796	0.620	0.556	0.575	0.621	0.686	22.41
20) PENTANE			1.644	1.409	1.455	1.322	1.195	1.095	1.354	14.42
21) TVHC as EQUI			9.484	8.093	9.119	8.374	7.811	7.449	8.388	9.29
22) ETHYL ETHER			0.568	0.504	0.611	0.582	0.570	0.585	0.570	6.24
23) IODOMETHANE	3.522	3.240	3.448	2.991	3.493	3.208	3.124	3.104	3.266	6.08
24) 1,1-DICHLORO		1.526	1.464	1.116	1.266	1.141	1.097	1.120	1.247	14.36
25) CARBON DISUL	4.744	4.129	4.454	3.787	4.064	3.662	3.494	3.455	3.974	11.60
26) ETHANOL				0.535	0.487	0.433	0.432	0.450	0.467	9.44
27) BROMOETHENE		1.250	1.347	1.136	1.352	1.238	1.224	1.258	1.258	5.92
28) METHYLENE CH			1.495	1.191	1.141	1.059	1.015	1.030	1.155	15.57
29) 3-CHLOROPROP			0.572	0.510	0.596	0.574	0.557	0.573	0.564	5.21
30) FREON 113	2.168	2.026	2.235	1.919	2.170	1.973	1.916	1.949	2.044	6.24
31) TRANS-1,2-DI		1.792	1.719	1.290	1.495	1.385	1.337	1.348	1.481	13.44
32) TERTIARY BUT		2.302	2.281	1.737	2.402	2.174	1.774		2.112	13.52
33) METHYL TERTI	2.956	3.188	3.197	2.804	3.362	3.099	3.030	3.097	3.091	5.45
34) TETRAHYDROFU		1.152	1.253	1.114	1.341	1.358	1.302	1.348	1.267	7.78
35) HEXANE	1.997	1.665	1.951	1.655	2.003	1.840	1.742	1.588	1.805	9.18
36) VINYL ACETAT			0.225	0.238	0.295	0.296	0.288	0.311	0.276	12.73
37) 1,1-DICHLORO		2.266	2.656	2.307	2.582	2.403	2.241	2.178	2.376	7.60
38) METHYL ETHYL			0.564	0.468	0.597	0.589	0.589	0.649	0.576	10.36
39) cis-1,2-DICH		1.718	1.681	1.263	1.480	1.390	1.348	1.370	1.464	11.83
40) ETHYL ACETAT			0.370	0.298	0.370	0.344	0.342	0.337	0.344	7.69
41) CHLOROFORM	2.564	2.248	2.590	2.265	2.633	2.429	2.325	2.319	2.422	6.40
42) 2,4-DIMETHYL	2.099	1.913	2.231	1.930	2.376	2.241	2.118	2.020	2.116	7.61
43) 1,1,1-TRICHL		2.384	2.723	2.359	2.733	2.510	2.426	2.441	2.511	6.20
44) CARBON TETRA	2.560	2.461	2.788	2.504	2.897	2.627	2.558	2.574	2.621	5.64
45) 1,2-DICHLORO		1.515	1.625	1.409	1.691	1.604	1.566	1.600	1.573	5.73

Initial Calibration Summary

Job Number: JA28238 **Sample:** V2W1080-ICC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25644.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

46)	I 1,4-DIFLUOROBENZENE			----------ISTD----------							
47)	BENZENE	1.114	0.923	0.976	0.859	0.966	0.876	0.839	0.800	0.919	10.84
48)	CYCLOHEXANE	0.572	0.442	0.467	0.382	0.432	0.393	0.384	0.381	0.432	15.15
49)	2,3-DIMETHYL			0.177	0.153	0.201	0.189	0.188	0.188	0.183	9.01
50)	TRICHLOROETH	0.441	0.354	0.394	0.333	0.380	0.339	0.334	0.302	0.360	12.15
51)	1,2-DICHLORO		0.382	0.372	0.318	0.345	0.327	0.314	0.303	0.337	8.91
52)	BROMODICHLOR	0.566	0.487	0.567	0.500	0.604	0.547	0.536	0.511	0.540	7.27
53)	2,2,4-TRIMET	1.262	1.095	1.230	1.097	1.278	1.114	1.033	0.839	1.119	12.86
54)	1,4-DIOXANE		0.245	0.167	0.128	0.175	0.158	0.154	0.153	0.169	21.90
55)	METHYL METHA		0.215	0.218	0.186	0.261	0.251	0.264	0.279	0.239	13.99
56)	HEPTANE	0.512	0.404	0.471	0.416	0.482	0.447	0.429	0.396	0.445	9.20
57)	TVHC as EQUI			2.092	1.777	2.164	1.978	1.955	1.895	1.977	6.98
58)	METHYL ISOBU			0.542	0.399	0.556	0.500	0.479	0.475	0.492	11.45
59)	cis-1,3-DICH	0.485	0.409	0.444	0.387	0.476	0.445	0.448	0.444	0.442	7.23
60)	TOLUENE	0.725	0.566	0.579	0.529	0.647	0.593	0.594	0.573	0.601	10.01
61)	trans-1,3-DI	0.492	0.366	0.356	0.317	0.415	0.404	0.416	0.421	0.398	13.22
62)	1,1,2-TRICHL		0.242	0.272	0.251	0.298	0.276	0.278	0.274	0.270	6.83
63)	I CHLOROBENZENE-D5			----------ISTD----------							
64)	2-HEXANONE			0.773	0.306	0.528	0.503	0.479	0.461	0.508	29.77
65)	TETRACHLOROE	1.142	0.919	0.977	0.861	0.929	0.813	0.744	0.692	0.885	16.01
66)	DIBROMOCHLOR	1.207	1.047	1.120	1.024	1.241	1.128	1.045	0.993	1.101	8.09
67)	1,2-DIBROMOE		0.968	0.994	0.847	0.996	0.933	0.876	0.845	0.923	7.22
68)	OCTANE			1.190	1.016	1.293	1.145	1.022	0.872	1.090	13.72
69)	1,1,1,2-TETR		0.741	0.835	0.753	0.882	0.784	0.746	0.697	0.777	8.09
70)	CHLOROBENZEN		1.605	1.595	1.327	1.485	1.326	1.225	1.100	1.380	13.75
71)	ETHYLBENZENE	3.104	2.379	2.527	2.143	2.548	2.230	2.033	1.793	2.345	16.97
72)	m,p-XYLENE	1.207	0.928	0.951	0.816	0.969	0.848	0.790	0.706	0.902	16.87
73)	o-XYLENE	1.048	0.818	0.902	0.787	0.934	0.810	0.760	0.678	0.842	13.66
74)	STYRENE	1.650	0.938	0.904	0.821	1.276	1.191	1.145	1.087	1.127	23.27
75)	NONANE	0.947	0.826	0.943	0.826	1.141	1.024	0.939	0.757	0.926	13.26
76)	BROMOFORM		0.834	0.791	0.714	0.980	0.917	0.877	0.860	0.853	10.08
77)	4-BROMOFLUOR	1.028	0.924	0.934	0.935	1.079	1.140	1.134	1.071	1.030	8.72
78)	1,1,2,2-TETR		0.850	0.901	0.794	1.046	0.899	0.845	0.721	0.865	11.71
79)	ISOPROPYLBEN		2.055	2.191	1.937	2.493	2.142	1.977	1.720	2.074	11.60
80)	2-CHLOROTOLU		0.459	0.452	0.408	0.550	0.494	0.488	0.464	0.474	9.23
81)	n-PROPYLBENZ		0.446	0.422	0.393	0.590	0.538	0.543	0.514	0.492	14.73
82)	4-ETHYLTOLUE		1.384	1.351	1.193	1.885	1.691	1.651	1.429	1.512	15.77
83)	1,3,5-TRIMET		1.219	1.193	1.089	1.574	1.391	1.339	1.213	1.288	12.43
84)	TERT-BUTYLBE			0.325	0.295	0.413	0.369	0.380	0.347	0.355	11.83
85)	1,2,4-TRIMET		1.013	0.953	0.835	1.340	1.184	1.166	1.002	1.070	15.80
86)	m-DICHLOROBE			0.585	0.461	0.714	0.680	0.709	0.710	0.643	15.83
87)	BENZYL CHLOR			0.562	0.380	0.614	0.575	0.642	0.699	0.579	18.82
88)	p-DICHLOROBE			0.552	0.385	0.621	0.604	0.638	0.656	0.576	17.35
89)	SEC-BUTYLBEN			0.286	0.264	0.426	0.386	0.397	0.399	0.360	18.70
90)	p-ISOPROPYLT			0.241	0.203	0.382	0.352	0.368	0.383	0.321	24.48
91)	o-DICHLOROBE			0.469	0.375	0.571	0.544	0.570	0.590	0.520	15.88
92)	n-BUTYLBENZE			0.142	0.114	0.227	0.210	0.238	0.264	0.199	29.27
93)	HEXACHLOROBU			0.228	0.189	0.138	0.103	0.106	0.103	0.144	36.56
94)	1,2,4-TRICHL			0.169	0.097	0.077	0.067	0.080	0.088	0.096	38.44
95)	CHLOROBENZENE-D5(A)			----------ISTD----------							
96)	NAPHTHALENE			0.527	0.328	0.282	0.265	0.338		0.348	30.07

(#) = Out of Range ### Number of calibration levels exceeded format ###

M2W1080.M Fri Sep 25 12:39:32 2009 MS2W

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1081-ICV1080
Account: HLANJPR Mactec **Lab FileID:** 2W25662.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1081\2W25662.D Vial: 3
Acq On : 24 Sep 2009 4:33 pm Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1081,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	83	0.00	9.93
2		FREON 115	1.084	0.815	24.8	80	0.00	5.00
3		DICHLORODIFLUOROMETHANE	1.507	1.151	23.6	80	0.00	5.00
4		FREON 152A	0.878	0.895	-1.9	85	0.00	5.12
5		CHLORODIFLUOROMETHANE	0.334	0.338	-1.2	87	0.00	5.16
6		PROPYLENE	1.313	1.191	9.3	84	0.00	5.20
7		PROPANE	0.480	0.418	12.9	82	0.00	5.23
8		FREON 114	3.784	3.848	-1.7	89	0.00	5.54
9		CHLOROMETHANE	0.466	0.485	-4.1	90	0.00	5.45
10		VINYL CHLORIDE	1.523	1.647	-8.1	91	0.00	5.67
11		1,3-BUTADIENE	1.150	1.235	-7.4	90	0.00	5.81
12		n-BUTANE	2.278	2.402	-5.4	91	0.00	5.87
13		BROMOMETHANE	1.328	1.399	-5.3	90	0.00	6.10
14		CHLOROETHANE	0.827	0.913	-10.4	92	0.00	6.27
15		FREON 123	2.985	3.162	-5.9	94	0.00	6.74
16		FREON 123A	1.638	1.693	-3.4	92	0.00	6.80
17		TRICHLOROFLUOROMETHANE	3.058	3.202	-4.7	94	0.00	7.03
18		ISOPROPYL ALCOHOL	1.940	2.012	-3.7	93	0.00	7.07
19		ACETONE	0.686	0.622	9.3	93	0.00	6.85
20		PENTANE	1.354	1.380	-1.9	87	0.00	7.37
21	H	TVHC as EQUIV PENTANE	8.388	8.877	-5.8	88	0.00	7.37
22		ETHYL ETHER	0.570	0.614	-7.7	88	0.00	7.38
23		IODOMETHANE	3.266	3.476	-6.4	90	0.00	7.61
24		1,1-DICHLOROETHYLENE	1.247	1.242	0.4	91	0.00	7.67
25		CARBON DISULFIDE	3.974	4.062	-2.2	93	0.00	8.13
26		ETHANOL	0.467	0.456	2.4	88	0.01	6.37
27		BROMOETHENE	1.258	1.355	-7.7	91	0.00	6.62
28		METHYLENE CHLORIDE	1.155	1.150	0.4	91	0.00	7.78
29		3-CHLOROPROPENE	0.564	0.627	-11.2	91	0.00	7.90
30		FREON 113	2.044	2.093	-2.4	88	0.00	8.03
31		TRANS-1,2-DICHLOROETHYLEN	1.481	1.496	-1.0	90	0.00	8.71
32		TERTIARY BUTYL ALCOHOL	2.112	2.196	-4.0	84	0.00	7.67
33		METHYL TERTIARY BUTYL ETH	3.091	3.171	-2.6	85	0.00	8.96
34		TETRAHYDROFURAN	1.267	1.337	-5.5	82	0.00	10.47
35		HEXANE	1.805	2.010	-11.4	91	0.00	9.95
36		VINYL ACETATE	0.276	0.303	-9.8	85	0.00	9.02
37		1,1-DICHLOROETHANE	2.376	2.590	-9.0	90	0.00	8.92
38		METHYL ETHYL KETONE	0.576	0.609	-5.7	86	0.00	9.29
39		cis-1,2-DICHLOROETHYLENE	1.464	1.496	-2.2	90	0.00	9.75
40		ETHYL ACETATE	0.344	0.373	-8.4	90	0.00	9.94
41		CHLOROFORM	2.422	2.651	-9.5	91	0.00	10.05
42		2,4-DIMETHYLPENTANE	2.116	2.398	-13.3	89	0.00	10.84

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1081-ICV1080
Account: HLANJPR Mactec **Lab FileID:** 2W25662.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.511	2.731	-8.8	91	0.00	11.07
44		CARBON TETRACHLORIDE	2.621	2.871	-9.5	91	0.00	11.69
45		1,2-DICHLOROETHANE	1.573	1.761	-12.0	92	0.00	10.80
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	81	0.00	11.86
47		BENZENE	0.919	0.979	-6.5	91	0.00	11.54
48		CYCLOHEXANE	0.432	0.435	-0.7	90	0.00	11.83
49		2,3-DIMETHYLPENTANE	0.183	0.209	-14.2	89	0.00	12.03
50		TRICHLOROETHYLENE	0.360	0.386	-7.2	92	0.00	12.60
51		1,2-DICHLOROPROPANE	0.337	0.368	-9.2	91	0.00	12.36
52		BROMODICHLOROMETHANE	0.540	0.624	-15.6	92	0.00	12.56
53		2,2,4-TRIMETHYLPENTANE	1.119	1.272	-13.7	93	0.00	12.62
54		1,4-DIOXANE	0.169	0.165	2.4	85	0.00	12.61
55		METHYL METHACRYLATE	0.239	0.270	-13.0	87	0.00	12.76
56		HEPTANE	0.445	0.497	-11.7	90	0.00	12.87
57	H	TVHC as EQUIV HEPTANE	1.977	2.204	-11.5	90	0.00	12.87
58		METHYL ISOBUTYL KETONE	0.492	0.538	-9.3	87	0.00	13.49
59		cis-1,3-DICHLOROPROPENE	0.442	0.512	-15.8	93	0.00	13.47
60		TOLUENE	0.601	0.666	-10.8	91	0.00	14.50
61		trans-1,3-DICHLOROPROPENE	0.398	0.468	-17.6	94	0.00	14.01
62		1,1,2-TRICHLOROETHANE	0.270	0.318	-17.8	94	0.00	14.21
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	86	0.00	16.39
64		2-HEXANONE	0.508	0.524	-3.1	90	0.00	14.75
65		TETRACHLOROETHYLENE	0.885	0.833	5.9	88	0.00	15.70
66		DIBROMOCHLOROMETHANE	1.101	1.221	-10.9	93	0.00	14.96
67		1,2-DIBROMOETHANE	0.923	1.019	-10.4	94	0.00	15.23
68		OCTANE	1.090	1.240	-13.8	93	0.00	15.50
69		1,1,1,2-TETRACHLOROETHANE	0.777	0.849	-9.3	93	0.00	16.41
70		CHLOROBENZENE	1.380	1.457	-5.6	95	0.00	16.44
71		ETHYLBENZENE	2.345	2.453	-4.6	95	0.00	16.83
72		m,p-XYLENE	0.902	0.930	-3.1	95	0.00	17.02
73		o-XYLENE	0.842	0.898	-6.7	96	0.00	17.54
74		STYRENE	1.127	1.330	-18.0	96	0.00	17.42
75		NONANE	0.926	1.161	-25.4	98	0.00	17.73
76		BROMOFORM	0.853	1.031	-20.9	97	0.00	17.14
77	S	4-BROMOFLUOROBENZENE	1.030	1.116	-8.3	84	0.00	18.03
78		1,1,2,2-TETRACHLOROETHANE	0.865	1.047	-21.0	101	0.00	17.53
79		ISOPROPYLBENZENE	2.074	2.381	-14.8	96	0.00	18.17
80		2-CHLOROTOLUENE	0.474	0.563	-18.8	98	0.00	18.70
81		n-PROPYLBENZENE	0.492	0.598	-21.5	96	0.00	18.71
82		4-ETHYLTOLUENE	1.512	1.913	-26.5	98	0.00	18.87
83		1,3,5-TRIMETHYLBENZENE	1.288	1.557	-20.9	97	0.00	18.95
84		TERT-BUTYLBENZENE	0.355	0.398	-12.1	93	0.00	19.40
85		1,2,4-TRIMETHYLBENZENE	1.070	1.373	-28.3	100	0.00	19.40
86		m-DICHLOROBENZENE	0.643	0.806	-25.3	102	0.00	19.59
87		BENZYL CHLORIDE	0.579	0.725	-25.2	109	0.00	19.57
88		p-DICHLOROBENZENE	0.576	0.721	-25.2	103	0.00	19.66
89		SEC-BUTYLBENZENE	0.360	0.421	-16.9	94	0.00	19.70
90		p-ISOPROPYLTOLUENE	0.321	0.399	-24.3	98	0.00	19.86
91		o-DICHLOROBENZENE	0.520	0.660	-26.9	105	0.00	20.05
92		n-BUTYLBENZENE	0.199	0.252	-26.6	104	0.00	20.33
93		HEXACHLOROBUTADIENE	0.144	0.132	8.3	111	0.00	22.41
94		1,2,4-TRICHLOROBENZENE	0.096	0.092	4.2	119	0.00	21.93
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	86	0.00	16.39
96		NAPHTHALENE		----------NA----------				

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1081-ICV1080
Account: HLANJPR Mactec **Lab FileID:** 2W25662.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25644.D  M2W1080.M        Wed Sep 30 15:27:42 2009   MS2W
```

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1083-CC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25709.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\2W25709.D Vial: 2
Acq On : 28 Sep 2009 7:27 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	80	0.04	9.97
2		FREON 115	1.084	0.804	25.8	76	0.05	5.05
3		DICHLORODIFLUOROMETHANE	1.507	1.251	17.0	84	0.05	5.05
4		FREON 152A	0.878	1.024	-16.6	93	0.06	5.17
5		CHLORODIFLUOROMETHANE	0.334	0.372	-11.4	92	0.05	5.21
6		PROPYLENE	1.313	1.569	-19.5	106	0.05	5.26
7		PROPANE	0.480	0.561	-16.9	106	0.05	5.28
8		FREON 114	3.784	3.895	-2.9	87	0.06	5.60
9		CHLOROMETHANE	0.466	0.538	-15.5	96	0.05	5.50
10		VINYL CHLORIDE	1.523	1.703	-11.8	90	0.06	5.73
11		1,3-BUTADIENE	1.150	1.304	-13.4	92	0.06	5.87
12		n-BUTANE	2.278	2.700	-18.5	98	0.05	5.92
13		BROMOMETHANE	1.328	1.337	-0.7	83	0.06	6.16
14		CHLOROETHANE	0.827	0.903	-9.2	88	0.06	6.32
15		FREON 123	2.985	2.958	0.9	84	0.05	6.79
16		FREON 123A	1.638	1.518	7.3	79	0.06	6.85
17		TRICHLOROFLUOROMETHANE	3.058	2.909	4.9	82	0.05	7.09
18		ISOPROPYL ALCOHOL	1.940	2.105	-8.5	94	0.08	7.15
19		ACETONE	0.686	0.598	12.8	86	0.07	6.92
20		PENTANE	1.354	1.625	-20.0	99	0.05	7.43
21	H	TVHC as EQUIV PENTANE	8.388	9.997	-19.2	96	0.05	7.43
22		ETHYL ETHER	0.570	0.631	-10.7	87	0.06	7.44
23		IODOMETHANE	3.266	3.234	1.0	81	0.05	7.66
24		1,1-DICHLOROETHYLENE	1.247	1.216	2.5	86	0.05	7.72
25		CARBON DISULFIDE	3.974	4.126	-3.8	90	0.05	8.18
26		ETHANOL	0.467	0.479	-2.6	89	0.09	6.45
27		BROMOETHENE	1.258	1.243	1.2	81	0.06	6.68
28		METHYLENE CHLORIDE	1.155	1.130	2.2	86	0.05	7.82
29		3-CHLOROPROPENE	0.564	0.626	-11.0	87	0.05	7.95
30		FREON 113	2.044	1.951	4.5	79	0.05	8.08
31		TRANS-1,2-DICHLOROETHYLEN	1.481	1.479	0.1	86	0.05	8.76
32		TERTIARY BUTYL ALCOHOL	2.112	2.134	-1.0	79	0.07	7.75
33		METHYL TERTIARY BUTYL ETH	3.091	3.355	-8.5	87	0.05	9.00
34		TETRAHYDROFURAN	1.267	1.616	-27.5	96	0.05	10.52
35		HEXANE	1.805	2.215	-22.7	97	0.04	9.99
36		VINYL ACETATE	0.276	0.309	-12.0	84	0.04	9.07
37		1,1-DICHLOROETHANE	2.376	2.783	-17.1	93	0.04	8.96
38		METHYL ETHYL KETONE	0.576	0.629	-9.2	86	0.05	9.34
39		cis-1,2-DICHLOROETHYLENE	1.464	1.500	-2.5	87	0.04	9.79
40		ETHYL ACETATE	0.344	0.398	-15.7	93	0.05	9.98
41		CHLOROFORM	2.422	2.677	-10.5	88	0.04	10.09
42		2,4-DIMETHYLPENTANE	2.116	2.636	-24.6	94	0.03	10.88

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1083-CC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25709.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.511	2.729	-8.7	87	0.03	11.10
44		CARBON TETRACHLORIDE	2.621	2.817	-7.5	86	0.02	11.72
45		1,2-DICHLOROETHANE	1.573	1.844	-17.2	92	0.03	10.84
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	82	0.02	11.89
47		BENZENE	0.919	0.966	-5.1	90	0.02	11.57
48		CYCLOHEXANE	0.432	0.420	2.8	87	0.02	11.85
49		2,3-DIMETHYLPENTANE	0.183	0.207	-13.1	89	0.02	12.06
50		TRICHLOROETHYLENE	0.360	0.371	-3.1	89	0.02	12.62
51		1,2-DICHLOROPROPANE	0.337	0.375	-11.3	94	0.02	12.39
52		BROMODICHLOROMETHANE	0.540	0.605	-12.0	90	0.02	12.58
53		2,2,4-TRIMETHYLPENTANE	1.119	1.321	-18.1	97	0.02	12.65
54		1,4-DIOXANE	0.169	0.166	1.8	86	0.04	12.65
55		METHYL METHACRYLATE	0.239	0.271	-13.4	88	0.03	12.79
56		HEPTANE	0.445	0.547	-22.9	100	0.02	12.89
57	H	TVHC as EQUIV HEPTANE	1.977	2.323	-17.5	96	0.02	12.89
58		METHYL ISOBUTYL KETONE	0.492	0.605	-23.0	99	0.03	13.53
59		cis-1,3-DICHLOROPROPENE	0.442	0.507	-14.7	93	0.02	13.49
60		TOLUENE	0.601	0.642	-6.8	89	0.02	14.52
61		trans-1,3-DICHLOROPROPENE	0.398	0.458	-15.1	93	0.02	14.03
62		1,1,2-TRICHLOROETHANE	0.270	0.310	-14.8	92	0.02	14.22
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	90	0.01	16.40
64		2-HEXANONE	0.508	0.519	-2.2	93	0.02	14.77
65		TETRACHLOROETHYLENE	0.885	0.729	17.6	81	0.01	15.72
66		DIBROMOCHLOROMETHANE	1.101	1.087	1.3	87	0.02	14.98
67		1,2-DIBROMOETHANE	0.923	0.917	0.7	89	0.01	15.24
68		OCTANE	1.090	1.319	-21.0	104	0.01	15.51
69		1,1,1,2-TETRACHLOROETHANE	0.777	0.757	2.6	87	0.01	16.43
70		CHLOROBENZENE	1.380	1.289	6.6	88	0.01	16.45
71		ETHYLBENZENE	2.345	2.256	3.8	91	0.01	16.84
72		m,p-XYLENE	0.902	0.846	6.2	90	0.01	17.04
73		o-XYLENE	0.842	0.812	3.6	91	0.01	17.55
74		STYRENE	1.127	1.175	-4.3	89	0.00	17.43
75		NONANE	0.926	1.198	-29.4	106	0.00	17.73
76		BROMOFORM	0.853	0.875	-2.6	86	0.01	17.16
77	S	4-BROMOFLUOROBENZENE	1.030	1.051	-2.0	83	0.00	18.04
78		1,1,2,2-TETRACHLOROETHANE	0.865	0.990	-14.5	99	0.00	17.54
79		ISOPROPYLBENZENE	2.074	2.150	-3.7	91	0.00	18.17
80		2-CHLOROTOLUENE	0.474	0.493	-4.0	90	0.00	18.70
81		n-PROPYLBENZENE	0.492	0.534	-8.5	90	0.00	18.72
82		4-ETHYLTOLUENE	1.512	1.695	-12.1	91	0.00	18.87
83		1,3,5-TRIMETHYLBENZENE	1.288	1.434	-11.3	93	0.00	18.96
84		TERT-BUTYLBENZENE	0.355	0.358	-0.8	87	0.00	19.40
85		1,2,4-TRIMETHYLBENZENE	1.070	1.256	-17.4	96	0.00	19.41
86		m-DICHLOROBENZENE	0.643	0.697	-8.4	93	0.00	19.60
87		BENZYL CHLORIDE	0.579	0.652	-12.6	103	0.00	19.57
88		p-DICHLOROBENZENE	0.576	0.599	-4.0	90	0.00	19.66
89		SEC-BUTYLBENZENE	0.360	0.376	-4.4	88	0.00	19.70
90		p-ISOPROPYLTOLUENE	0.321	0.345	-7.5	88	0.00	19.87
91		o-DICHLOROBENZENE	0.520	0.565	-8.7	94	0.00	20.05
92		n-BUTYLBENZENE	0.199	0.216	-8.5	93	0.00	20.33
93		HEXACHLOROBUTADIENE	0.144	0.124	13.9	109	0.00	22.41
94		1,2,4-TRICHLOROBENZENE	0.096	0.085	11.5	115	0.00	21.93
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	90	0.01	16.40
96		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1083-CC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25709.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25644.D  M2W1080.M        Tue Sep 29 10:48:31 2009   MS2W
```

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1084-CC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25735.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2W CORE\v2w1084\2w25735.d Vial: 2
Acq On : 29 Sep 2009 10:18 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1084,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	80	0.00	9.92
2		FREON 115	1.084	0.765	29.4	72	0.00	5.00
3		DICHLORODIFLUOROMETHANE	1.507	1.111	26.3	74	0.00	5.00
4		FREON 152A	0.878	0.827	5.8	75	0.00	5.12
5		CHLORODIFLUOROMETHANE	0.334	0.343	-2.7	84	0.00	5.16
6		PROPYLENE	1.313	1.113	15.2	75	0.00	5.21
7		PROPANE	0.480	0.402	16.2	75	0.00	5.22
8		FREON 114	3.784	3.997	-5.6	88	0.00	5.54
9		CHLOROMETHANE	0.466	0.497	-6.7	88	0.00	5.45
10		VINYL CHLORIDE	1.523	1.682	-10.4	88	0.00	5.68
11		1,3-BUTADIENE	1.150	1.251	-8.8	87	0.00	5.81
12		n-BUTANE	2.278	2.415	-6.0	87	0.00	5.87
13		BROMOMETHANE	1.328	1.412	-6.3	86	0.00	6.10
14		CHLOROETHANE	0.827	0.922	-11.5	89	0.00	6.27
15		FREON 123	2.985	3.111	-4.2	88	0.00	6.74
16		FREON 123A	1.638	1.625	0.8	84	0.00	6.79
17		TRICHLOROFLUOROMETHANE	3.058	3.197	-4.5	89	0.00	7.03
18		ISOPROPYL ALCOHOL	1.940	2.221	-14.5	98	0.00	7.08
19		ACETONE	0.686	0.665	3.1	95	0.00	6.85
20		PENTANE	1.354	1.143	15.6	69	0.00	7.37
21	H	TVHC as EQUIV PENTANE	8.388	7.738	7.7	74	0.00	7.37
22		ETHYL ETHER	0.570	0.567	0.5	78	0.00	7.37
23		IODOMETHANE	3.266	3.176	2.8	79	0.00	7.61
24		1,1-DICHLOROETHYLENE	1.247	1.103	11.5	77	0.00	7.67
25		CARBON DISULFIDE	3.974	3.570	10.2	78	0.00	8.12
26		ETHANOL	0.467	0.507	-8.6	93	0.01	6.37
27		BROMOETHENE	1.258	1.312	-4.3	84	0.00	6.62
28		METHYLENE CHLORIDE	1.155	1.022	11.5	77	0.00	7.77
29		3-CHLOROPROPENE	0.564	0.542	3.9	75	0.00	7.89
30		FREON 113	2.044	1.899	7.1	77	0.00	8.03
31		TRANS-1,2-DICHLOROETHYLEN	1.481	1.344	9.3	77	0.00	8.71
32		TERTIARY BUTYL ALCOHOL	2.112	1.942	8.0	71	0.00	7.67
33		METHYL TERTIARY BUTYL ETH	3.091	3.259	-5.4	84	0.00	8.96
34		TETRAHYDROFURAN	1.267	1.224	3.4	72	0.00	10.47
35		HEXANE	1.805	1.774	1.7	77	0.00	9.95
36		VINYL ACETATE	0.276	0.275	0.4	74	0.00	9.03
37		1,1-DICHLOROETHANE	2.376	2.308	2.9	76	0.00	8.91
38		METHYL ETHYL KETONE	0.576	0.590	-2.4	80	0.00	9.29
39		cis-1,2-DICHLOROETHYLENE	1.464	1.348	7.9	77	0.00	9.75
40		ETHYL ACETATE	0.344	0.361	-4.9	84	0.00	9.93
41		CHLOROFORM	2.422	2.510	-3.6	82	0.00	10.05
42		2,4-DIMETHYLPENTANE	2.116	2.069	2.2	73	0.00	10.84

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1084-CC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25735.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.511	2.701	-7.6	86	0.00	11.07
44		CARBON TETRACHLORIDE	2.621	2.845	-8.5	86	0.00	11.69
45		1,2-DICHLOROETHANE	1.573	1.737	-10.4	86	0.00	10.80
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	80	0.00	11.86
47		BENZENE	0.919	0.848	7.7	77	0.00	11.54
48		CYCLOHEXANE	0.432	0.370	14.4	75	0.00	11.82
49		2,3-DIMETHYLPENTANE	0.183	0.176	3.8	74	0.00	12.03
50		TRICHLOROETHYLENE	0.360	0.348	3.3	82	0.00	12.60
51		1,2-DICHLOROPROPANE	0.337	0.308	8.6	75	0.00	12.36
52		BROMODICHLOROMETHANE	0.540	0.577	-6.9	84	0.00	12.56
53		2,2,4-TRIMETHYLPENTANE	1.119	1.104	1.3	79	0.00	12.62
54		1,4-DIOXANE	0.169	0.168	0.6	85	0.00	12.61
55		METHYL METHACRYLATE	0.239	0.262	-9.6	84	0.00	12.76
56		HEPTANE	0.445	0.417	6.3	75	0.00	12.87
57	H	TVHC as EQUIV HEPTANE	1.977	1.947	1.5	79	0.00	12.87
58		METHYL ISOBUTYL KETONE	0.492	0.523	-6.3	84	0.00	13.49
59		cis-1,3-DICHLOROPROPENE	0.442	0.461	-4.3	83	0.00	13.47
60		TOLUENE	0.601	0.605	-0.7	82	0.00	14.50
61		trans-1,3-DICHLOROPROPENE	0.398	0.434	-9.0	86	0.00	14.01
62		1,1,2-TRICHLOROETHANE	0.270	0.286	-5.9	83	0.00	14.20
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	90	0.00	16.38
64		2-HEXANONE	0.508	0.479	5.7	86	0.00	14.75
65		TETRACHLOROETHYLENE	0.885	0.730	17.5	81	0.00	15.70
66		DIBROMOCHLOROMETHANE	1.101	1.084	1.5	86	0.00	14.96
67		1,2-DIBROMOETHANE	0.923	0.895	3.0	86	0.00	15.22
68		OCTANE	1.090	1.036	5.0	81	0.00	15.50
69		1,1,1,2-TETRACHLOROETHANE	0.777	0.755	2.8	87	0.00	16.41
70		CHLOROBENZENE	1.380	1.252	9.3	85	0.00	16.43
71		ETHYLBENZENE	2.345	2.199	6.2	89	0.00	16.83
72		m,p-XYLENE	0.902	0.830	8.0	88	0.00	17.02
73		o-XYLENE	0.842	0.812	3.6	90	0.00	17.54
74		STYRENE	1.127	1.196	-6.1	90	0.00	17.42
75		NONANE	0.926	1.017	-9.8	89	0.00	17.72
76		BROMOFORM	0.853	0.910	-6.7	89	0.00	17.14
77	S	4-BROMOFLUOROBENZENE	1.030	1.065	-3.4	84	0.00	18.03
78		1,1,2,2-TETRACHLOROETHANE	0.865	0.987	-14.1	99	0.00	17.53
79		ISOPROPYLBENZENE	2.074	2.224	-7.2	93	0.00	18.16
80		2-CHLOROTOLUENE	0.474	0.508	-7.2	92	0.00	18.69
81		n-PROPYLBENZENE	0.492	0.561	-14.0	94	0.00	18.71
82		4-ETHYLTOLUENE	1.512	1.845	-22.0	98	0.00	18.87
83		1,3,5-TRIMETHYLBENZENE	1.288	1.529	-18.7	99	0.00	18.95
84		TERT-BUTYLBENZENE	0.355	0.387	-9.0	94	0.00	19.40
85		1,2,4-TRIMETHYLBENZENE	1.070	1.378	-28.8	105	0.00	19.40
86		m-DICHLOROBENZENE	0.643	0.756	-17.6	100	0.00	19.59
87		BENZYL CHLORIDE	0.579	0.766	-32.3#	120	0.00	19.56
88		p-DICHLOROBENZENE	0.576	0.673	-16.8	100	0.00	19.66
89		SEC-BUTYLBENZENE	0.360	0.407	-13.1	95	0.00	19.69
90		p-ISOPROPYLTOLUENE	0.321	0.389	-21.2	99	0.00	19.86
91		o-DICHLOROBENZENE	0.520	0.635	-22.1	105	0.00	20.04
92		n-BUTYLBENZENE	0.199	0.254	-27.6	108	0.00	20.33
93		HEXACHLOROBUTADIENE	0.144	0.159	-10.4	139	0.00	22.41
94		1,2,4-TRICHLOROBENZENE	0.096	0.107	-11.5	143	0.00	21.93
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	90	0.00	16.38
96		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1084-CC1080
Account: HLANJPR Mactec **Lab FileID:** 2W25735.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25644.D  M2W1080.M        Wed Sep 30 11:18:46 2009   VOA-CLN-04
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Initial Calibration Summary

Job Number: JA28238 **Sample:** V2W1085-ICC1085
Account: HLANJPR Mactec **Lab FileID:** 2W25764.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Response Factor Report MS2W

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

Calibration Files
0.04=2W25771.D 0.1 =2W25770.D 0.2 =2W25767.D 0.5 =2W25765.D
5.0 =2W25766.D 10. =2W25764.D 20. =2W25768.D 40. =2W25774.D

Compound	0.04	0.1	0.2	0.5	5.0	10.	20.	40.	Avg	%RSD
1) I BROMOCHLOROMETHANE	----------ISTD----------									
2) FREON 115			1.411	0.711	0.701	0.743	0.742	0.642	0.825	35.11
3) DICHLORODIFL			1.734	0.857	1.031	1.006	1.025	0.892	1.091	29.64
4) FREON 152A	0.685	0.919	0.672	0.750	0.879	0.806	0.760	0.721	0.774	11.43
5) CHLORODIFLUO		0.401	0.424	0.412	0.453	0.401	0.377	0.371	0.406	6.93
6) PROPYLENE			1.225	1.053	1.123	0.955	0.880	0.808	1.007	15.46
7) PROPANE			0.466	0.400	0.401	0.338	0.307	0.283	0.366	18.75
8) FREON 114	4.899	4.622	4.064	4.268	4.595	4.130	3.707	3.388	4.209	11.88
9) CHLOROMETHAN		0.378	0.369	0.386	0.430	0.395	0.368	0.348	0.382	6.75
10) VINYL CHLORI	1.770	1.471	1.336	1.433	1.600	1.499	1.348	1.244	1.463	11.35
11) 1,3-BUTADIEN		0.994	0.918	1.001	1.173	1.104	0.951	0.902	1.006	9.89
12) n-BUTANE			2.049	1.943	2.140	1.991	1.722	1.476	1.887	12.99
13) BROMOMETHANE	1.595	1.664	1.406	1.534	1.678	1.547	1.426	1.386	1.530	7.48
14) CHLOROETHANE		0.742	0.731	0.762	0.943	0.887	0.819	0.803	0.812	9.65
15) FREON 123	4.042	3.890	3.517	3.752	4.181	3.806	3.384	3.181	3.719	9.08
16) FREON 123A	2.572	2.489	2.272	2.351	2.489	2.288	2.101	2.074	2.330	7.83
17) TRICHLOROFLU	5.640	5.089	4.563	4.705	5.006	4.387	4.053	3.901	4.668	12.27
18) ISOPROPYL AL			1.879	2.136	2.175	1.969	1.963	1.610	1.955	10.39
19) ACETONE			0.646	0.649	0.685	0.665	0.648	0.652	0.657	2.31
20) PENTANE		1.185	1.250	1.214	1.304	1.201	1.084	1.027	1.181	8.08
21) TVHC as EQUI			8.545	7.917	8.981	8.295	7.843	7.565	8.191	6.34
22) ETHYL ETHER		0.564	0.486	0.598	0.666	0.647	0.623	0.617	0.600	10.00
23) IODOMETHANE	4.147	3.932	3.571	3.787	4.225	3.885	3.635	3.475	3.832	7.00
24) 1,1-DICHLORO	1.484	1.570	1.369	1.360	1.424	1.301	1.226	1.185	1.365	9.41
25) CARBON DISUL	4.634	4.057	3.779	3.923	4.284	3.871	3.665	3.502	3.964	9.08
26) ETHANOL				0.521	0.392	0.373	0.371	0.378	0.407	15.78
27) BROMOETHENE		1.641	1.510	1.566	1.779	1.654	1.530	1.490	1.596	6.41
28) METHYLENE CH			1.415	1.293	1.270	1.152	1.101	1.067	1.216	10.89
29) 3-CHLOROPROP		0.582	0.469	0.537	0.630	0.595	0.575	0.567	0.565	8.99
30) FREON 113	2.782	2.395	2.451	2.463	2.545	2.327	2.164	2.095	2.403	9.01
31) TRANS-1,2-DI			1.407	1.493	1.579	1.500	1.432	1.375	1.464	5.07
32) TERTIARY BUT		2.355	2.040	2.396	2.478	2.342	2.322		2.322	6.41
33) METHYL TERTI	3.622	3.592	3.151	3.264	3.476	3.427	3.519	3.482	3.442	4.67
34) TETRAHYDROFU		0.843	0.773	0.842	1.004	1.004	1.061	1.042	0.938	12.32
35) HEXANE	1.939	1.497	1.579	1.625	1.841	1.733	1.642	1.555	1.676	9.01
36) VINYL ACETAT			0.164	0.231	0.296	0.297	0.295	0.302	0.264	21.20
37) 1,1-DICHLORO	2.146	2.231	2.273	2.324	2.579	2.378	2.246	2.149	2.291	6.14
38) METHYL ETHYL			0.347	0.478	0.553	0.549	0.596	0.607	0.522	18.57
39) cis-1,2-DICH	1.980	1.516	1.385	1.456	1.555	1.476	1.398	1.332	1.512	13.39
40) ETHYL ACETAT			0.250	0.268	0.313	0.307	0.320	0.316	0.296	9.96
41) CHLOROFORM	3.144	2.766	2.609	2.723	2.990	2.798	2.669	2.567	2.783	7.02
42) 2,4-DIMETHYL	1.773	1.671	1.671	1.847	2.142	2.017	1.909	1.776	1.851	8.95
43) 1,1,1-TRICHL	3.403	3.001	2.976	3.146	3.374	3.139	2.959	2.846	3.106	6.44
44) CARBON TETRA	3.602	3.328	3.115	3.286	3.609	3.304	3.091	2.929	3.283	7.29
45) 1,2-DICHLORO	1.858	1.800	1.585	1.792	2.035	1.923	1.873	1.847	1.839	6.97

Initial Calibration Summary

Job Number: JA28238 **Sample:** V2W1085-ICC1085
Account: HLANJPR Mactec **Lab FileID:** 2W25764.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

46) I 1,4-DIFLUOROBENZENE	----------ISTD----------									
47) BENZENE	1.111	0.892	0.860	0.857	1.009	0.936	0.875	0.824	0.920	10.43
48) CYCLOHEXANE		0.507	0.444	0.413	0.456	0.415	0.390	0.377	0.429	10.31
49) 2,3-DIMETHYL			0.153	0.165	0.200	0.187	0.181	0.177	0.177	9.42
50) TRICHLOROETH	0.433	0.407	0.375	0.391	0.435	0.402	0.380	0.370	0.399	6.30
51) 1,2-DICHLORO		0.331	0.284	0.290	0.322	0.303	0.289	0.272	0.299	7.13
52) BROMODICHLOR	0.632	0.575	0.565	0.603	0.730	0.672	0.639	0.619	0.629	8.46
53) 2,2,4-TRIMET	1.113	1.018	1.001	1.074	1.211	1.111	1.024	0.932	1.060	8.08
54) 1,4-DIOXANE		0.202	0.117	0.149	0.177	0.166	0.171	0.171	0.165	15.87
55) METHYL METHA		0.207	0.162	0.195	0.241	0.250	0.268	0.271	0.228	17.84
56) HEPTANE	0.333	0.344	0.330	0.358	0.420	0.398	0.379	0.366	0.366	8.68
57) TVHC as EQUI			1.626	1.894	2.162	2.020	1.927	1.921	1.925	9.17
58) METHYL ISOBU			0.345	0.396	0.459	0.444	0.441	0.428	0.419	10.03
59) cis-1,3-DICH	0.451	0.404	0.365	0.391	0.517	0.499	0.478	0.456	0.445	12.12
60) TOLUENE	0.584	0.598	0.508	0.571	0.702	0.668	0.615	0.581	0.603	9.90
61) trans-1,3-DI	0.394	0.392	0.333	0.368	0.493	0.479	0.472	0.461	0.424	14.04
62) 1,1,2-TRICHL	0.254	0.256	0.251	0.272	0.322	0.298	0.279	0.259	0.274	9.14
63) I CHLOROBENZENE-D5	----------ISTD----------									
64) 2-HEXANONE			0.324	0.504	0.468	0.457	0.469	0.398	0.437	14.91
65) TETRACHLOROE	1.124	1.047	0.972	1.020	1.066	0.941	0.848	0.758	0.972	12.43
66) DIBROMOCHLOR	1.238	1.214	1.088	1.241	1.533	1.391	1.274	1.143	1.265	11.09
67) 1,2-DIBROMOE	1.087	1.070	0.841	0.916	1.137	1.058	0.988	0.874	0.996	10.92
68) OCTANE			0.859	0.953	1.075	0.973	0.884	0.766	0.918	11.59
69) 1,1,1,2-TETR	0.927	0.959	0.895	0.986	1.033	0.943	0.855	0.780	0.922	8.56
70) CHLOROBENZEN	1.936	1.764	1.420	1.501	1.656	1.501	1.338	1.165	1.535	15.94
71) ETHYLBENZENE	2.583	2.489	2.201	2.473	2.830	2.572	2.284	1.940	2.422	11.28
72) m,p-XYLENE	1.027	0.987	0.848	0.959	1.075	0.980	0.878	0.785	0.942	10.33
73) o-XYLENE	0.892	0.944	0.821	0.936	1.004	0.922	0.828	0.756	0.888	9.09
74) STYRENE	0.918	1.095	0.863	0.981	1.421	1.368	1.274	1.135	1.132	18.35
75) NONANE	0.626	0.675	0.847	0.906	0.928	0.876	0.808	0.705	0.796	14.28
76) BROMOFORM	1.300	1.153	0.829	0.924	1.230	1.157	1.094	1.014	1.088	14.47
77) 4-BROMOFLUOR	0.870	0.878	0.876	1.008	1.067	1.080	1.068	1.009	0.982	9.45
78) 1,1,2,2-TETR	0.865	0.874	1.076	1.214	1.064	0.988	0.900	0.782	0.970	14.61
79) ISOPROPYLBEN	2.516	2.552	2.423	2.731	2.729	2.539	2.297	2.000	2.473	9.68
80) 2-CHLOROTOLU	0.448	0.542	0.530	0.563	0.606	0.569	0.534	0.506	0.537	8.70
81) n-PROPYLBENZ	0.408	0.511	0.510	0.603	0.658	0.627	0.599	0.576	0.561	14.36
82) 4-ETHYLTOLUE	1.368	1.823	1.618	1.925	2.090	2.071	1.973	1.690	1.820	13.66
83) 1,3,5-TRIMET	1.528	1.562	1.667	1.968	1.802	1.741	1.662	1.482	1.676	9.52
84) TERT-BUTYLBE	0.336	0.363	0.442	0.526	0.429	0.421	0.422	0.422	0.420	13.37
85) 1,2,4-TRIMET	1.251	1.357	1.420	1.586	1.549	1.533	1.527	1.407	1.454	7.89
86) m-DICHLOROBE	1.023	0.975	0.817	0.842	0.859	0.894	0.904	0.849	0.895	7.93
87) BENZYL CHLOR			0.666	0.709	0.679	0.764	0.888	0.855	0.760	12.28
88) p-DICHLOROBE	0.914	0.944	0.790	0.750	0.743	0.780	0.814	0.776	0.814	9.20
89) SEC-BUTYLBEN	0.263	0.395	0.471	0.519	0.453	0.458	0.456	0.438	0.432	17.71
90) p-ISOPROPYLT			0.399	0.451	0.418	0.428	0.454	0.426	0.430	4.78
91) o-DICHLOROBE	0.818	0.789	0.714	0.737	0.708	0.734	0.766	0.709	0.747	5.44
92) n-BUTYLBENZE		0.210	0.279	0.280	0.253	0.278	0.319	0.305	0.275	12.95
93) HEXACHLOROBU		0.311	0.430	0.381	0.184	0.170	0.201		0.280	39.56
94) 1,2,4-TRICHL			0.140	0.174	0.095	0.099	0.134	0.130	0.129	22.59
95) CHLOROBENZENE-D5(A)	----------ISTD----------									
96) NAPHTHALENE			0.634	0.566	0.366	0.321	0.432	0.464	0.464	25.65

(#) = Out of Range ### Number of calibration levels exceeded format ###

M2W1085.M Tue Oct 06 11:13:23 2009 MS2W

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1086-CC1085
Account: HLANJPR Mactec **Lab FileID:** 2W25783.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\2W25783.D Vial: 10
Acq On : 5 Oct 2009 7:11 am Operator: YOUMINH
Sample : CC1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	80	0.00	9.91
2		FREON 115	0.825	0.709	14.1	77	0.00	4.99
3		DICHLORODIFLUOROMETHANE	1.091	0.978	10.4	78	0.00	4.99
4		FREON 152A	0.774	0.799	-3.2	80	0.01	5.12
5		CHLORODIFLUOROMETHANE	0.406	0.456	-12.3	91	0.00	5.15
6		PROPYLENE	1.007	0.885	12.1	75	0.00	5.20
7		PROPANE	0.366	0.311	15.0	74	0.00	5.22
8		FREON 114	4.209	4.302	-2.2	84	0.00	5.53
9		CHLOROMETHANE	0.382	0.362	5.2	74	0.00	5.43
10		VINYL CHLORIDE	1.463	1.389	5.1	75	0.00	5.67
11		1,3-BUTADIENE	1.006	1.009	-0.3	73	0.00	5.80
12		n-BUTANE	1.887	1.784	5.5	72	0.00	5.86
13		BROMOMETHANE	1.530	1.559	-1.9	81	0.00	6.08
14		CHLOROETHANE	0.812	0.836	-3.0	76	0.00	6.26
15		FREON 123	3.719	3.816	-2.6	81	0.00	6.72
16		FREON 123A	2.330	2.445	-4.9	86	0.00	6.78
17		TRICHLOROFLUOROMETHANE	4.668	4.980	-6.7	91	0.00	7.02
18		ISOPROPYL ALCOHOL	1.955	1.866	4.6	76	0.00	7.06
19		ACETONE	0.657	0.587	10.7	71	0.00	6.84
20		PENTANE	1.181	1.072	9.2	72	0.00	7.36
21	H	TVHC as EQUIV PENTANE	8.191	7.700	6.0	75	0.00	7.37
22		ETHYL ETHER	0.600	0.575	4.2	71	0.00	7.37
23		IODOMETHANE	3.832	3.968	-3.5	82	0.00	7.60
24		1,1-DICHLOROETHYLENE	1.365	1.275	6.6	79	0.00	7.65
25		CARBON DISULFIDE	3.964	3.669	7.4	76	0.00	8.11
26		ETHANOL	0.407	0.333	18.2	72	0.00	6.36
27		BROMOETHENE	1.596	1.701	-6.6	83	0.00	6.61
28		METHYLENE CHLORIDE	1.216	1.098	9.7	77	0.00	7.76
29		3-CHLOROPROPENE	0.565	0.555	1.8	75	0.00	7.88
30		FREON 113	2.403	2.399	0.2	83	0.00	8.02
31		TRANS-1,2-DICHLOROETHYLEN	1.464	1.437	1.8	77	0.00	8.70
32		TERTIARY BUTYL ALCOHOL	2.322	2.404	-3.5	83	0.00	7.66
33		METHYL TERTIARY BUTYL ETH	3.442	3.392	1.5	80	0.00	8.94
34		TETRAHYDROFURAN	0.938	0.845	9.9	68	0.00	10.47
35		HEXANE	1.676	1.551	7.5	72	0.00	9.94
36		VINYL ACETATE	0.264	0.256	3.0	69	0.00	9.02
37		1,1-DICHLOROETHANE	2.291	2.269	1.0	77	0.00	8.91
38		METHYL ETHYL KETONE	0.522	0.510	2.3	75	0.00	9.28
39		cis-1,2-DICHLOROETHYLENE	1.512	1.404	7.1	77	0.00	9.74
40		ETHYL ACETATE	0.296	0.275	7.1	72	0.00	9.92
41		CHLOROFORM	2.783	2.874	-3.3	83	0.00	10.03
42		2,4-DIMETHYLPENTANE	1.851	1.823	1.5	73	0.00	10.83

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1086-CC1085
Account: HLANJPR Mactec **Lab FileID:** 2W25783.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	3.106	3.378	-8.8	87	0.00	11.06
44		CARBON TETRACHLORIDE	3.283	3.677	-12.0	90	0.00	11.68
45		1,2-DICHLOROETHANE	1.839	2.032	-10.5	85	0.00	10.79
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	77	0.00	11.85
47		BENZENE	0.920	0.893	2.9	73	0.00	11.52
48		CYCLOHEXANE	0.429	0.402	6.3	74	0.00	11.81
49		2,3-DIMETHYLPENTANE	0.177	0.173	2.3	71	0.00	12.02
50		TRICHLOROETHYLENE	0.399	0.411	-3.0	78	0.00	12.59
51		1,2-DICHLOROPROPANE	0.299	0.270	9.7	68	0.00	12.35
52		BROMODICHLOROMETHANE	0.629	0.716	-13.8	82	0.00	12.55
53		2,2,4-TRIMETHYLPENTANE	1.060	1.040	1.9	72	0.00	12.61
54		1,4-DIOXANE	0.165	0.169	-2.4	78	0.00	12.60
55		METHYL METHACRYLATE	0.228	0.234	-2.6	72	0.00	12.75
56		HEPTANE	0.366	0.364	0.5	70	0.00	12.86
57	H	TVHC as EQUIV HEPTANE	1.925	1.954	-1.5	74	0.00	12.86
58		METHYL ISOBUTYL KETONE	0.419	0.435	-3.8	75	0.00	13.49
59		cis-1,3-DICHLOROPROPENE	0.445	0.478	-7.4	73	0.00	13.46
60		TOLUENE	0.603	0.602	0.2	69	0.00	14.49
61		trans-1,3-DICHLOROPROPENE	0.424	0.470	-10.8	75	0.00	13.99
62		1,1,2-TRICHLOROETHANE	0.274	0.270	1.5	69	0.00	14.19
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	73	0.00	16.38
64		2-HEXANONE	0.437	0.444	-1.6	71	0.00	14.74
65		TETRACHLOROETHYLENE	0.972	0.981	-0.9	76	0.00	15.70
66		DIBROMOCHLOROMETHANE	1.265	1.512	-19.5	79	0.00	14.95
67		1,2-DIBROMOETHANE	0.996	1.042	-4.6	72	0.00	15.22
68		OCTANE	0.918	0.883	3.8	66	0.00	15.48
69		1,1,1,2-TETRACHLOROETHANE	0.922	0.985	-6.8	76	0.00	16.40
70		CHLOROBENZENE	1.535	1.468	4.4	71	0.00	16.43
71		ETHYLBENZENE	2.422	2.465	-1.8	70	0.00	16.82
72		m,p-XYLENE	0.942	0.910	3.4	67	0.00	17.01
73		o-XYLENE	0.888	0.837	5.7	66	0.00	17.53
74		STYRENE	1.132	1.239	-9.5	66	0.00	17.41
75		NONANE	0.796	0.738	7.3	61	0.00	17.72
76		BROMOFORM	1.088	1.202	-10.5	75	0.00	17.13
77	S	4-BROMOFLUOROBENZENE	0.982	1.014	-3.3	68	0.00	18.03
78		1,1,2,2-TETRACHLOROETHANE	0.970	0.852	12.2	63	0.00	17.53
79		ISOPROPYLBENZENE	2.473	2.343	5.3	67	0.00	18.15
80		2-CHLOROTOLUENE	0.537	0.519	3.4	66	0.00	18.68
81		n-PROPYLBENZENE	0.561	0.554	1.2	64	0.00	18.70
82		4-ETHYLTOLUENE	1.820	1.868	-2.6	66	0.00	18.86
83		1,3,5-TRIMETHYLBENZENE	1.676	1.628	2.9	68	0.00	18.94
84		TERT-BUTYLBENZENE	0.420	0.372	11.4	64	0.00	19.39
85		1,2,4-TRIMETHYLBENZENE	1.454	1.442	0.8	68	0.00	19.40
86		m-DICHLOROBENZENE	0.895	0.824	7.9	67	0.00	19.58
87		BENZYL CHLORIDE	0.760	0.763	-0.4	73	0.00	19.55
88		p-DICHLOROBENZENE	0.814	0.722	11.3	67	0.00	19.65
89		SEC-BUTYLBENZENE	0.432	0.411	4.9	65	0.00	19.69
90		p-ISOPROPYLTOLUENE	0.430	0.398	7.4	67	0.00	19.86
91		o-DICHLOROBENZENE	0.747	0.689	7.8	68	0.00	20.03
92		n-BUTYLBENZENE	0.275	0.265	3.6	69	0.00	20.33
93		HEXACHLOROBUTADIENE	0.280	0.213	23.9	91	0.00	22.41
94		1,2,4-TRICHLOROBENZENE	0.129	0.121	6.2	89	0.00	21.92
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	73	0.00	16.38
96		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V2W1086-CC1085
Account: HLANJPR Mactec **Lab FileID:** 2W25783.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25764.D  M2W1085.M        Tue Oct 06 11:56:28 2009   MS2W
```

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1086-ICV1085
Account: HLANJPR Mactec **Lab FileID:** 2W25784.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : ICV1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	74	0.00	9.91
2		FREON 115	0.825	0.844	-2.3	84	0.00	5.00
3		DICHLORODIFLUOROMETHANE	1.091	1.117	-2.4	82	0.00	5.00
4		FREON 152A	0.774	0.801	-3.5	74	0.00	5.11
5		CHLORODIFLUOROMETHANE	0.406	0.484	-19.2	89	0.00	5.16
6		PROPYLENE	1.007	0.891	11.5	69	0.01	5.20
7		PROPANE	0.366	0.309	15.6	68	0.01	5.23
8		FREON 114	4.209	4.277	-1.6	77	0.00	5.54
9		CHLOROMETHANE	0.382	0.338	11.5	64	0.02	5.45
10		VINYL CHLORIDE	1.463	1.303	10.9	64	0.01	5.67
11		1,3-BUTADIENE	1.006	0.896	10.9	60	0.00	5.81
12		n-BUTANE	1.887	1.556	17.5	58	0.00	5.86
13		BROMOMETHANE	1.530	1.477	3.5	71	0.00	6.09
14		CHLOROETHANE	0.812	0.730	10.1	61	0.00	6.26
15		FREON 123	3.719	3.460	7.0	67	0.00	6.73
16		FREON 123A	2.330	2.380	-2.1	77	0.00	6.78
17		TRICHLOROFLUOROMETHANE	4.668	5.051	-8.2	85	0.00	7.02
18		ISOPROPYL ALCOHOL	1.955	1.724	11.8	65	0.01	7.07
19		ACETONE	0.657	0.496	24.5	55	0.00	6.85
20		PENTANE	1.181	0.954	19.2	59	0.00	7.36
21	H	TVHC as EQUIV PENTANE	8.191	7.134	12.9	64	0.00	7.37
22		ETHYL ETHER	0.600	0.558	7.0	64	0.00	7.37
23		IODOMETHANE	3.832	3.915	-2.2	75	0.00	7.60
24		1,1-DICHLOROETHYLENE	1.365	1.218	10.8	69	0.00	7.66
25		CARBON DISULFIDE	3.964	3.470	12.5	66	0.00	8.12
26		ETHANOL	0.407	0.304	25.3	60	0.01	6.37
27		BROMOETHENE	1.596	1.599	-0.2	72	0.00	6.61
28		METHYLENE CHLORIDE	1.216	1.051	13.6	68	0.00	7.76
29		3-CHLOROPROPENE	0.565	0.532	5.8	66	0.01	7.89
30		FREON 113	2.403	2.425	-0.9	77	0.00	8.02
31		TRANS-1,2-DICHLOROETHYLEN	1.464	1.394	4.8	69	0.00	8.70
32		TERTIARY BUTYL ALCOHOL	2.322	2.356	-1.5	75	0.01	7.67
33		METHYL TERTIARY BUTYL ETH	3.442	3.465	-0.7	75	0.00	8.95
34		TETRAHYDROFURAN	0.938	0.834	11.1	62	0.00	10.47
35		HEXANE	1.676	1.506	10.1	64	0.00	9.94
36		VINYL ACETATE	0.264	0.262	0.8	65	0.00	9.02
37		1,1-DICHLOROETHANE	2.291	2.214	3.4	69	0.00	8.91
38		METHYL ETHYL KETONE	0.522	0.494	5.4	67	0.00	9.28
39		cis-1,2-DICHLOROETHYLENE	1.512	1.382	8.6	69	0.00	9.74
40		ETHYL ACETATE	0.296	0.260	12.2	63	0.00	9.92
41		CHLOROFORM	2.783	2.931	-5.3	78	0.00	10.03
42		2,4-DIMETHYLPENTANE	1.851	1.772	4.3	65	0.00	10.84

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1086-ICV1085
Account: HLANJPR Mactec **Lab FileID:** 2W25784.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	3.106	3.596	-15.8	85	0.00	11.06
44		CARBON TETRACHLORIDE	3.283	3.875	-18.0	87	0.00	11.68
45		1,2-DICHLOROETHANE	1.839	2.169	-17.9	84	0.00	10.79
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	73	0.00	11.85
47		BENZENE	0.920	0.867	5.8	67	0.00	11.53
48		CYCLOHEXANE	0.429	0.394	8.2	69	0.00	11.81
49		2,3-DIMETHYLPENTANE	0.177	0.171	3.4	66	0.00	12.02
50		TRICHLOROETHYLENE	0.399	0.412	-3.3	75	0.00	12.59
51		1,2-DICHLOROPROPANE	0.299	0.275	8.0	66	0.00	12.35
52		BROMODICHLOROMETHANE	0.629	0.736	-17.0	80	0.00	12.55
53		2,2,4-TRIMETHYLPENTANE	1.060	1.011	4.6	66	0.00	12.61
54		1,4-DIOXANE	0.165	0.168	-1.8	74	0.01	12.61
55		METHYL METHACRYLATE	0.228	0.235	-3.1	69	0.00	12.75
56		HEPTANE	0.366	0.355	3.0	65	0.00	12.86
57	H	TVHC as EQUIV HEPTANE	1.925	1.929	-0.2	69	0.00	12.86
58		METHYL ISOBUTYL KETONE	0.419	0.431	-2.9	71	0.00	13.49
59		cis-1,3-DICHLOROPROPENE	0.445	0.504	-13.3	73	0.00	13.46
60		TOLUENE	0.603	0.653	-8.3	71	0.00	14.49
61		trans-1,3-DICHLOROPROPENE	0.424	0.508	-19.8	77	0.00	13.99
62		1,1,2-TRICHLOROETHANE	0.274	0.288	-5.1	70	0.00	14.19
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	77	0.00	16.38
64		2-HEXANONE	0.437	0.416	4.8	70	0.00	14.74
65		TETRACHLOROETHYLENE	0.972	0.981	-0.9	80	0.00	15.70
66		DIBROMOCHLOROMETHANE	1.265	1.512	-19.5	83	0.00	14.95
67		1,2-DIBROMOETHANE	0.996	1.051	-5.5	76	0.00	15.22
68		OCTANE	0.918	0.852	7.2	67	0.00	15.48
69		1,1,1,2-TETRACHLOROETHANE	0.922	1.003	-8.8	81	0.00	16.40
70		CHLOROBENZENE	1.535	1.506	1.9	77	0.00	16.43
71		ETHYLBENZENE	2.422	2.528	-4.4	75	0.00	16.82
72		m,p-XYLENE	0.942	0.938	0.4	73	0.00	17.02
73		o-XYLENE	0.888	0.909	-2.4	75	0.00	17.53
74		STYRENE	1.132	1.344	-18.7	75	0.00	17.41
75		NONANE	0.796	0.803	-0.9	70	0.00	17.72
76		BROMOFORM	1.088	1.271	-16.8	84	0.00	17.13
77	S	4-BROMOFLUOROBENZENE	0.982	1.133	-15.4	80	0.00	18.03
78		1,1,2,2-TETRACHLOROETHANE	0.970	0.917	5.5	71	0.00	17.53
79		ISOPROPYLBENZENE	2.473	2.608	-5.5	79	0.00	18.15
80		2-CHLOROTOLUENE	0.537	0.595	-10.8	80	0.00	18.68
81		n-PROPYLBENZENE	0.561	0.640	-14.1	78	0.00	18.71
82		4-ETHYLTOLUENE	1.820	2.138	-17.5	79	0.00	18.86
83		1,3,5-TRIMETHYLBENZENE	1.676	1.839	-9.7	81	0.00	18.94
84		TERT-BUTYLBENZENE	0.420	0.428	-1.9	78	0.00	19.39
85		1,2,4-TRIMETHYLBENZENE	1.454	1.635	-12.4	82	0.00	19.40
86		m-DICHLOROBENZENE	0.895	0.974	-8.8	83	0.00	19.58
87		BENZYL CHLORIDE	0.760	0.870	-14.5	87	0.00	19.55
88		p-DICHLOROBENZENE	0.814	0.864	-6.1	85	0.00	19.66
89		SEC-BUTYLBENZENE	0.432	0.478	-10.6	80	0.00	19.69
90		p-ISOPROPYLTOLUENE	0.430	0.461	-7.2	82	0.00	19.86
91		o-DICHLOROBENZENE	0.747	0.818	-9.5	85	0.00	20.03
92		n-BUTYLBENZENE	0.275	0.310	-12.7	85	0.00	20.33
93		HEXACHLOROBUTADIENE	0.280	0.245	12.5	110	0.00	22.41
94		1,2,4-TRICHLOROBENZENE	0.129	0.150	-16.3	116	0.00	21.92
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	77	0.00	16.38
96		NAPHTHALENE		----------NA----------				

Initial Calibration Verification

Job Number: JA28238 **Sample:** V2W1086-ICV1085
Account: HLANJPR Mactec **Lab FileID:** 2W25784.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

```
(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25764.D  M2W1085.M        Tue Oct 06 11:12:57 2009   MS2W
```

Initial Calibration Summary

Job Number: JA28238 **Sample:** V3W523-ICC523
Account: HLANJPR Mactec **Lab FileID:** 3W12851.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Response Factor Report MS3W

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

Calibration Files
0.04=3W12858.D 0.1 =3W12857.D 0.2 =3W12854.D 0.5 =3W12852.D
5 =3W12856.D 10 =3W12851.D 20 =3W12855.D 40 =3W12861.D

Compound	0.04	0.1	0.2	0.5	5	10	20	40	Avg	%RSD
1) I BROMOCHLOROMETHANE	----------ISTD----------									
2) FREON 115	3.375	2.849	2.896	2.887	2.879	2.885	2.910	2.814	2.937	6.12
3) FREON 152A	1.030	0.933	0.845	0.909	0.905	0.911	0.936	0.930	0.925	5.55
4) CHLORODIFLUO	0.498	0.472	0.447	0.445	0.407	0.437	0.438	0.444	0.449	5.95
5) DICHLORODIFL	4.456	3.876	3.882	3.962	3.942	4.082	4.069	3.979	4.031	4.66
6) PROPANE			0.508	0.501	0.501	0.491	0.494	0.500	0.499	1.23
7) PROPYLENE	1.337	1.512	1.464	1.408	1.442	1.388	1.445	1.420	1.427	3.68
8) FREON 114	4.675	4.019	4.246	4.284	4.115	4.152	4.286	4.075	4.232	4.82
9) CHLOROMETHAN	2.206	1.533	1.408	1.307	1.301	1.261	1.333	1.313	1.458	21.54
10) VINYL CHLORI	1.405	1.383	1.430	1.465	1.491	1.449	1.515	1.474	1.451	3.04
11) 1,3-BUTADIEN	1.030	0.964	0.988	1.035	1.056	1.029	1.089	1.095	1.036	4.37
12) n-BUTANE			2.493	2.385	2.197	2.085	2.171	2.198	2.255	6.76
13) BROMOMETHANE	1.510	1.429	1.374	1.466	1.436	1.408	1.463	1.406	1.437	2.97
14) CHLOROETHANE	0.689	0.678	0.777	0.769	0.750	0.748	0.799	0.785	0.749	5.88
15) FREON 123	3.263	3.076	3.086	3.409	3.141	3.153	3.268	3.165	3.195	3.50
16) FREON 123A	1.885	1.999	1.902	2.161	1.963	2.005	2.079	2.035	2.004	4.52
17) TRICHLOROFLU	4.654	3.877	3.793	4.053	3.788	3.965	4.074	4.035	4.030	6.86
18) ISOPROPYL AL	2.056	1.925	1.689	1.914	1.637	1.780	2.018	2.175	1.899	9.82
19) ACETONE	0.661	0.533	0.488	0.575	0.497	0.537	0.600	0.610	0.563	10.66
20) PENTANE		1.260	1.548	1.392	1.332	1.273	1.384	1.364	1.365	7.02
21) TVHC as EQUI		6.375	6.334	6.537	8.409	8.374	9.153	9.085	7.752	16.60
22) ETHYL ETHER		0.529	0.453	0.584	0.534	0.548	0.609	0.610	0.552	10.01
23) IODOMETHANE	3.525	3.779	3.596	3.796	3.979	3.896	4.128	4.063	3.846	5.55
24) 1,1-DICHLORO	1.395	1.381	1.324	1.306	1.281	1.232	1.310	1.290	1.315	4.02
25) CARBON DISUL	3.982	4.074	3.805	3.795	3.971	3.689	3.930	3.886	3.892	3.18
26) ETHANOL			0.611	0.532	0.345	0.368	0.413	0.443	0.452	22.53
27) BROMOETHENE	1.231	1.351	1.358	1.485	1.436	1.383	1.450	1.395	1.386	5.62
28) METHYLENE CH			1.430	1.235	1.148	1.099	1.175	1.156	1.207	9.77
29) 3-CHLOROPROP		0.493	0.542	0.548	0.569	0.550	0.593	0.591	0.555	6.14
30) FREON 113	2.107	2.296	2.248	2.396	2.395	2.400	2.523	2.509	2.359	5.86
31) TRANS-1,2-DI	1.357	1.363	1.277	1.300	1.376	1.321	1.401	1.411	1.351	3.53
32) TERTIARY BUT	1.660	1.977	1.958	2.504	2.251	2.428	2.620	2.320	2.215	14.63
33) METHYL TERTI	3.106	3.184	2.740	3.314	3.033	3.310	3.702	3.934	3.290	11.49
34) TETRAHYDROFU		0.350	0.323	0.472	0.467	0.507	0.596	0.654	0.481	24.95
35) HEXANE	1.889	1.772	1.701	1.731	1.895	1.785	1.901	1.899	1.822	4.58
36) VINYL ACETAT		0.164	0.121	0.210	0.238	0.251	0.284	0.302	0.224	28.76
37) 1,1-DICHLORO	2.165	2.294	2.216	2.343	2.383	2.319	2.453	2.497	2.334	4.79
38) METHYL ETHYL			0.267	0.455	0.443	0.492	0.577	0.639	0.479	26.82
39) cis-1,2-DICH	1.418	1.267	1.245	1.246	1.335	1.309	1.407	1.447	1.334	6.09
40) DIISOPROPYL	2.605	2.941	2.537	3.268	3.036	3.195	3.621	3.773	3.122	14.06
41) ETHYL ACETAT			0.250	0.307	0.258	0.292	0.351	0.394	0.309	18.01
42) CHLOROFORM	2.813	2.524	2.642	2.699	2.740	2.799	2.932	3.021	2.771	5.70
43) 2,4-DIMETHYL	1.981	2.039	1.957	1.984	2.088	2.029	2.197	2.305	2.072	5.84
44) 1,1,1-TRICHL	2.942	2.652	2.785	2.916	2.905	3.063	3.184	3.327	2.972	7.25
45) CARBON TETRA	2.738	2.655	2.801	2.999	3.077	3.344	3.505	3.688	3.101	12.17
46) 1,2-DICHLORO	1.582	1.663	1.597	1.787	1.762	1.904	2.027	2.148	1.809	11.28

Initial Calibration Summary

Job Number: JA28238 **Sample:** V3W523-ICC523
Account: HLANJPR Mactec **Lab FileID:** 3W12851.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

47) I 1,4-DIFLUOROBENZENE	----------ISTD----------									
48) BENZENE	0.826	0.809	0.810	0.834	0.846	0.815	0.863	0.885	0.836	3.28
49) CYCLOHEXANE	0.445	0.402	0.412	0.395	0.420	0.398	0.426	0.435	0.417	4.34
50) 2,3-DIMETHYL	0.165	0.182	0.232	0.191	0.182	0.173	0.184	0.190	0.187	10.66
51) TRICHLOROETH	0.331	0.374	0.370	0.360	0.385	0.388	0.404	0.414	0.378	6.84
52) 1,2-DICHLORO	0.327	0.303	0.287	0.290	0.289	0.284	0.307	0.321	0.301	5.44
53) BROMODICHLOR	0.489	0.505	0.518	0.569	0.609	0.647	0.656	0.676	0.584	12.65
54) 2,2,4-TRIMET	1.285	1.167	1.231	1.216	1.249	1.190	1.250	1.264	1.231	3.18
55) 1,4-DIOXANE		0.152	0.148	0.155	0.159	0.163	0.176	0.201	0.165	11.27
56) HEPTANE	0.570	0.536	0.472	0.454	0.473	0.455	0.472	0.478	0.489	8.51
57) TVHC as EQUI		3.135	2.705	2.904	3.026	3.158	3.453	3.647	3.147	10.16
58) METHYL METHA			0.122	0.174	0.198	0.232	0.275	0.308	0.218	31.08
59) METHYL ISOBU			0.309	0.397	0.418	0.472	0.521	0.586	0.451	21.65
60) cis-1,3-DICH	0.374	0.375	0.365	0.372	0.430	0.457	0.489	0.517	0.423	14.16
61) TOLUENE	0.471	0.489	0.487	0.544	0.567	0.586	0.632	0.666	0.555	12.85
62) trans-1,3-DI	0.304	0.336	0.309	0.334	0.385	0.441	0.483	0.528	0.390	21.68
63) 1,1,2-TRICHL	0.181	0.217	0.231	0.264	0.265	0.275	0.296	0.313	0.255	17.01
64) I CHLOROBENZENE-D5	----------ISTD----------									
65) 2-HEXANONE		0.686	0.685	0.826	0.893	0.934	0.981	1.008	0.859	15.41
66) TETRACHLOROE	0.923	1.106	1.217	1.093	1.088	1.039	1.020	0.931	1.052	9.22
67) DIBROMOCHLOR	0.925	1.000	1.087	1.188	1.367	1.413	1.420	1.323	1.215	15.98
68) 1,2-DIBROMOE	0.787	0.880	0.878	0.916	1.042	1.066	1.098	1.029	0.962	11.57
69) OCTANE	1.323	1.337	1.467	1.477	1.402	1.263	1.239	1.106	1.327	9.38
70) 1,1,1,2-TETR	0.847	0.910	1.072	1.169	1.017	1.016	1.024	0.948	1.000	9.93
71) CHLOROBENZEN	1.486	1.652	1.618	1.665	1.668	1.628	1.659	1.521	1.612	4.33
72) ETHYLBENZENE	2.072	2.393	2.419	2.720	2.552	2.548	2.575	2.355	2.454	7.92
73) m,p-XYLENE	0.724	0.870	0.908	1.034	0.972	0.985	1.007	0.936	0.930	10.61
74) o-XYLENE	0.638	0.793	0.848	1.039	0.939	0.950	0.963	0.905	0.884	14.08
75) STYRENE			0.679	0.866	1.194	1.317	1.403	1.335	1.132	25.84
76) NONANE	1.016	1.062	1.369	1.603	1.300	1.222	1.177	1.018	1.221	16.51
77) BROMOFORM	0.775	0.874	0.840	0.993	1.166	1.313	1.350	1.276	1.073	21.51
78) 4-BROMOFLUOR	0.978	1.002	0.981	1.029	1.134	1.152	1.119	0.998	1.049	6.98
79) 1,1,2,2-TETR		0.811	1.233	1.447	1.093	1.121	1.132	1.075	1.130	16.84
80) 1,2,3-TRICHL	0.687	0.783	0.947	1.112	0.860	0.896	0.909	0.850	0.881	14.06
81) ISOPROPYLBEN	1.869	2.324	2.635	3.350	2.658	2.732	2.738	2.522	2.604	16.04
82) 2-CHLOROTOLU	0.406	0.448	0.592	0.700	0.622	0.644	0.658	0.618	0.586	17.68
83) n-PROPYLBENZ			0.570	0.735	0.663	0.705	0.733	0.699	0.684	9.00
84) 4-ETHYLTOLUE			1.840	2.461	2.151	2.335	2.410	2.275	2.245	10.06
85) 1,3,5-TRIMET		1.341	1.824	2.444	1.811	1.961	1.997	1.853	1.890	17.24
86) tert-BUTYLBE		0.325	0.499	0.674	0.466	0.507	0.530	0.505	0.501	20.43
87) 1,2,4-TRIMET		1.123	1.600	2.116	1.615	1.795	1.857	1.735	1.692	18.02
88) m-DICHLOROBE		0.834	1.054	1.167	1.015	1.152	1.209	1.155	1.084	11.92
89) BENZYL CHLOR		0.856	0.944	1.004	0.888	1.106	1.217	1.244	1.037	14.99
90) p-DICHLOROBE		0.833	1.118	1.080	0.898	1.062	1.128	1.095	1.031	11.30
91) sec-BUTYLBEN		0.360	0.552	0.730	0.533	0.585	0.611	0.590	0.566	19.56
92) p-ISOPROPYLT			0.497	0.687	0.490	0.565	0.612	0.600	0.575	12.99
93) o-DICHLOROBE		0.777	1.028	1.144	0.901	0.999	1.032	0.993	0.982	11.74
94) n-BUTYLBENZE		0.163	0.331	0.443	0.340	0.417	0.462	0.467	0.375	28.91
95) HEXACHLOROBU		0.241	0.518	0.605	0.279	0.375	0.381	0.286	0.384	34.96
96) 1,2,4-TRICHL		0.182	0.177	0.250	0.143	0.181	0.197	0.181	0.187	17.15
97) I CHLOROBENZENE-D5 (a)	----------ISTD----------									
98) NAPHTHALENE			0.434	0.710	0.354	0.410	0.529	0.702	0.523	29.12

(#) = Out of Range ### Number of calibration levels exceeded format ###

M3W523.M Tue Oct 06 12:20:35 2009 MS3W

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V3W524-CC523
Account: HLANJPR Mactec **Lab FileID:** 3W12867.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	117	0.00	7.76
2		FREON 115	2.937	2.812	4.3	114	0.00	4.07
3		FREON 152A	0.925	0.918	0.8	118	0.00	4.16
4		CHLORODIFLUOROMETHANE	0.449	0.414	7.8	111	0.00	4.19
5		DICHLORODIFLUOROMETHANE	4.031	3.899	3.3	112	0.00	4.26
6		PROPANE	0.499	0.542	-8.6	129	0.00	4.22
7		PROPYLENE	1.427	1.537	-7.7	130	0.00	4.21
8		FREON 114	4.232	4.092	3.3	115	0.00	4.44
9		CHLOROMETHANE	1.458	1.311	10.1	122	0.00	4.38
10		VINYL CHLORIDE	1.451	1.555	-7.2	126	0.00	4.53
11		1,3-BUTADIENE	1.036	1.136	-9.7	129	0.00	4.61
12		n-BUTANE	2.255	2.414	-7.1	135	0.00	4.64
13		BROMOMETHANE	1.437	1.446	-0.6	120	0.00	4.82
14		CHLOROETHANE	0.749	0.824	-10.0	129	0.00	4.92
15		FREON 123	3.195	3.344	-4.7	124	0.00	5.25
16		FREON 123A	2.004	2.001	0.1	117	0.00	5.29
17		TRICHLOROFLUOROMETHANE	4.030	3.896	3.3	115	0.00	5.46
18		ISOPROPYL ALCOHOL	1.899	2.052	-8.1	135	-0.02	5.51
19		ACETONE	0.563	0.600	-6.6	131	0.00	5.34
20		PENTANE	1.365	1.545	-13.2	142	0.00	5.67
21	H	TVHC as EQUIV PENTANE	7.752	9.818	-26.7	137	0.00	5.67
22		ETHYL ETHER	0.552	0.605	-9.6	129	0.00	5.69
23		IODOMETHANE	3.846	3.796	1.3	114	0.00	5.88
24		1,1-DICHLOROETHYLENE	1.315	1.284	2.4	122	0.00	5.93
25		CARBON DISULFIDE	3.892	3.961	-1.8	126	0.00	6.26
26		ETHANOL	0.452	0.430	4.9	137	-0.02	5.02
27		BROMOETHENE	1.386	1.424	-2.7	121	0.00	5.17
28		METHYLENE CHLORIDE	1.207	1.155	4.3	123	0.00	6.03
29		3-CHLOROPROPENE	0.555	0.589	-6.1	125	0.00	6.10
30		FREON 113	2.359	2.296	2.7	112	0.00	6.19
31		TRANS-1,2-DICHLOROETHYLEN	1.351	1.337	1.0	118	0.00	6.72
32		TERTIARY BUTYL ALCOHOL	2.215	2.605	-17.6	126	-0.02	5.93
33		METHYL TERTIARY BUTYL ETH	3.290	3.411	-3.7	121	0.00	6.89
34		TETRAHYDROFURAN	0.481	0.552	-14.8	127	-0.01	8.18
35		HEXANE	1.822	2.022	-11.0	133	0.00	7.67
36		VINYL ACETATE	0.224	0.260	-16.1	121	0.00	7.00
37		1,1-DICHLOROETHANE	2.334	2.498	-7.0	126	0.00	6.89
38		METHYL ETHYL KETONE	0.479	0.521	-8.8	124	-0.01	7.20
39		cis-1,2-DICHLOROETHYLENE	1.334	1.327	0.5	119	0.00	7.62
40		DIISOPROPYL ETHER	3.122	3.743	-19.9	137	-0.01	7.67
41		ETHYL ACETATE	0.309	0.322	-4.2	129	-0.01	7.75
42		CHLOROFORM	2.771	2.795	-0.9	117	-0.01	7.84

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V3W524-CC523
Account: HLANJPR Mactec **Lab FileID:** 3W12867.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		2,4-DIMETHYLPENTANE	2.072	2.287	-10.4	132	0.00	8.43
44		1,1,1-TRICHLOROETHANE	2.972	2.952	0.7	113	0.00	8.71
45		CARBON TETRACHLORIDE	3.101	3.144	-1.4	110	0.00	9.27
46		1,2-DICHLOROETHANE	1.809	1.950	-7.8	120	0.00	8.49
47	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	115	0.00	9.46
48		BENZENE	0.836	0.890	-6.5	125	0.00	9.14
49		CYCLOHEXANE	0.417	0.460	-10.3	132	0.00	9.32
50		2,3-DIMETHYLPENTANE	0.187	0.192	-2.7	127	0.00	9.50
51		TRICHLOROETHYLENE	0.378	0.396	-4.8	117	0.00	10.10
52		1,2-DICHLOROPROPANE	0.301	0.317	-5.3	128	-0.01	9.86
53		BROMODICHLOROMETHANE	0.584	0.653	-11.8	116	0.00	10.08
54		2,2,4-TRIMETHYLPENTANE	1.231	1.353	-9.9	131	-0.01	10.02
55		1,4-DIOXANE	0.165	0.170	-3.0	120	-0.01	10.13
56		HEPTANE	0.489	0.541	-10.6	136	-0.01	10.27
57	H	TVHC as EQUIV HEPTANE	3.147	3.509	-11.5	127	0.00	10.28
58		METHYL METHACRYLATE	0.218	0.251	-15.1	124	0.00	10.29
59		METHYL ISOBUTYL KETONE	0.451	0.537	-19.1	130	-0.01	10.91
60		cis-1,3-DICHLOROPROPENE	0.423	0.477	-12.8	120	0.00	10.94
61		TOLUENE	0.555	0.595	-7.2	116	0.00	11.88
62		trans-1,3-DICHLOROPROPENE	0.390	0.445	-14.1	116	0.00	11.45
63		1,1,2-TRICHLOROETHANE	0.255	0.285	-11.8	119	-0.01	11.62
64	I	CHLOROBENZENE-D5	1.000	1.000	0.0	114	-0.01	13.71
65		2-HEXANONE	0.859	1.063	-23.7	130	-0.01	12.11
66		TETRACHLOROETHYLENE	1.052	0.962	8.6	106	0.00	13.03
67		DIBROMOCHLOROMETHANE	1.215	1.355	-11.5	109	-0.01	12.33
68		1,2-DIBROMOETHANE	0.962	1.040	-8.1	111	0.00	12.55
69		OCTANE	1.327	1.482	-11.7	134	0.00	12.78
70		1,1,1,2-TETRACHLOROETHANE	1.000	0.970	3.0	109	0.00	13.73
71		CHLOROBENZENE	1.612	1.603	0.6	112	0.00	13.76
72		ETHYLBENZENE	2.454	2.531	-3.1	113	0.00	14.12
73		m,p-XYLENE	0.930	0.955	-2.7	111	0.00	14.30
74		o-XYLENE	0.884	0.910	-2.9	109	-0.01	14.81
75		STYRENE	1.132	1.282	-13.3	111	0.00	14.72
76		NONANE	1.221	1.370	-12.2	128	-0.01	14.97
77		BROMOFORM	1.073	1.166	-8.7	101	0.00	14.43
78	S	4-BROMOFLUOROBENZENE	1.049	1.091	-4.0	108	-0.01	15.34
79		1,1,2,2-TETRACHLOROETHANE	1.130	1.116	1.2	113	-0.01	14.84
80		1,2,3-TRICHLOROPROPANE	0.881	0.903	-2.5	115	-0.01	14.97
81		ISOPROPYLBENZENE	2.604	2.592	0.5	108	0.00	15.46
82		2-CHLOROTOLUENE	0.586	0.601	-2.6	106	0.00	16.04
83		n-PROPYLBENZENE	0.684	0.656	4.1	106	-0.01	16.05
84		4-ETHYLTOLUENE	2.245	2.193	2.3	107	0.00	16.22
85		1,3,5-TRIMETHYLBENZENE	1.890	1.849	2.2	108	-0.01	16.31
86		tert-BUTYLBENZENE	0.501	0.467	6.8	105	0.00	16.79
87		1,2,4-TRIMETHYLBENZENE	1.692	1.673	1.1	106	-0.01	16.80
88		m-DICHLOROBENZENE	1.084	1.014	6.5	100	0.00	17.01
89		BENZYL CHLORIDE	1.037	1.036	0.1	107	0.00	17.00
90		p-DICHLOROBENZENE	1.031	0.930	9.8	100	-0.01	17.08
91		sec-BUTYLBENZENE	0.566	0.531	6.2	104	0.00	17.11
92		p-ISOPROPYLTOLUENE	0.575	0.514	10.6	104	-0.01	17.29
93		o-DICHLOROBENZENE	0.982	0.879	10.5	100	0.00	17.50
94		n-BUTYLBENZENE	0.375	0.373	0.5	102	0.00	17.80
95		HEXACHLOROBUTADIENE	0.384	0.311	19.0	95	0.00	20.03
96		1,2,4-TRICHLOROBENZENE	0.187	0.149	20.3	94	0.00	19.49
97	I	CHLOROBENZENE-D5 (a)	1.000	1.000	0.0	114	-0.01	13.71
98		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28238 **Sample:** V3W524-CC523
Account: HLANJPR Mactec **Lab FileID:** 3W12867.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

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   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    3W12851.D  M3W523.M         Tue Oct 06 13:02:49 2009   MS3W
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Initial Calibration Verification

Job Number: JA28238 **Sample:** V3W524-ICV523
Account: HLANJPR Mactec **Lab FileID:** 3W12868.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	125	0.00	7.76
2		FREON 115	2.937	2.592	11.7	112	0.00	4.08
3		FREON 152A	0.925	0.889	3.9	122	0.00	4.16
4		CHLORODIFLUOROMETHANE	0.449	0.387	13.8	111	0.00	4.19
5		DICHLORODIFLUOROMETHANE	4.031	3.523	12.6	108	0.00	4.26
6		PROPANE	0.499	0.489	2.0	124	0.00	4.23
7		PROPYLENE	1.427	1.434	-0.5	129	0.00	4.21
8		FREON 114	4.232	3.865	8.7	116	0.00	4.44
9		CHLOROMETHANE	1.458	1.269	13.0	126	0.00	4.38
10		VINYL CHLORIDE	1.451	1.476	-1.7	127	0.00	4.53
11		1,3-BUTADIENE	1.036	1.091	-5.3	132	0.00	4.62
12		n-BUTANE	2.255	2.169	3.8	130	0.00	4.64
13		BROMOMETHANE	1.437	1.403	2.4	124	0.00	4.82
14		CHLOROETHANE	0.749	0.788	-5.2	131	0.00	4.92
15		FREON 123	3.195	3.258	-2.0	129	0.00	5.26
16		FREON 123A	2.004	1.940	3.2	121	0.00	5.29
17		TRICHLOROFLUOROMETHANE	4.030	3.663	9.1	115	0.00	5.46
18		ISOPROPYL ALCOHOL	1.899	2.017	-6.2	141	-0.01	5.52
19		ACETONE	0.563	0.576	-2.3	134	0.00	5.34
20		PENTANE	1.365	1.492	-9.3	146	0.00	5.67
21	H	TVHC as EQUIV PENTANE	7.752	9.313	-20.1	139	0.00	5.67
22		ETHYL ETHER	0.552	0.590	-6.9	135	0.00	5.70
23		IODOMETHANE	3.846	3.731	3.0	120	0.00	5.88
24		1,1-DICHLOROETHYLENE	1.315	1.250	4.9	127	0.00	5.93
25		CARBON DISULFIDE	3.892	3.802	2.3	129	0.00	6.26
26		ETHANOL	0.452	0.434	4.0	147	-0.01	5.03
27		BROMOETHENE	1.386	1.371	1.1	124	0.00	5.18
28		METHYLENE CHLORIDE	1.207	1.119	7.3	127	0.00	6.03
29		3-CHLOROPROPENE	0.555	0.580	-4.5	132	0.00	6.10
30		FREON 113	2.359	2.218	6.0	115	0.00	6.19
31		TRANS-1,2-DICHLOROETHYLEN	1.351	1.295	4.1	122	0.00	6.72
32		TERTIARY BUTYL ALCOHOL	2.215	2.568	-15.9	132	-0.01	5.94
33		METHYL TERTIARY BUTYL ETH	3.290	3.273	0.5	123	0.00	6.89
34		TETRAHYDROFURAN	0.481	0.526	-9.4	129	-0.01	8.18
35		HEXANE	1.822	1.957	-7.4	137	0.00	7.67
36		VINYL ACETATE	0.224	0.250	-11.6	124	0.00	7.00
37		1,1-DICHLOROETHANE	2.334	2.425	-3.9	131	0.00	6.89
38		METHYL ETHYL KETONE	0.479	0.510	-6.5	129	-0.01	7.20
39		cis-1,2-DICHLOROETHYLENE	1.334	1.286	3.6	123	0.00	7.63
40		DIISOPROPYL ETHER	3.122	3.578	-14.6	140	0.00	7.67
41		ETHYL ACETATE	0.309	0.310	-0.3	132	0.00	7.75
42		CHLOROFORM	2.771	2.696	2.7	120	0.00	7.85

Initial Calibration Verification

Job Number: JA28238 **Sample:** V3W524-ICV523
Account: HLANJPR Mactec **Lab FileID:** 3W12868.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		2,4-DIMETHYLPENTANE	2.072	2.233	-7.8	137	0.00	8.43
44		1,1,1-TRICHLOROETHANE	2.972	2.826	4.9	115	0.00	8.71
45		CARBON TETRACHLORIDE	3.101	3.003	3.2	112	0.00	9.27
46		1,2-DICHLOROETHANE	1.809	1.863	-3.0	122	0.00	8.49
47	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	119	0.00	9.46
48		BENZENE	0.836	0.890	-6.5	130	0.00	9.14
49		CYCLOHEXANE	0.417	0.452	-8.4	135	0.00	9.32
50		2,3-DIMETHYLPENTANE	0.187	0.192	-2.7	132	0.00	9.50
51		TRICHLOROETHYLENE	0.378	0.394	-4.2	121	0.00	10.10
52		1,2-DICHLOROPROPANE	0.301	0.317	-5.3	133	-0.01	9.86
53		BROMODICHLOROMETHANE	0.584	0.649	-11.1	119	0.00	10.08
54		2,2,4-TRIMETHYLPENTANE	1.231	1.359	-10.4	136	0.00	10.02
55		1,4-DIOXANE	0.165	0.165	0.0	120	0.00	10.14
56		HEPTANE	0.489	0.538	-10.0	141	0.00	10.28
57	H	TVHC as EQUIV HEPTANE	3.147	3.502	-11.3	132	0.00	10.28
58		METHYL METHACRYLATE	0.218	0.249	-14.2	128	0.00	10.29
59		METHYL ISOBUTYL KETONE	0.451	0.545	-20.8	137	0.00	10.92
60		cis-1,3-DICHLOROPROPENE	0.423	0.475	-12.3	124	0.00	10.94
61		TOLUENE	0.555	0.601	-8.3	122	0.00	11.88
62		trans-1,3-DICHLOROPROPENE	0.390	0.445	-14.1	120	0.00	11.45
63		1,1,2-TRICHLOROETHANE	0.255	0.286	-12.2	124	-0.01	11.62
64	I	CHLOROBENZENE-D5	1.000	1.000	0.0	118	-0.01	13.71
65		2-HEXANONE	0.859	1.063	-23.7	135	-0.01	12.11
66		TETRACHLOROETHYLENE	1.052	0.980	6.8	111	0.00	13.03
67		DIBROMOCHLOROMETHANE	1.215	1.370	-12.8	115	-0.01	12.33
68		1,2-DIBROMOETHANE	0.962	1.052	-9.4	117	0.00	12.55
69		OCTANE	1.327	1.482	-11.7	139	0.00	12.78
70		1,1,1,2-TETRACHLOROETHANE	1.000	0.986	1.4	115	0.00	13.73
71		CHLOROBENZENE	1.612	1.636	-1.5	119	0.00	13.76
72		ETHYLBENZENE	2.454	2.558	-4.2	119	0.00	14.12
73		m,p-XYLENE	0.930	0.981	-5.5	118	0.00	14.30
74		o-XYLENE	0.884	0.946	-7.0	118	-0.01	14.82
75		STYRENE	1.132	1.299	-14.8	117	0.00	14.72
76		NONANE	1.221	1.391	-13.9	135	-0.01	14.97
77		BROMOFORM	1.073	1.226	-14.3	110	0.00	14.43
78	S	4-BROMOFLUOROBENZENE	1.049	1.086	-3.5	111	-0.01	15.34
79		1,1,2,2-TETRACHLOROETHANE	1.130	1.202	-6.4	127	-0.01	14.84
80		1,2,3-TRICHLOROPROPANE	0.881	0.949	-7.7	125	-0.01	14.97
81		ISOPROPYLBENZENE	2.604	2.664	-2.3	115	0.00	15.46
82		2-CHLOROTOLUENE	0.586	0.629	-7.3	115	0.00	16.04
83		n-PROPYLBENZENE	0.684	0.689	-0.7	115	-0.01	16.05
84		4-ETHYLTOLUENE	2.245	2.281	-1.6	115	0.00	16.22
85		1,3,5-TRIMETHYLBENZENE	1.890	1.910	-1.1	115	-0.01	16.31
86		tert-BUTYLBENZENE	0.501	0.487	2.8	113	0.00	16.79
87		1,2,4-TRIMETHYLBENZENE	1.692	1.756	-3.8	116	-0.01	16.80
88		m-DICHLOROBENZENE	1.084	1.112	-2.6	114	0.00	17.01
89		BENZYL CHLORIDE	1.037	1.154	-11.3	123	0.00	17.00
90		p-DICHLOROBENZENE	1.031	1.028	0.3	114	-0.01	17.08
91		sec-BUTYLBENZENE	0.566	0.560	1.1	113	0.00	17.11
92		p-ISOPROPYLTOLUENE	0.575	0.551	4.2	115	-0.01	17.29
93		o-DICHLOROBENZENE	0.982	1.001	-1.9	118	0.00	17.50
94		n-BUTYLBENZENE	0.375	0.409	-9.1	116	0.00	17.80
95		HEXACHLOROBUTADIENE	0.384	0.445	-15.9	140	0.00	20.03
96		1,2,4-TRICHLOROBENZENE	0.187	0.238	-27.3	155	0.00	19.49
97	I	CHLOROBENZENE-D5 (a)	1.000	1.000	0.0	118	-0.01	13.71
98		NAPHTHALENE		----------NA----------				

Initial Calibration Verification

Job Number: JA28238 **Sample:** V3W524-ICV523
Account: HLANJPR Mactec **Lab FileID:** 3W12868.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

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-----------------------------------------------------------------------------

   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    3W12851.D  M3W523.M         Tue Oct 06 12:20:34 2009   MS3W
```

GC/MS Volatiles

Raw Data

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25726.D Vial: 3
Acq On : 29 Sep 2009 1:14 am Operator: YOUMINH
Sample : JA28238-1 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:58 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	104319	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	516958	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	228122	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	228246	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	108931	4.63	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 92.60%

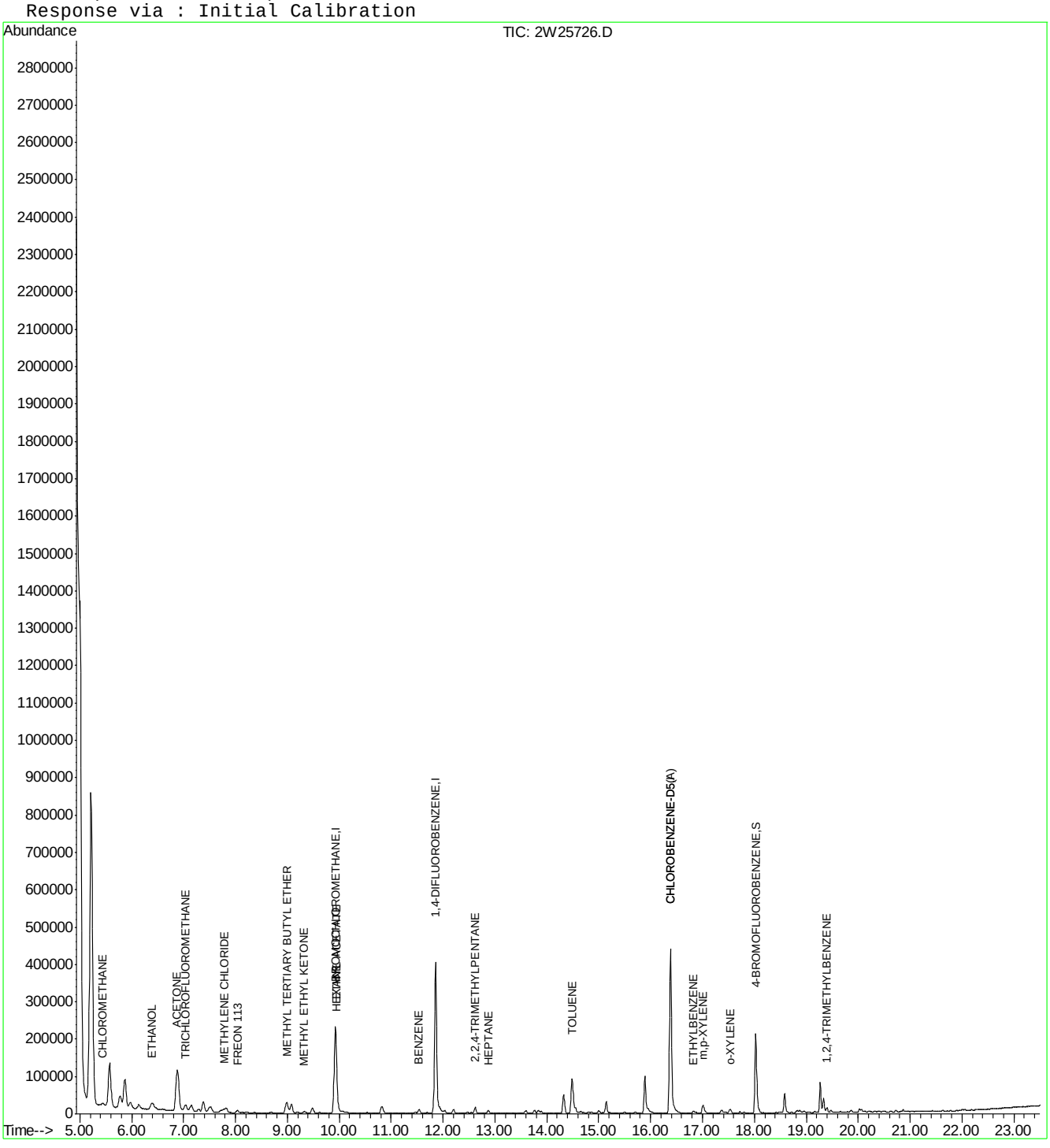
Target Compounds						Qvalue
9) CHLOROMETHANE	5.45	52	2902	0.60	PPBV #	87
17) TRICHLOROFLUOROMETHANE	7.04	101	23255	0.73	PPBV	99
19) ACETONE	6.86	58	52456	7.33	PPBV #	52
26) ETHANOL	6.39	45	58012	11.90	PPBV	99
28) METHYLENE CHLORIDE	7.78	84	5466	0.45	PPBV	92
30) FREON 113	8.04	151	3862	0.18	PPBV	94
33) METHYL TERTIARY BUTYL ETHE	8.98	73	34311	1.06	PPBV	84
35) HEXANE	9.95	57	17894	0.95	PPBV	89
38) METHYL ETHYL KETONE	9.33	72	2819	0.47	PPBV	98
40) ETHYL ACETATE	9.95	61	2804	0.78	PPBV #	61
47) BENZENE	11.54	78	13898	0.29	PPBV	100
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	18642	0.32	PPBV #	85
56) HEPTANE	12.87	43	5117	0.22	PPBV	84
60) TOLUENE	14.50	92	27704	0.89	PPBV	95
71) ETHYLBENZENE	16.83	91	7835	0.15	PPBV #	89
72) m,p-XYLENE	17.01	106	10762	0.52	PPBV	92
73) o-XYLENE	17.53	106	3416	0.18	PPBV #	77
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	8389	0.34	PPBV #	29

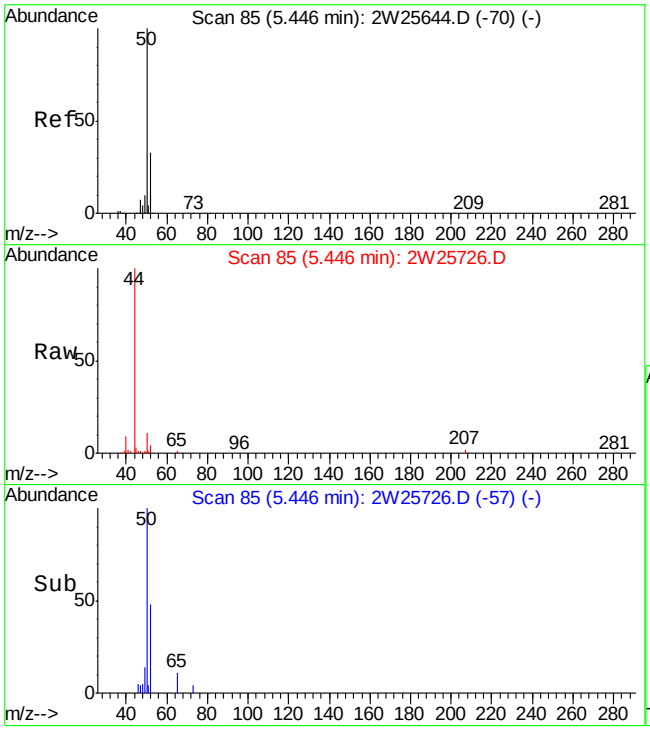
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25726.D Vial: 3
Acq On : 29 Sep 2009 1:14 am Operator: YOUMINH
Sample : JA28238-1 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:41 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

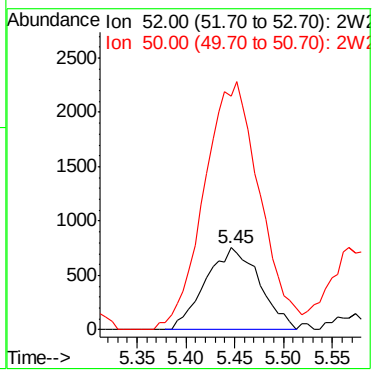


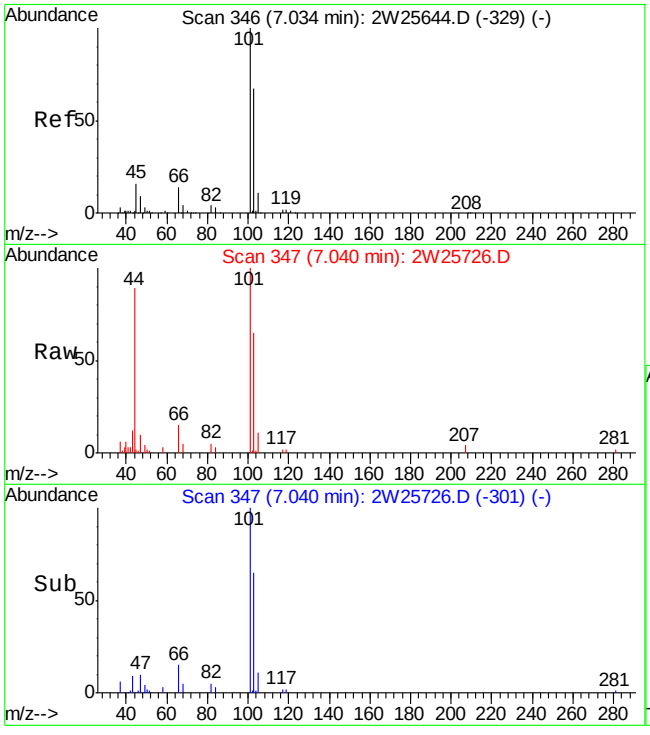


#9
CHLOROMETHANE
Concen: 0.60 PPBV
RT: 5.45 min Scan# 85
Delta R.T. -0.00 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 52 Resp: 2902

Ion	Ratio	Lower	Upper
52	100		
50	266.1	272.1	312.1#

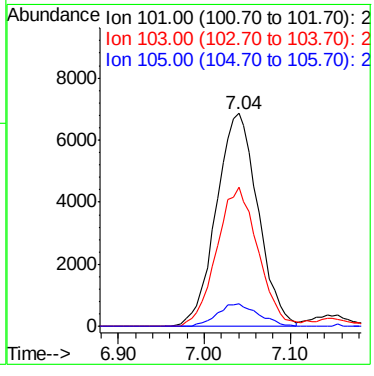


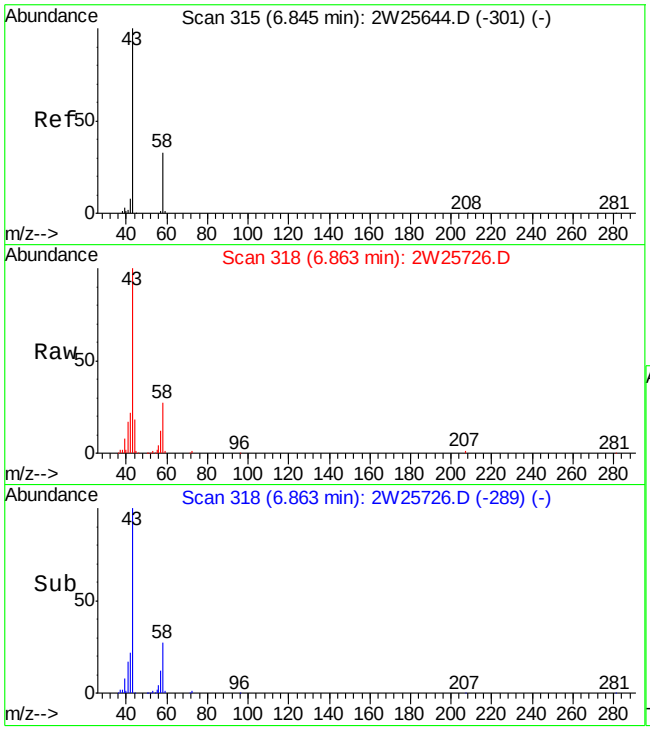


#17
TRICHLOROFLUOROMETHANE
Concen: 0.73 PPBV
RT: 7.04 min Scan# 347
Delta R.T. 0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion:101 Resp: 23255

Ion	Ratio	Lower	Upper
101	100		
103	64.7	46.0	86.0
105	10.7	0.0	30.8

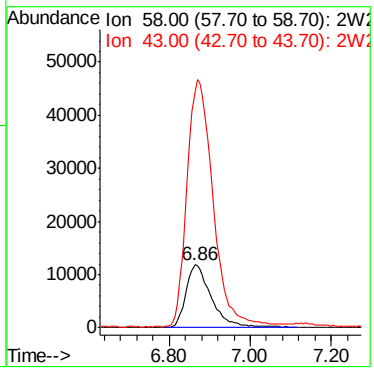


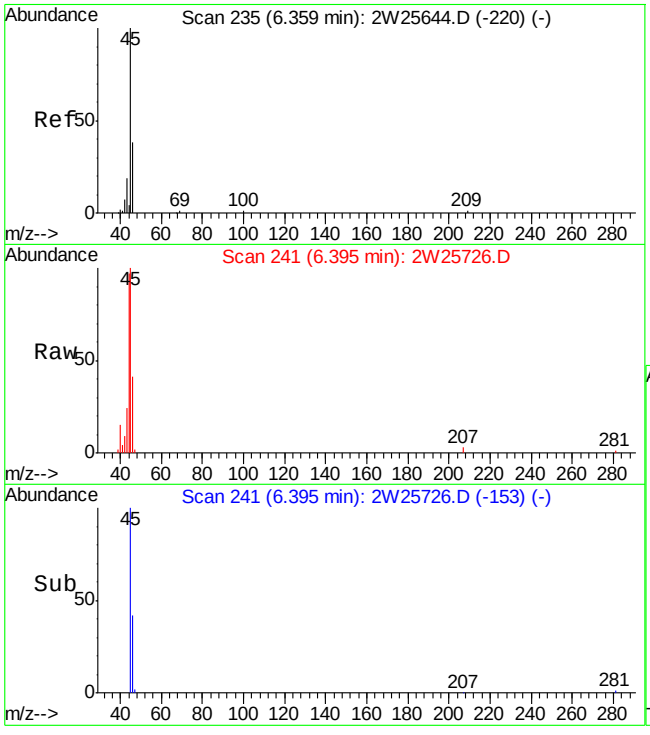


#19
ACETONE
Concen: 7.33 PPBV
RT: 6.86 min Scan# 318
Delta R.T. 0.02 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 58 Resp: 52456

Ion	Ratio	Lower	Upper
58	100		
43	399.4	284.9	324.9#

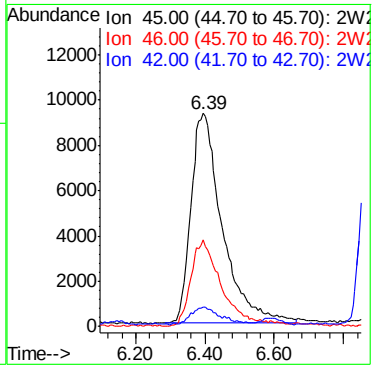


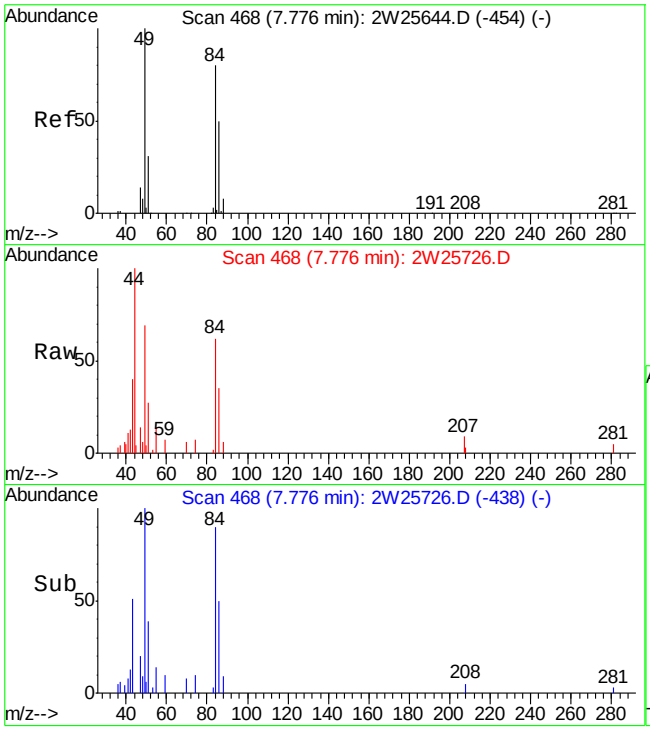


#26
ETHANOL
Concen: 11.90 PPBV
RT: 6.39 min Scan# 241
Delta R.T. 0.04 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 45 Resp: 58012

Ion	Ratio	Lower	Upper
45	100		
46	39.4	19.4	59.4
42	6.0	0.0	28.5

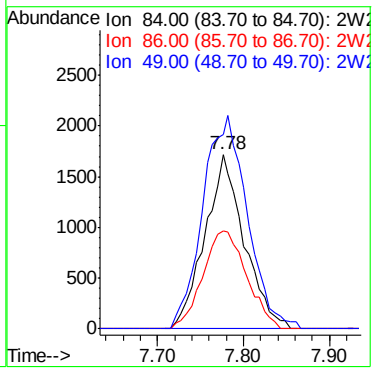


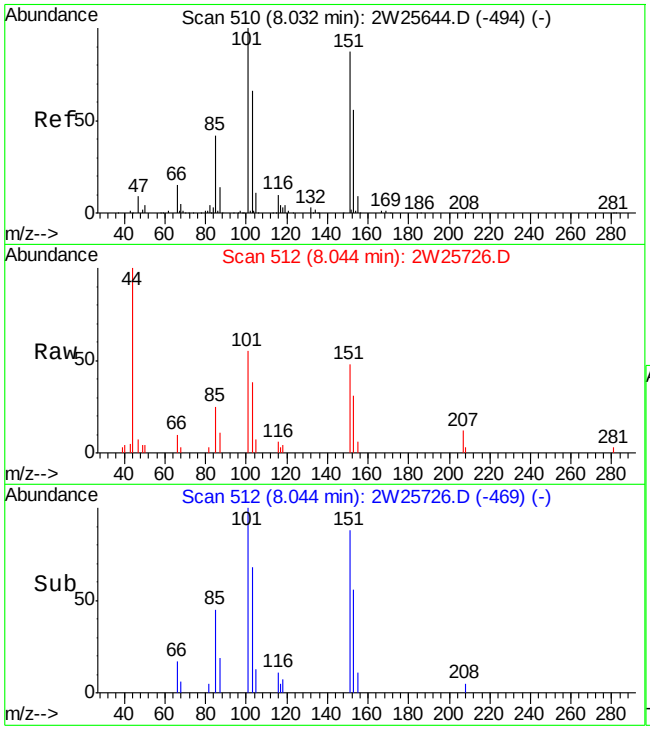


#28
METHYLENE CHLORIDE
Concen: 0.45 PPBV
RT: 7.78 min Scan# 468
Delta R.T. -0.00 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 84 Resp: 5466

Ion	Ratio	Lower	Upper
84	100		
86	62.3	44.9	84.9
49	138.7	0.0	327.0

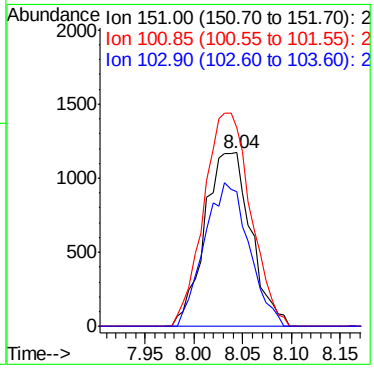


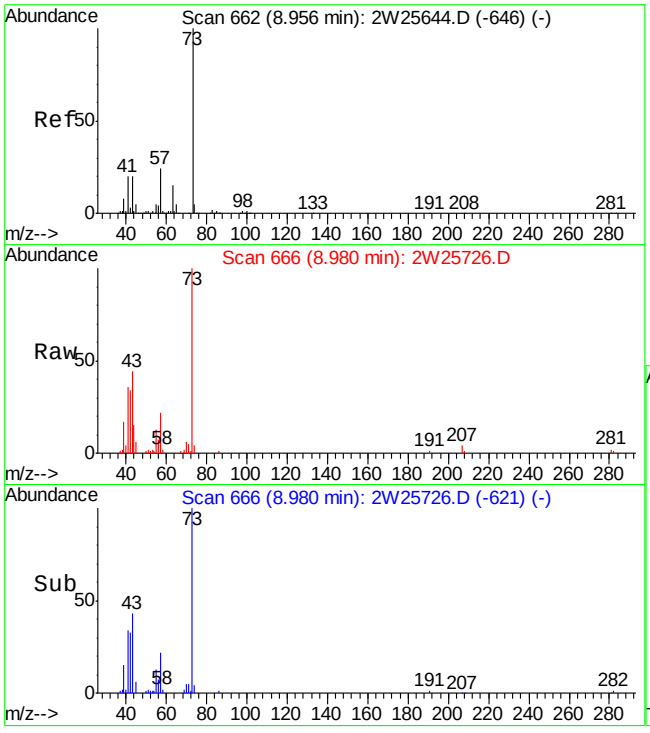


#30
FREON 113
Concen: 0.18 PPBV
RT: 8.04 min Scan# 512
Delta R.T. 0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion:151 Resp: 3862

Ion	Ratio	Lower	Upper
151	100		
101	124.7	96.5	136.5
103	79.9	56.4	96.4

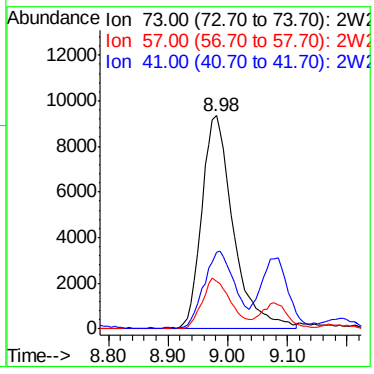


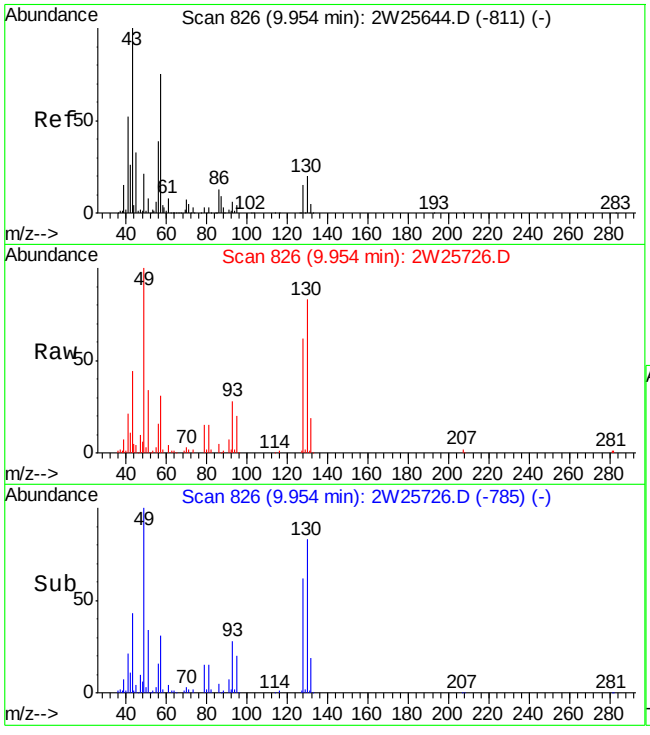


#33
METHYL TERTIARY BUTYL ETHER
Concen: 1.06 PPBV
RT: 8.98 min Scan# 666
Delta R.T. 0.02 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 73 Resp: 34311

Ion	Ratio	Lower	Upper
73	100		
57	21.7	3.3	43.3
41	35.9	1.5	41.5

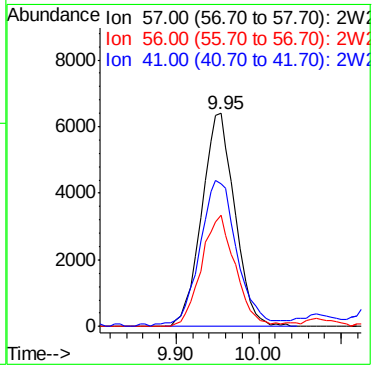


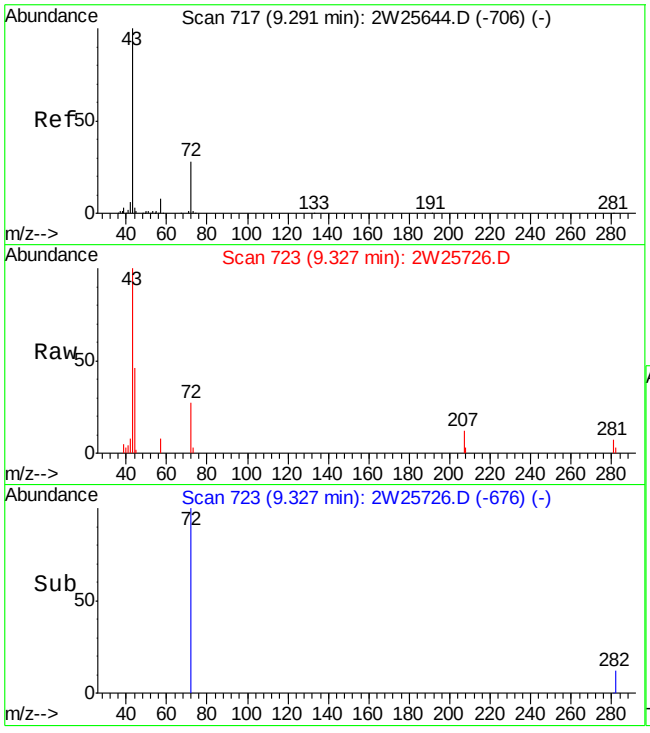


#35
HEXANE
Concen: 0.95 PPBV
RT: 9.95 min Scan# 826
Delta R.T. -0.00 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 57 Resp: 17894

Ion	Ratio	Lower	Upper
57	100		
56	53.7	31.3	71.3
41	77.2	72.4	112.4

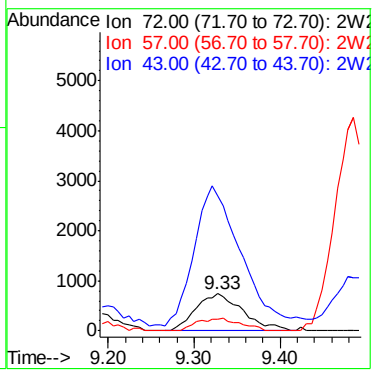


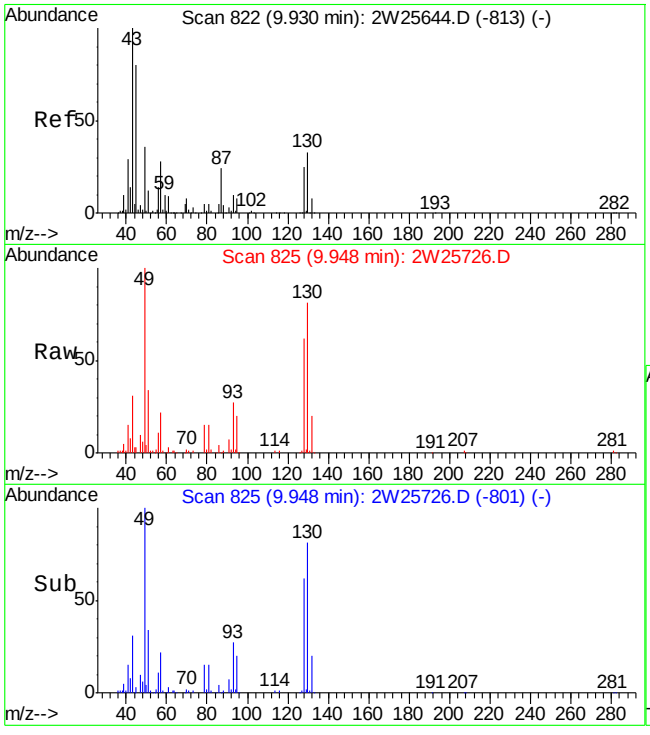


#38
METHYL ETHYL KETONE
Concen: 0.47 PPBV
RT: 9.33 min Scan# 723
Delta R.T. 0.04 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 72 Resp: 2819

Ion	Ratio	Lower	Upper
72	100		
57	31.0	9.4	49.4
43	367.7	343.3	383.3

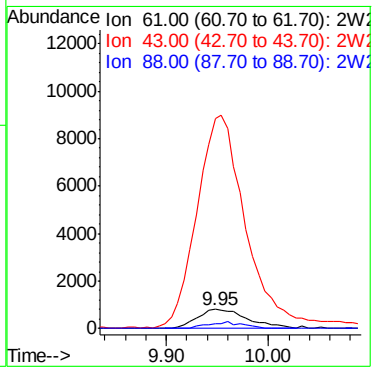


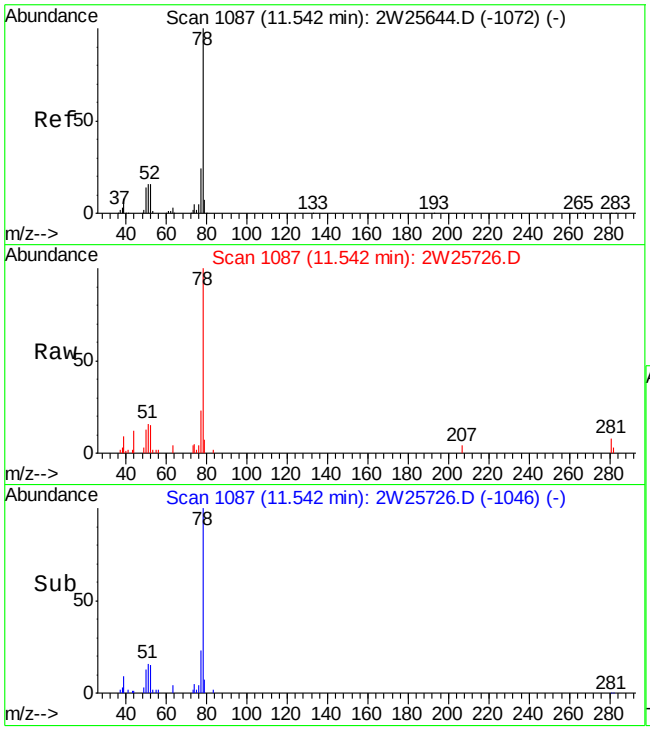


#40
ETHYL ACETATE
Concen: 0.78 PPBV
RT: 9.95 min Scan# 825
Delta R.T. 0.02 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 61 Resp: 2804

Ion	Ratio	Lower	Upper
61	100		
43	1090.7	1272.0	1312.0#
88	0.0	25.8	65.8#

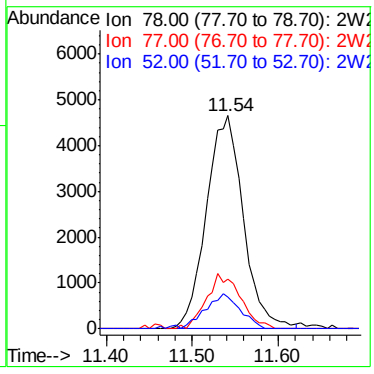


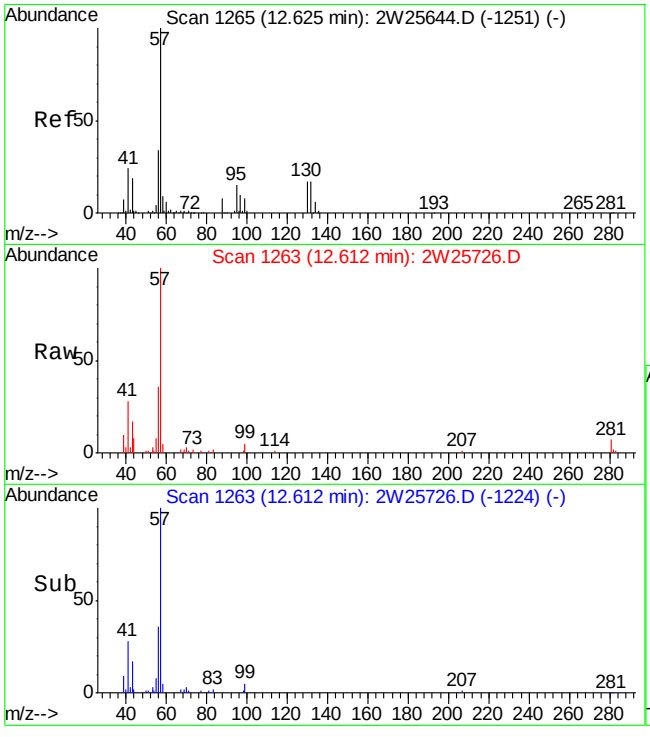


#47
BENZENE
Concen: 0.29 PPBV
RT: 11.54 min Scan# 1087
Delta R.T. -0.00 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 78 Resp: 13898

Ion	Ratio	Lower	Upper
78	100		
77	23.7	3.8	43.8
52	15.9	0.0	35.8

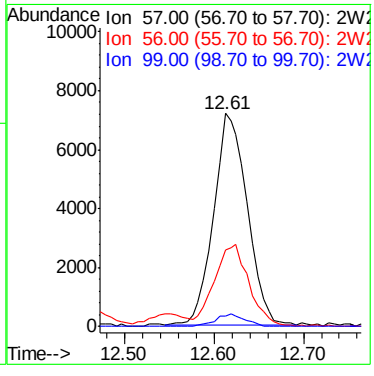


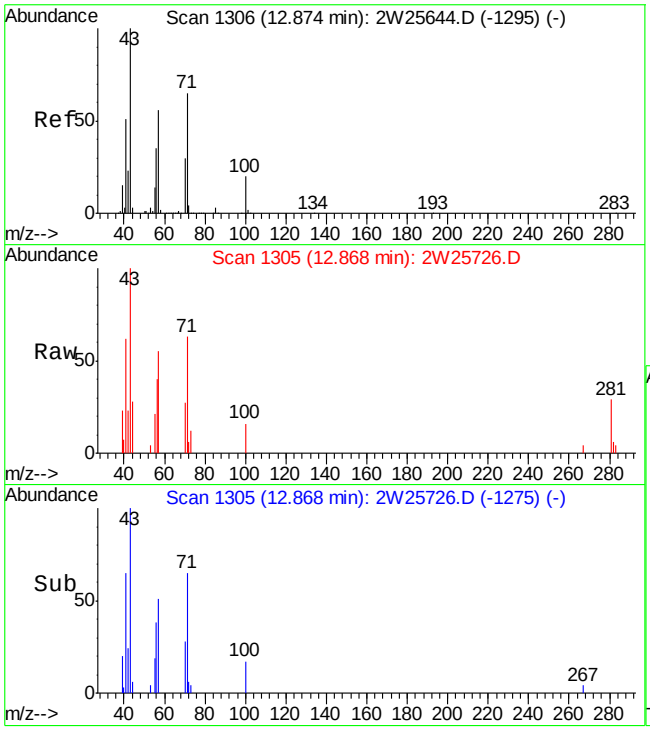


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.32 PPBV
RT: 12.61 min Scan# 1263
Delta R.T. -0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 57 Resp: 18642

Ion	Ratio	Lower	Upper
57	100		
56	40.3	13.2	53.2
99	0.0	0.0	28.8

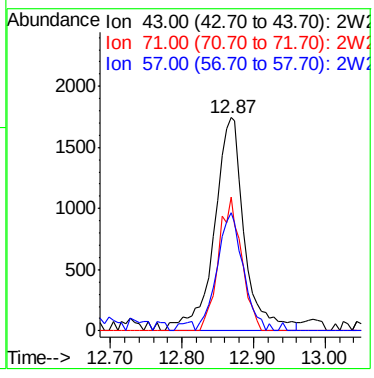


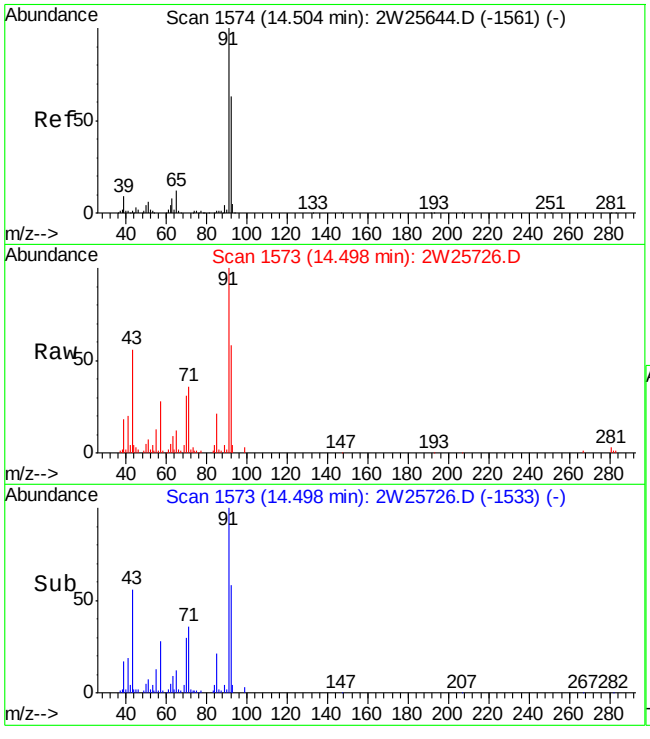


#56
HEPTANE
Concen: 0.22 PPBV
RT: 12.87 min Scan# 1305
Delta R.T. -0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 43 Resp: 5117

Ion	Ratio	Lower	Upper
43	100		
71	48.1	44.0	84.0
57	48.2	35.5	75.5

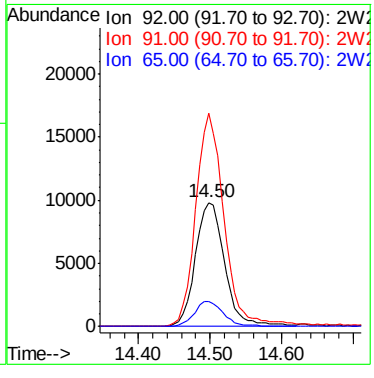


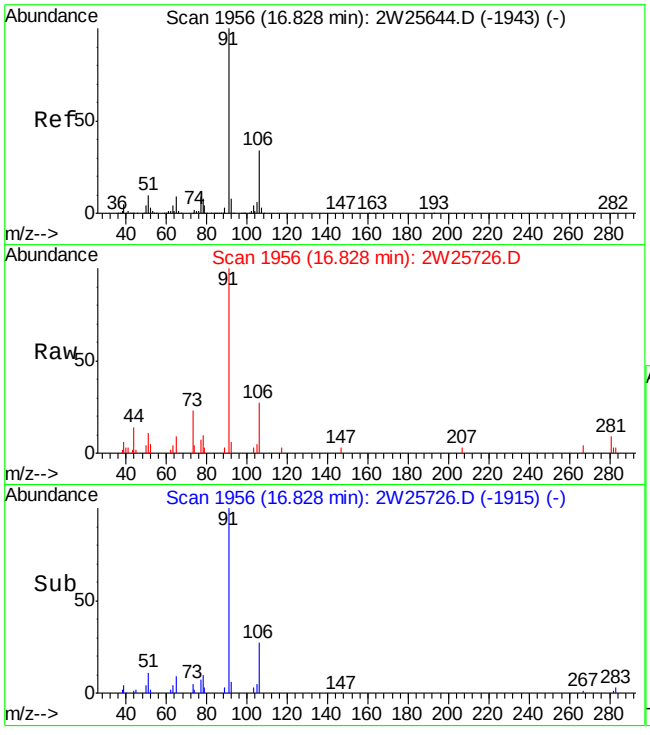


#60
TOLUENE
Concen: 0.89 PPBV
RT: 14.50 min Scan# 1573
Delta R.T. -0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 92 Resp: 27704

Ion	Ratio	Lower	Upper
92	100		
91	168.0	140.7	180.7
65	20.4	0.0	38.6

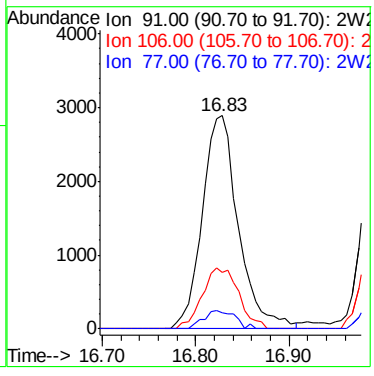


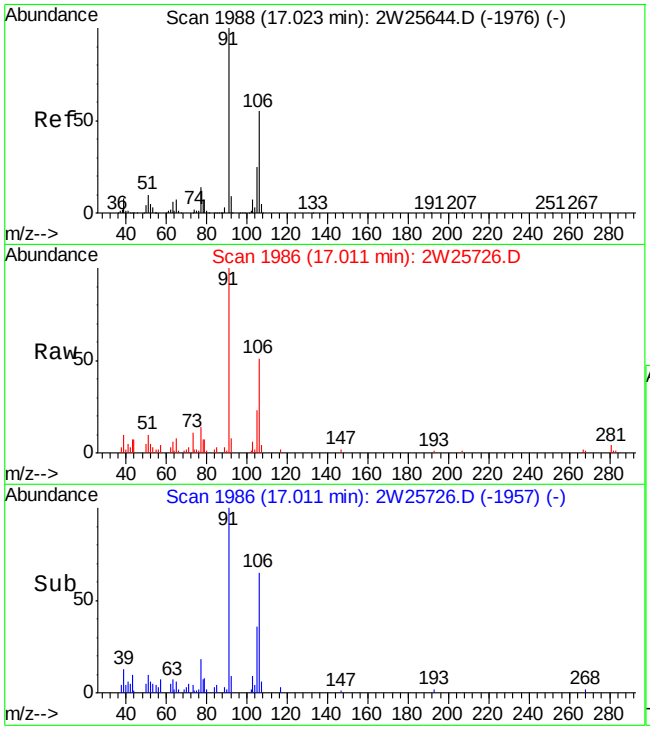


#71
ETHYLBENZENE
Concen: 0.15 PPBV
RT: 16.83 min Scan# 1956
Delta R.T. -0.00 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion: 91 Resp: 7835

Ion	Ratio	Lower	Upper
91	100		
106	28.7	13.0	53.0
77	0.0	0.0	28.8

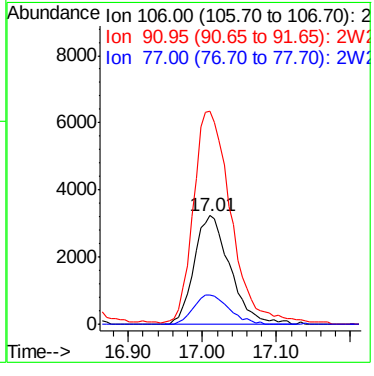


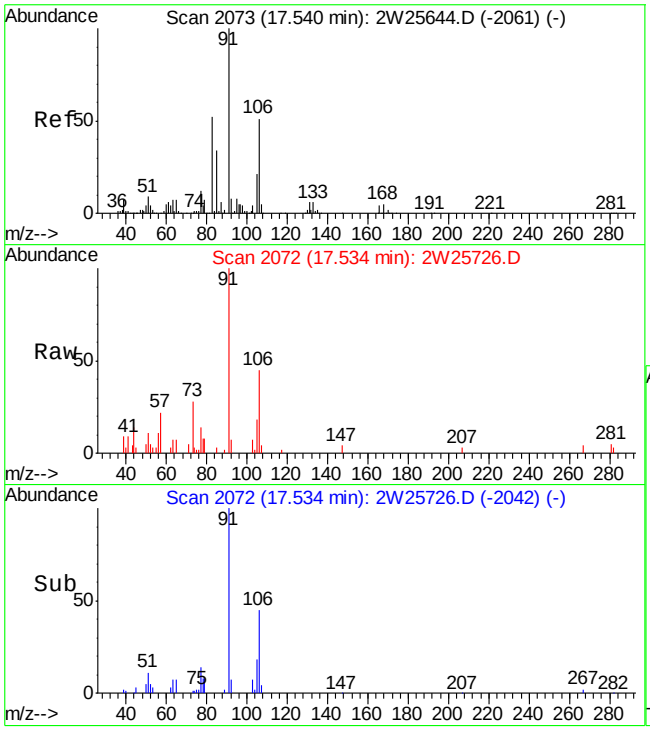


#72
m,p-XYLENE
Concen: 0.52 PPBV
RT: 17.01 min Scan# 1986
Delta R.T. -0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion:106 Resp: 10762

Ion	Ratio	Lower	Upper
106	100		
91	196.3	147.4	221.2
77	26.9	20.5	30.7

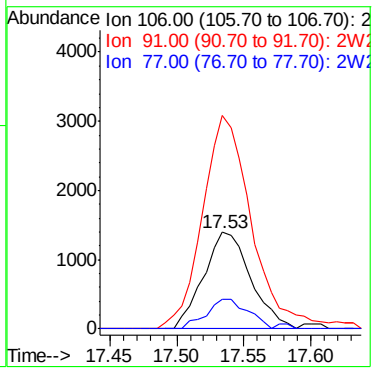


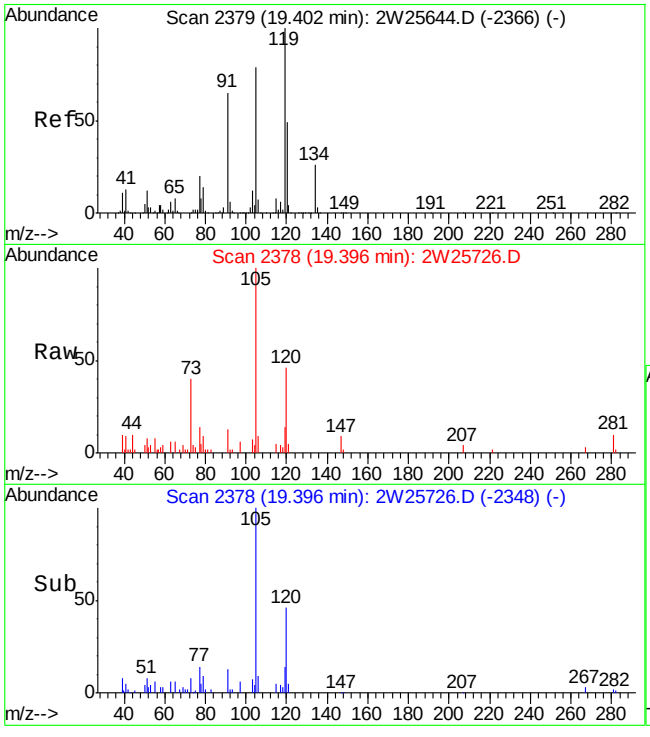


#73
o-XYLENE
Concen: 0.18 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. -0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion:106 Resp: 3416

Ion	Ratio	Lower	Upper
106	100		
91	228.8	179.7	219.7#
77	0.0	5.4	45.4#

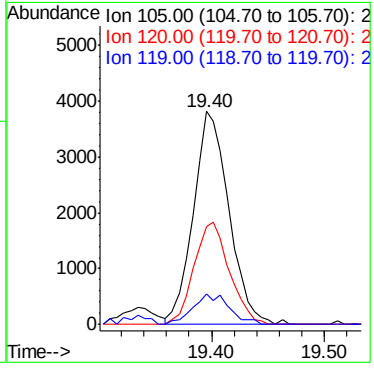




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.34 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. -0.01 min
Lab File: 2W25726.D
Acq: 29 Sep 2009 1:14 am

Tgt Ion:105 Resp: 8389

Ion	Ratio	Lower	Upper
105	100		
120	47.7	41.7	81.7
119	14.7	106.1	146.1#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25727.D Vial: 4
Acq On : 29 Sep 2009 1:59 am Operator: YOUMINH
Sample : JA28238-2 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:49:02 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

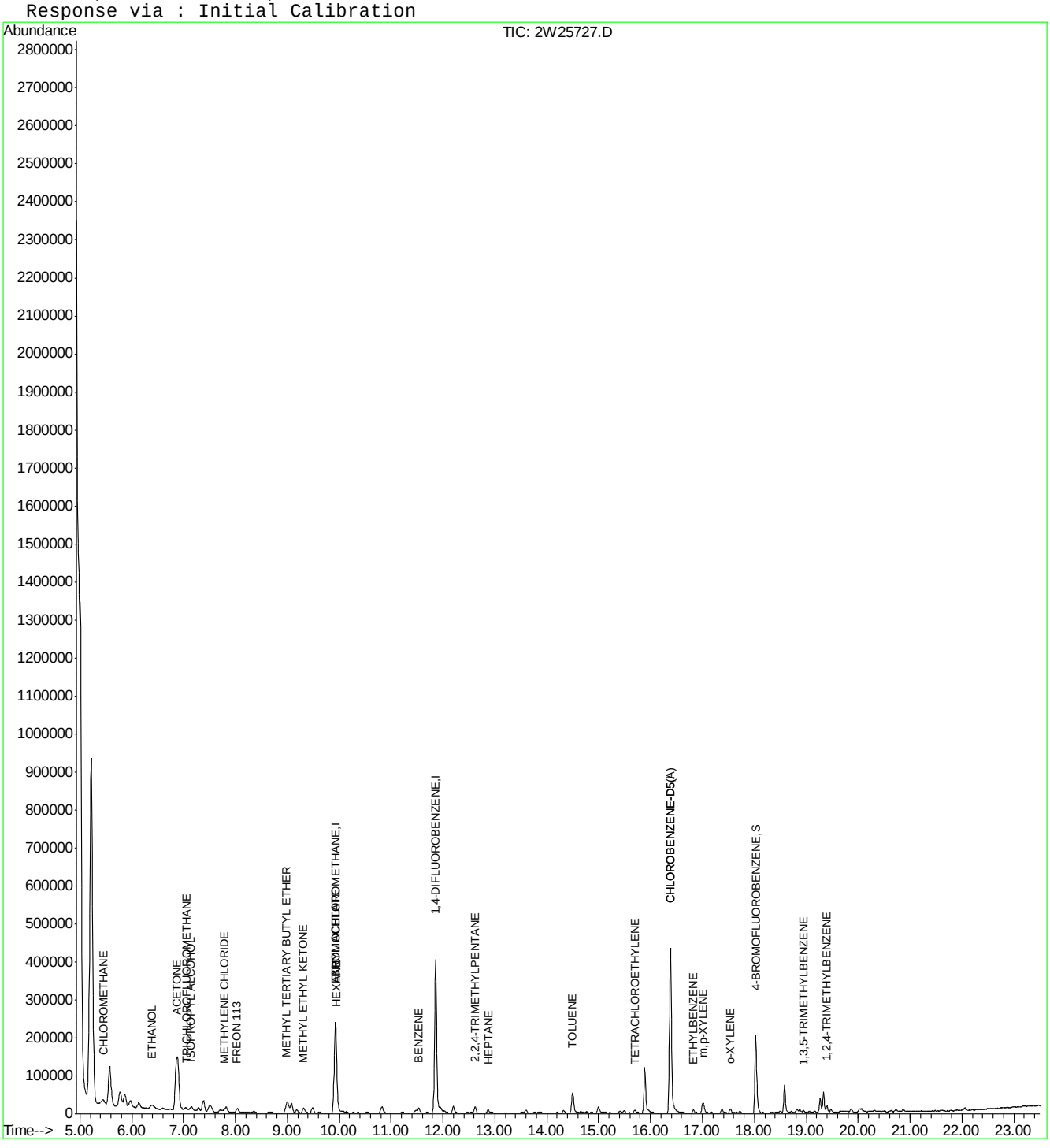
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	101786	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	505237	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	225058	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	225168	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.03	95	104191	4.49	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 89.80%			
Target Compounds						Qvalue
9) CHLOROMETHANE	5.45	52	7924	1.67	PPBV #	89
17) TRICHLOROFLUOROMETHANE	7.04	101	10125	0.33	PPBV	98
18) ISOPROPYL ALCOHOL	7.14	45	10312	0.52	PPBV #	61
19) ACETONE	6.86	58	92138	13.20	PPBV #	76
26) ETHANOL	6.38	45	35479	7.46	PPBV	97
28) METHYLENE CHLORIDE	7.78	84	4089	0.35	PPBV	94
30) FREON 113	8.04	151	5812	0.28	PPBV	89
33) METHYL TERTIARY BUTYL ETHE	8.97	73	21521	0.68	PPBV #	70
35) HEXANE	9.95	57	14692	0.80	PPBV	91
38) METHYL ETHYL KETONE	9.32	72	8259	1.41	PPBV	95
40) ETHYL ACETATE	9.94	61	7915	2.26	PPBV #	4
47) BENZENE	11.54	78	16849	0.36	PPBV	99
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	19925	0.35	PPBV	89
56) HEPTANE	12.87	43	5624	0.25	PPBV	92
60) TOLUENE	14.50	92	33214	1.09	PPBV	92
65) TETRACHLOROETHYLENE	15.70	164	2224	0.11	PPBV	97
71) ETHYLBENZENE	16.82	91	10079	0.19	PPBV #	90
72) m,p-XYLENE	17.00	106	14059	0.69	PPBV	91
73) o-XYLENE	17.54	106	4546	0.24	PPBV	88
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	3587	0.12	PPBV #	87
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	10649	0.44	PPBV #	28

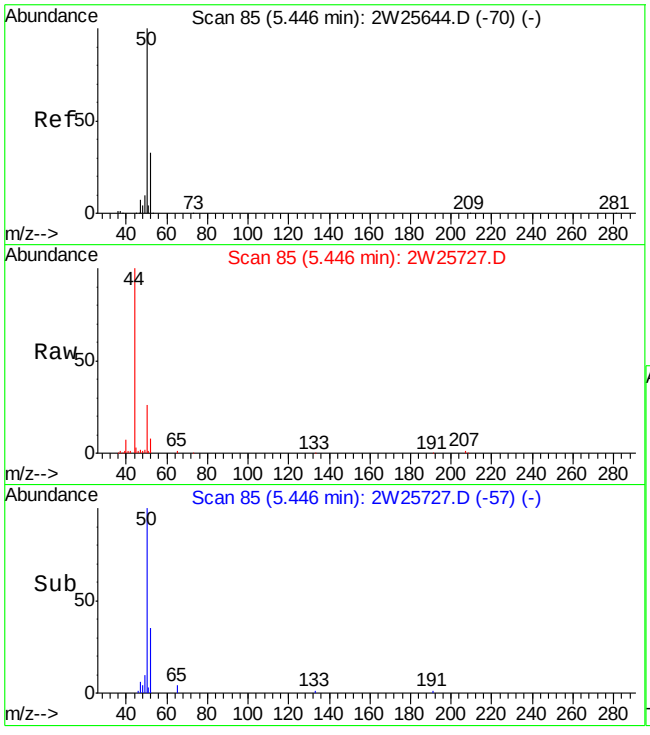
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25727.D Vial: 4
Acq On : 29 Sep 2009 1:59 am Operator: YOUMINH
Sample : JA28238-2 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 12:03 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

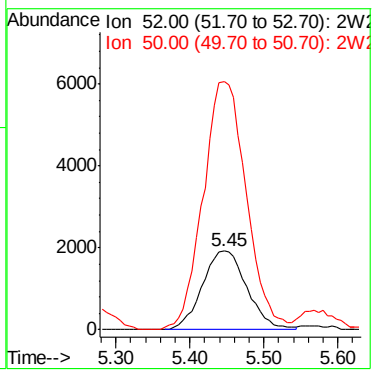


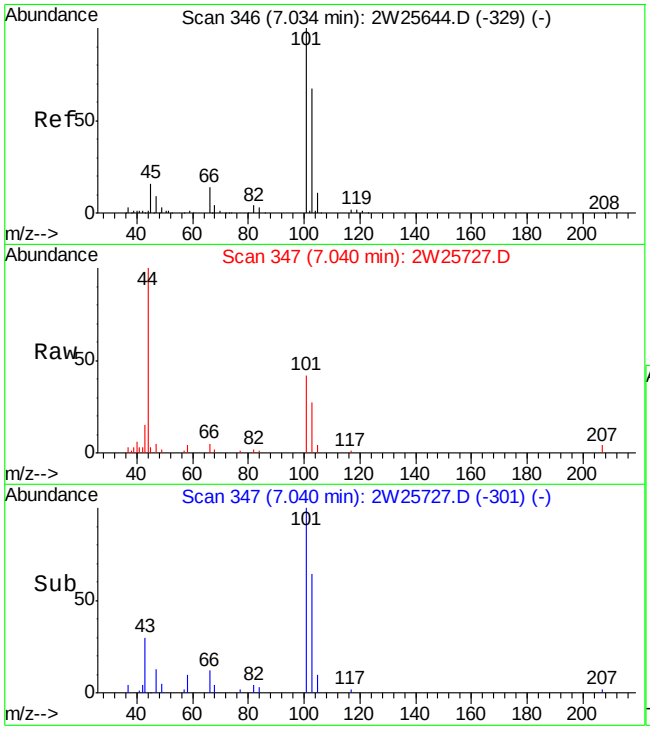


#9
CHLOROMETHANE
Concen: 1.67 PPBV
RT: 5.45 min Scan# 85
Delta R.T. -0.00 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 52 Resp: 7924

Ion	Ratio	Lower	Upper
52	100		
50	312.9	272.1	312.1#

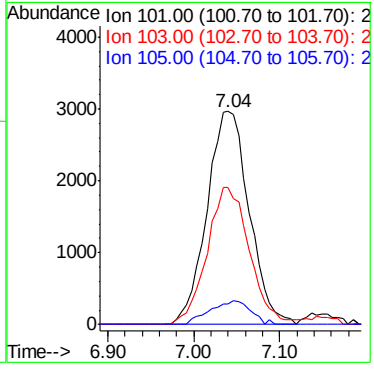


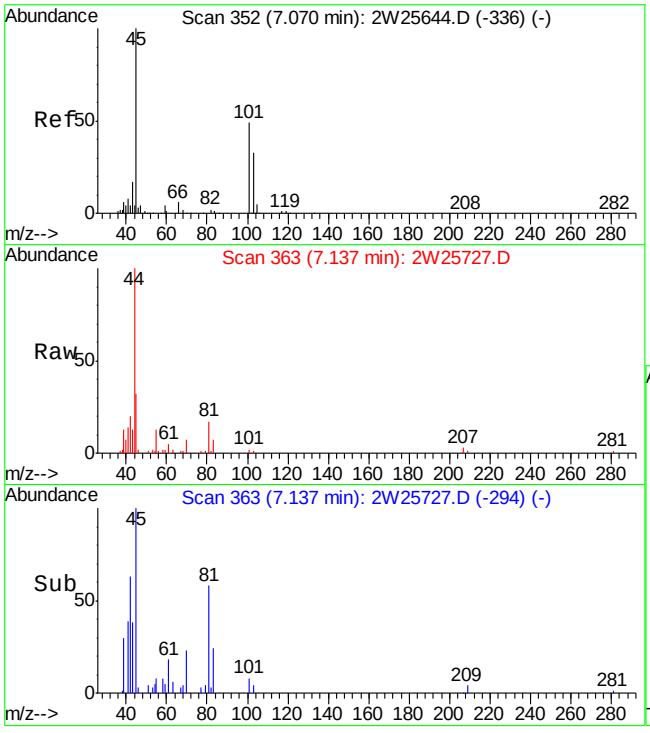


#17
TRICHLOROFLUOROMETHANE
Concen: 0.33 PPBV
RT: 7.04 min Scan# 347
Delta R.T. 0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion:101 Resp: 10125

Ion	Ratio	Lower	Upper
101	100		
103	64.6	46.0	86.0
105	10.9	0.0	30.8

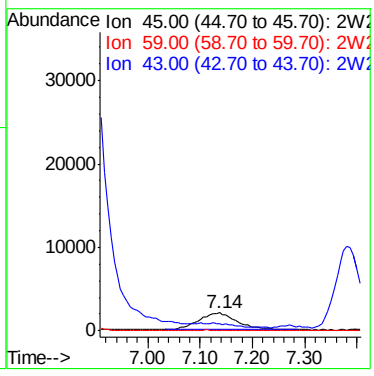


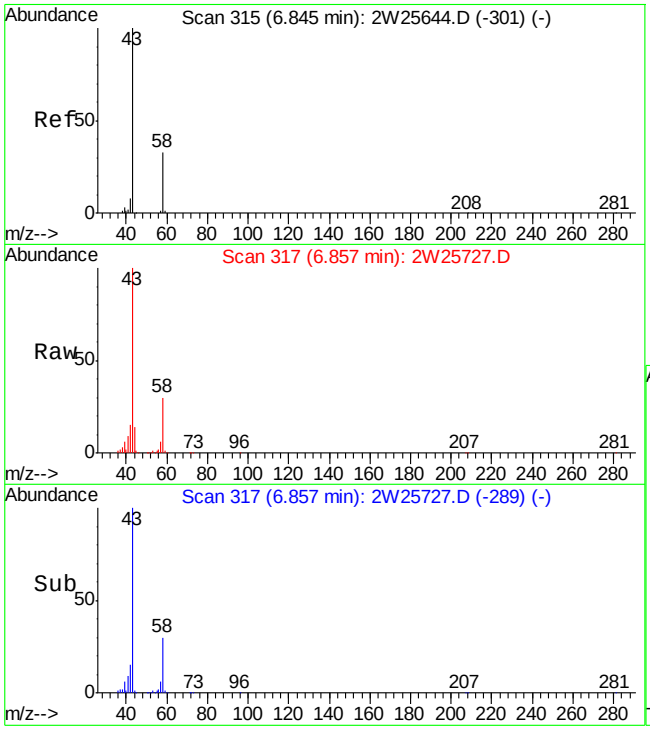


#18
ISOPROPYL ALCOHOL
Concen: 0.52 PPBV
RT: 7.14 min Scan# 363
Delta R.T. 0.07 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 45 Resp: 10312

Ion	Ratio	Lower	Upper
45	100		
59	4.9	0.0	24.2
43	40.8	0.0	39.4#

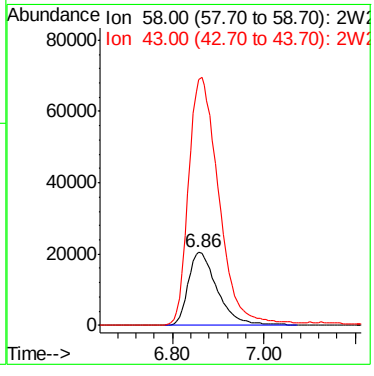


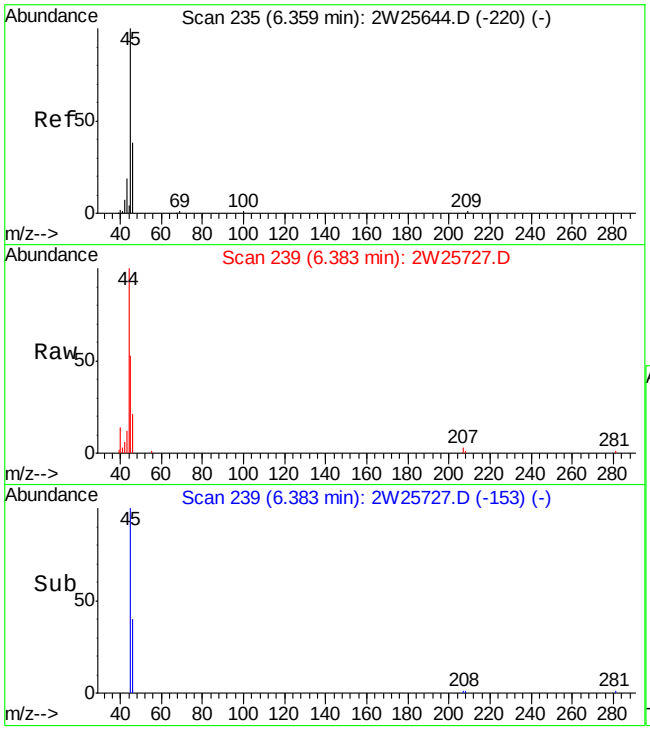


#19
ACETONE
Concen: 13.20 PPBV
RT: 6.86 min Scan# 317
Delta R.T. 0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 58 Resp: 92138

Ion	Ratio	Lower	Upper
58	100		
43	352.1	284.9	324.9#

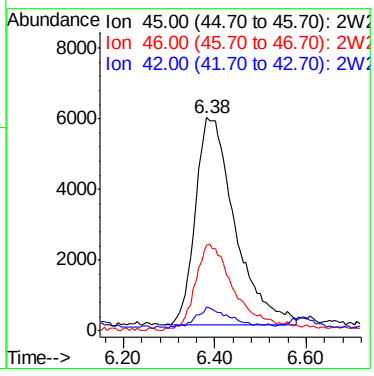


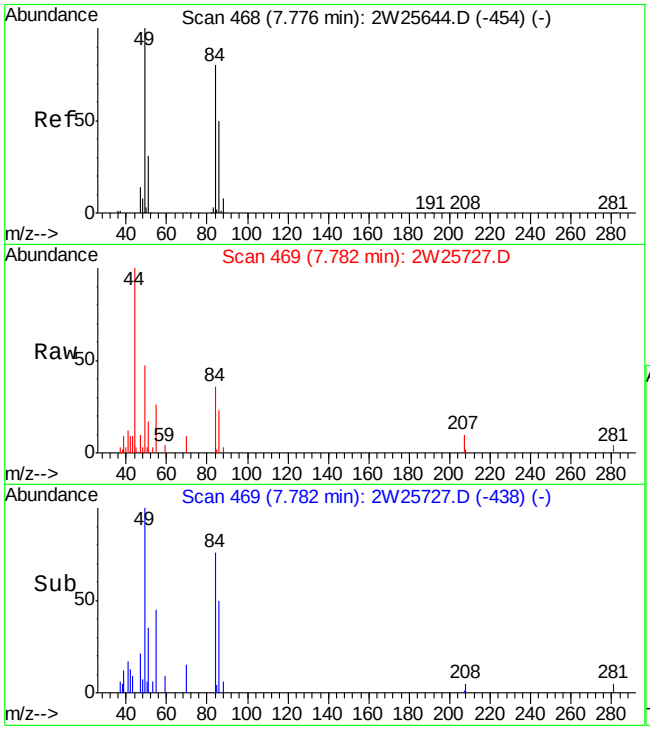


#26
ETHANOL
Concen: 7.46 PPBV
RT: 6.38 min Scan# 239
Delta R.T. 0.02 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 45 Resp: 35479

Ion	Ratio	Lower	Upper
45	100		
46	41.3	19.4	59.4
42	8.7	0.0	28.5

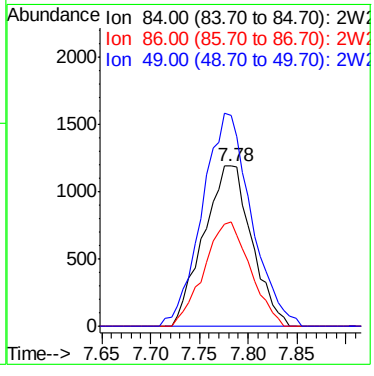


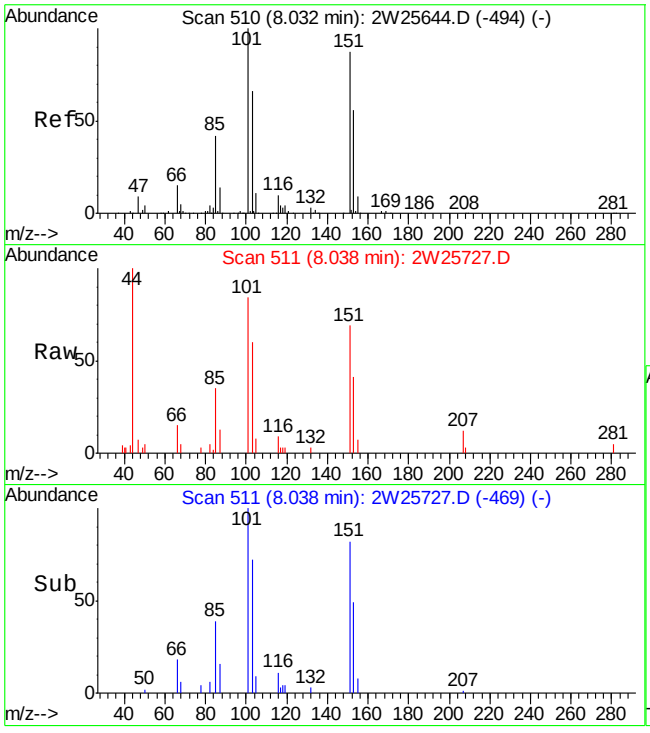


#28
METHYLENE CHLORIDE
Concen: 0.35 PPBV
RT: 7.78 min Scan# 469
Delta R.T. 0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 84 Resp: 4089

Ion	Ratio	Lower	Upper
84	100		
86	62.4	44.9	84.9
49	135.2	0.0	327.0

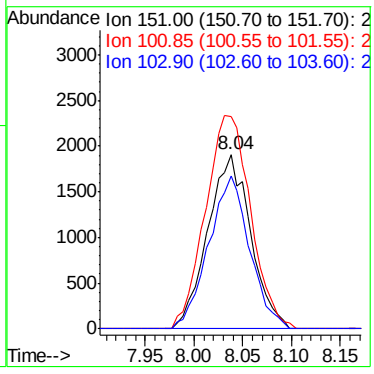


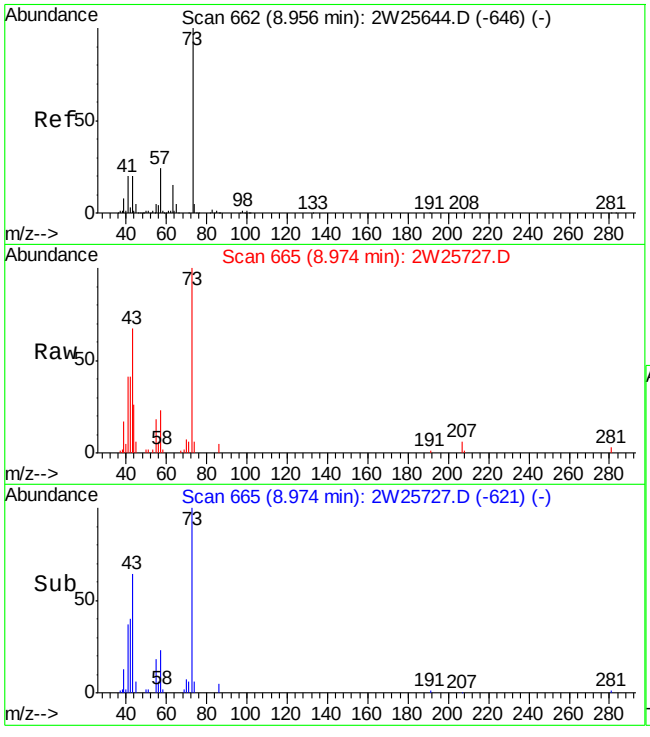


#30
FREON 113
Concen: 0.28 PPBV
RT: 8.04 min Scan# 511
Delta R.T. 0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion:151 Resp: 5812

Ion	Ratio	Lower	Upper
151	100		
101	129.6	96.5	136.5
103	83.8	56.4	96.4

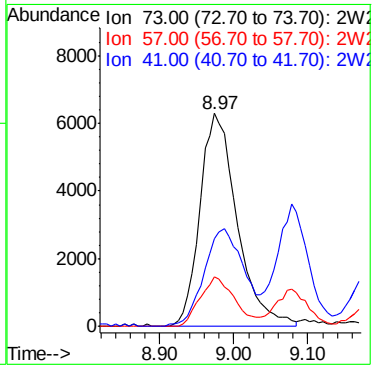


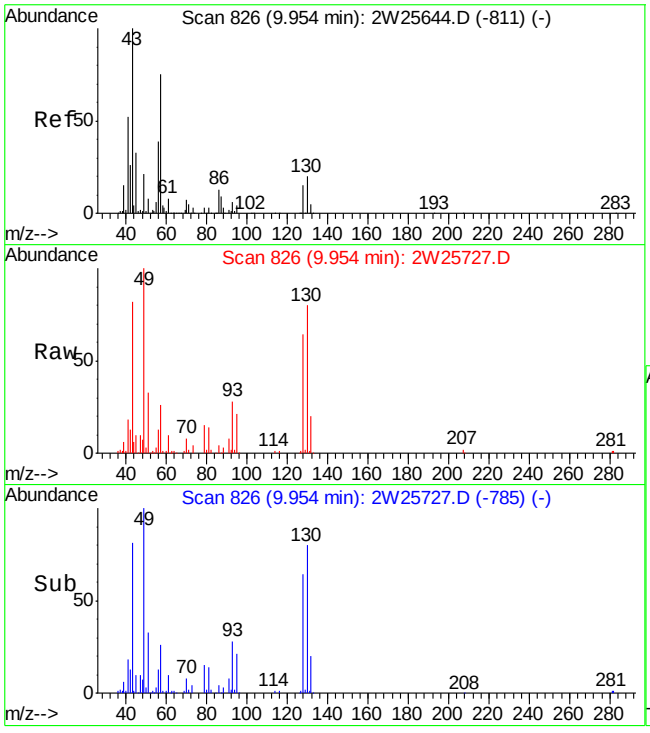


#33
METHYL TERTIARY BUTYL ETHER
Concen: 0.68 PPBV
RT: 8.97 min Scan# 665
Delta R.T. 0.02 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 73 Resp: 21521

Ion	Ratio	Lower	Upper
73	100		
57	21.6	3.3	43.3
41	49.7	1.5	41.5#

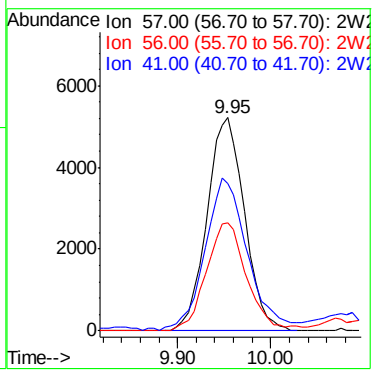


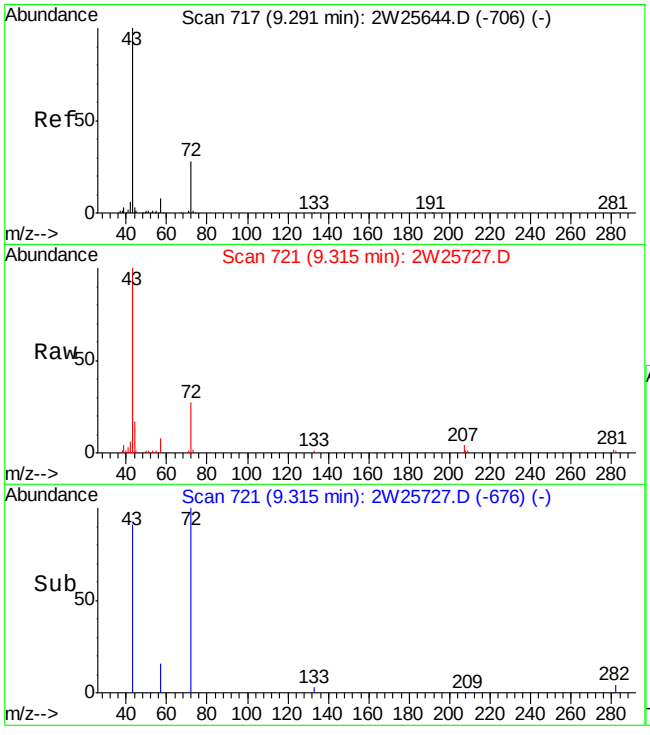


#35
HEXANE
Concen: 0.80 PPBV
RT: 9.95 min Scan# 826
Delta R.T. -0.00 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 57 Resp: 14692

Ion	Ratio	Lower	Upper
57	100		
56	53.8	31.3	71.3
41	80.9	72.4	112.4

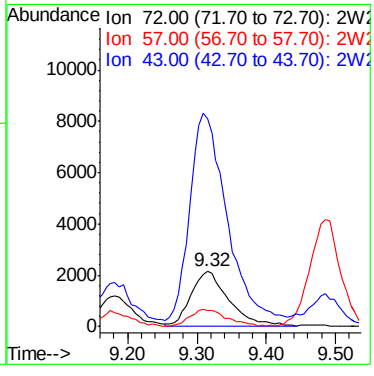




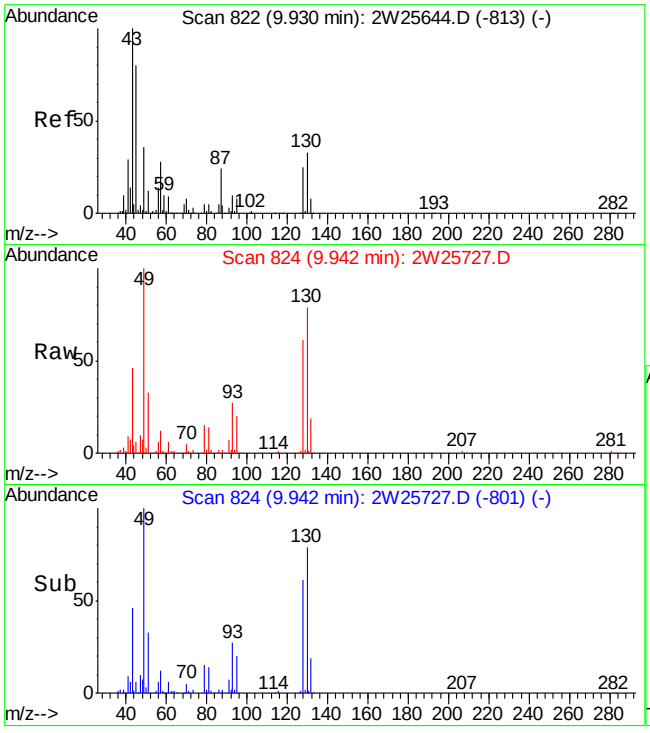
#38
METHYL ETHYL KETONE
Concen: 1.41 PPBV
RT: 9.32 min Scan# 721
Delta R.T. 0.02 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 72 Resp: 8259

Ion	Ratio	Lower	Upper
72	100		
57	29.5	9.4	49.4
43	375.4	343.3	383.3



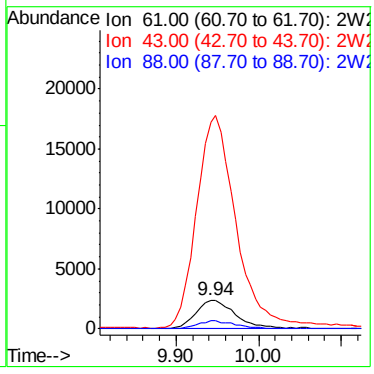
ACCUTEST Laboratories JA28238

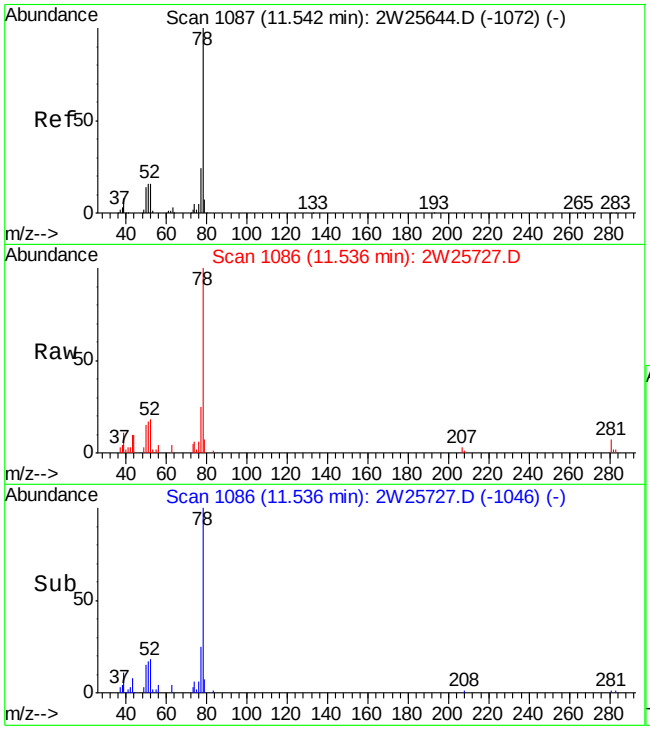


#40
ETHYL ACETATE
Concen: 2.26 PPBV
RT: 9.94 min Scan# 824
Delta R.T. 0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 61 Resp: 7915

Ion	Ratio	Lower	Upper
61	100		
43	765.4	1272.0	1312.0#
88	26.2	25.8	65.8

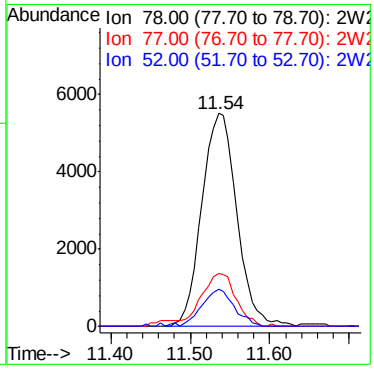


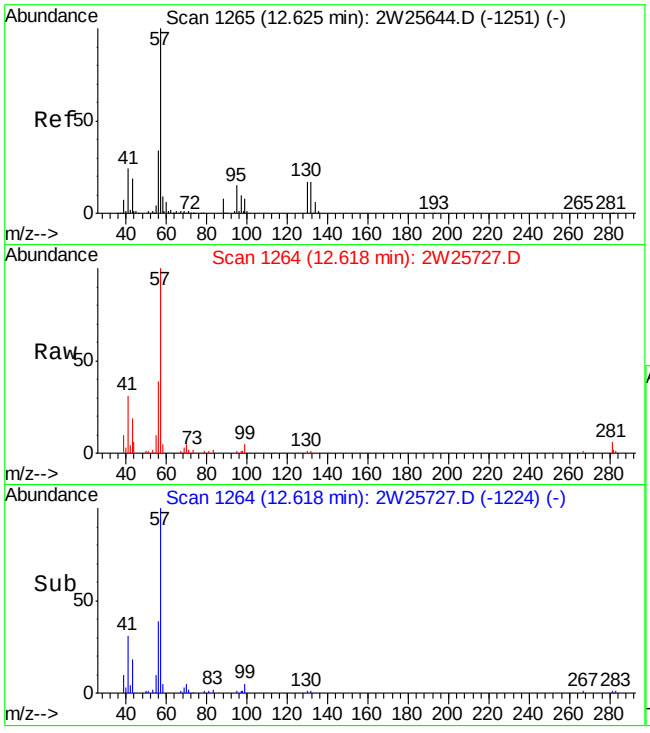


#47
BENZENE
Concen: 0.36 PPBV
RT: 11.54 min Scan# 1086
Delta R.T. -0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 78 Resp: 16849

Ion	Ratio	Lower	Upper
78	100		
77	24.7	3.8	43.8
52	16.0	0.0	35.8

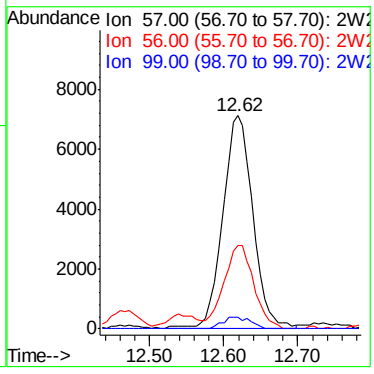


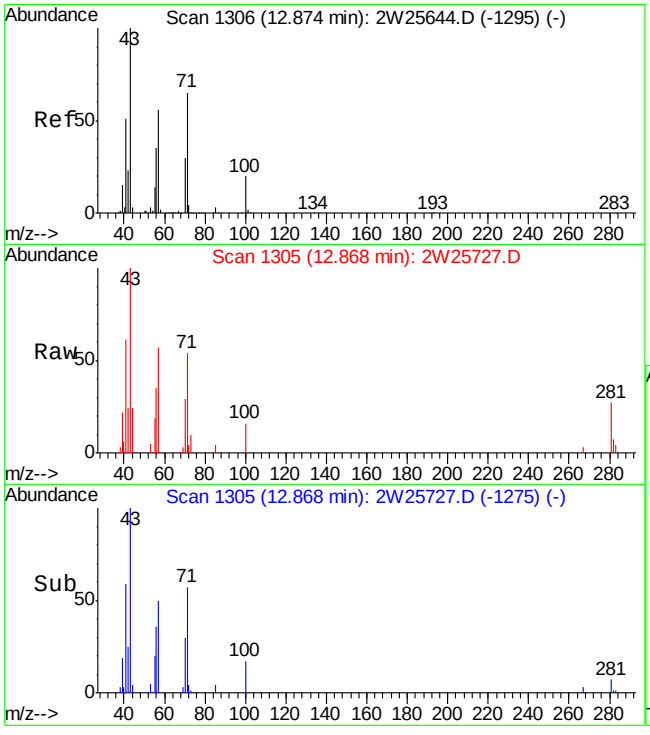


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.35 PPBV
RT: 12.62 min Scan# 1264
Delta R.T. -0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 57 Resp: 19925

Ion	Ratio	Lower	Upper
57	100		
56	39.4	13.2	53.2
99	5.1	0.0	28.8

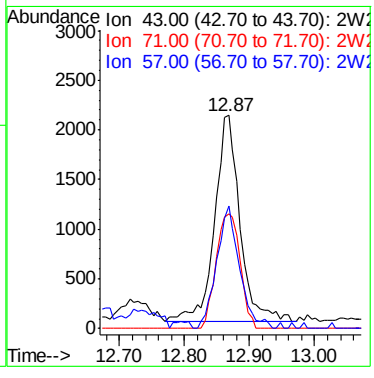


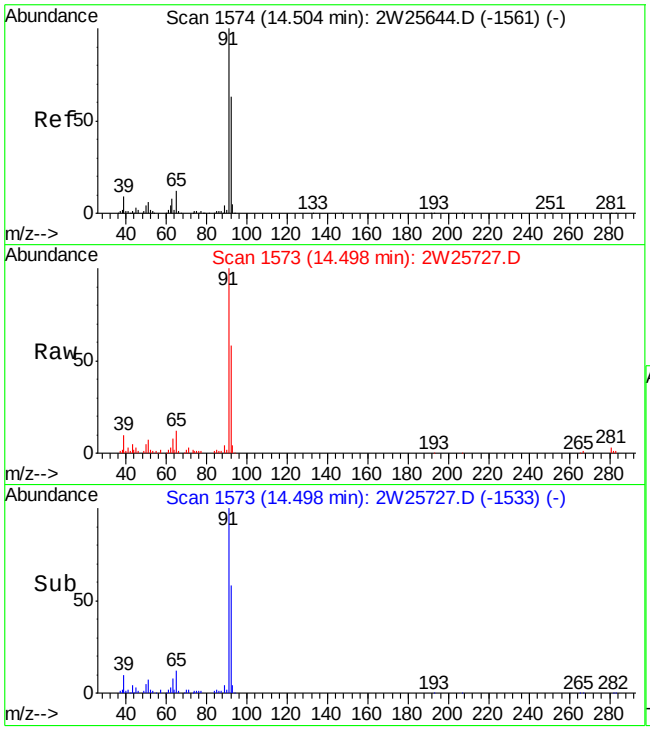


#56
HEPTANE
Concen: 0.25 PPBV
RT: 12.87 min Scan# 1305
Delta R.T. -0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 43 Resp: 5624

Ion	Ratio	Lower	Upper
43	100		
71	53.1	44.0	84.0
57	53.9	35.5	75.5

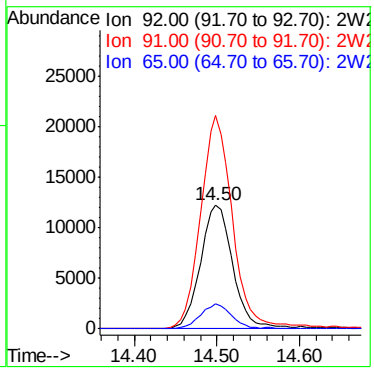


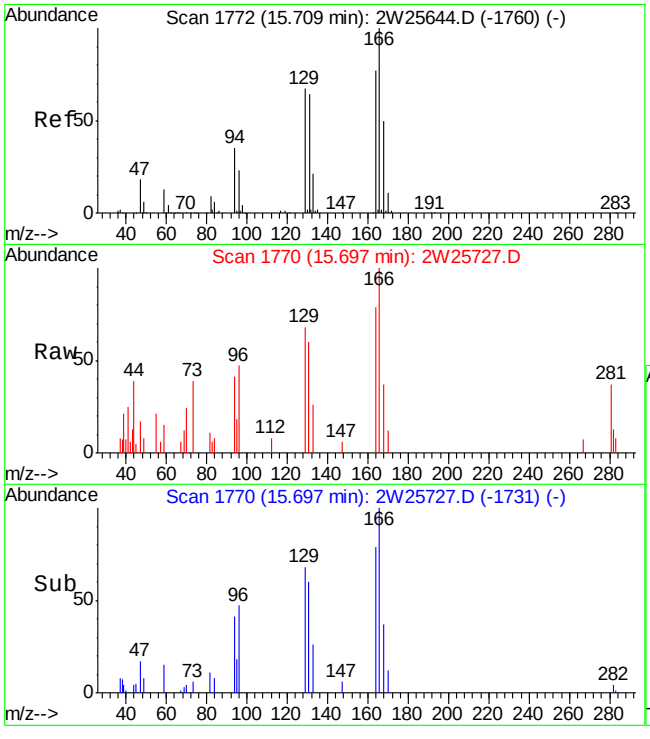


#60
TOLUENE
Concen: 1.09 PPBV
RT: 14.50 min Scan# 1573
Delta R.T. -0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 92 Resp: 33214

Ion	Ratio	Lower	Upper
92	100		
91	172.3	140.7	180.7
65	19.5	0.0	38.6

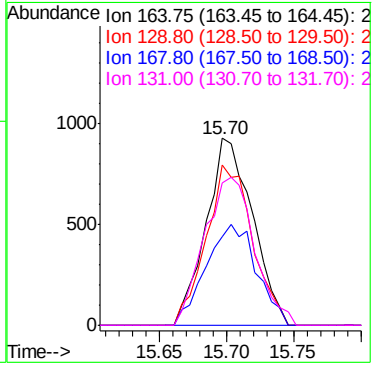


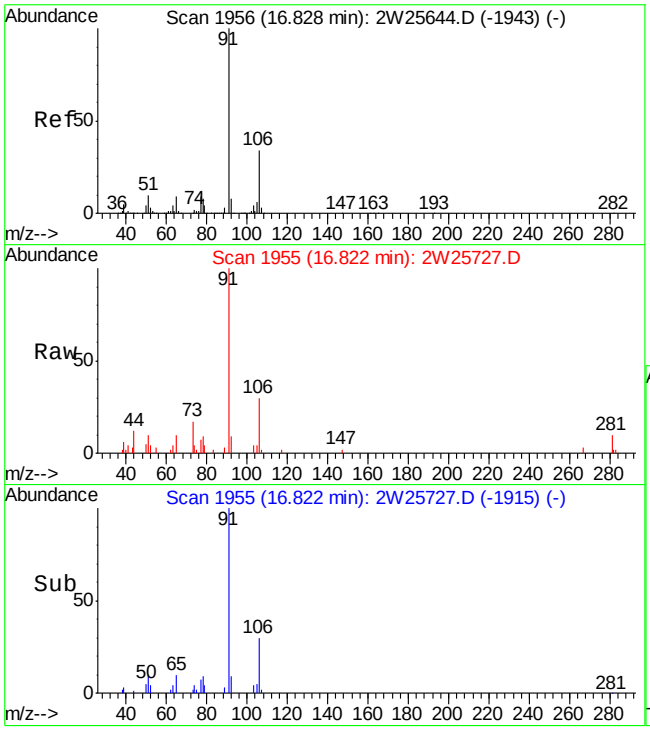


#65
TETRACHLOROETHYLENE
Concen: 0.11 PPBV
RT: 15.70 min Scan# 1770
Delta R.T. -0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion:164 Resp: 2224

Ion	Ratio	Lower	Upper
164	100		
129	85.2	65.6	105.6
168	58.8	43.4	83.4
131	85.7	62.3	102.3

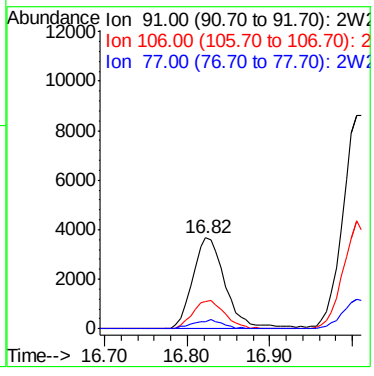


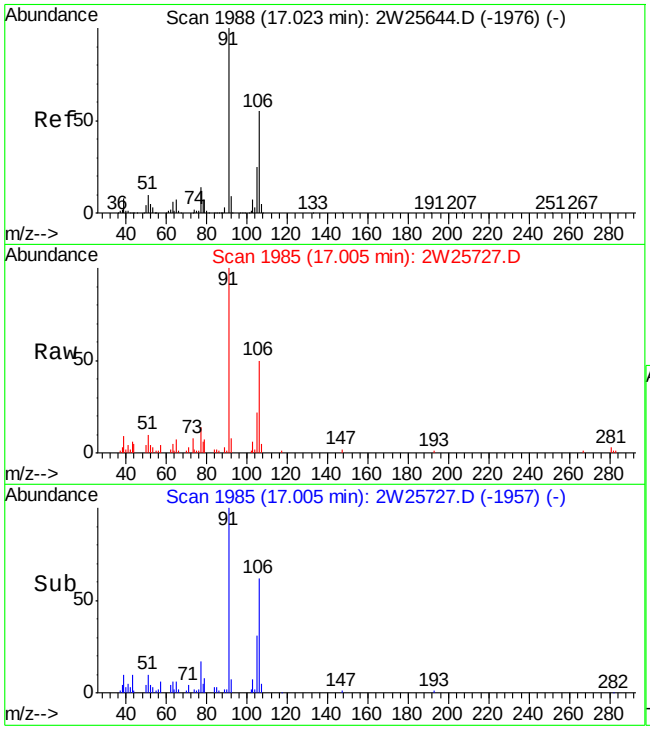


#71
ETHYLBENZENE
Concen: 0.19 PPBV
RT: 16.82 min Scan# 1955
Delta R.T. -0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion: 91 Resp: 10079

Ion	Ratio	Lower	Upper
91	100		
106	29.8	13.0	53.0
77	0.0	0.0	28.8

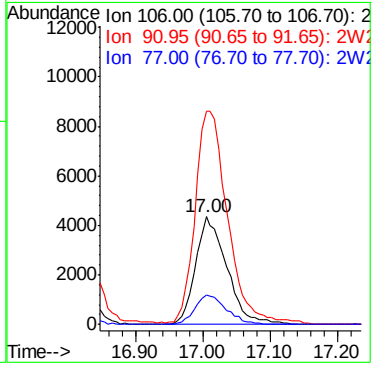


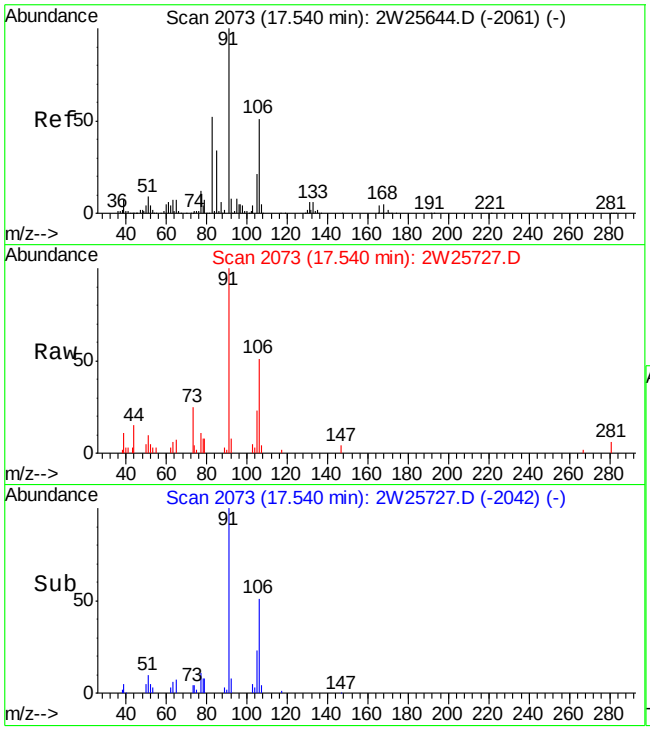


#72
m,p-XYLENE
Concen: 0.69 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.02 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion:106 Resp: 14059

Ion	Ratio	Lower	Upper
106	100		
91	198.2	147.4	221.2
77	27.2	20.5	30.7

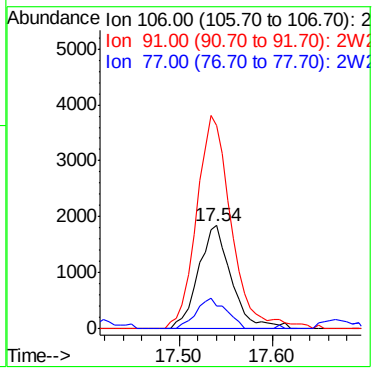


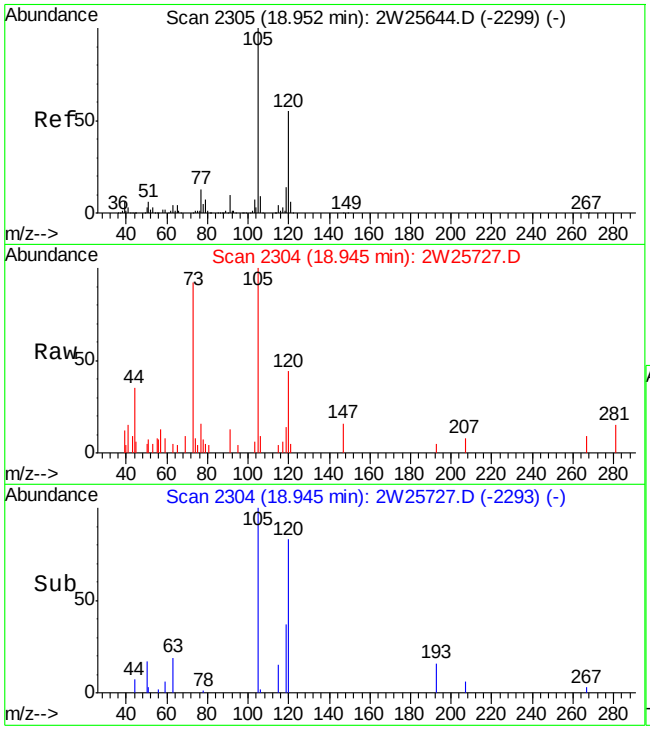


#73
o-XYLENE
Concen: 0.24 PPBV
RT: 17.54 min Scan# 2073
Delta R.T. -0.00 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion:106 Resp: 4546

Ion	Ratio	Lower	Upper
106	100		
91	218.9	179.7	219.7
77	26.7	5.4	45.4

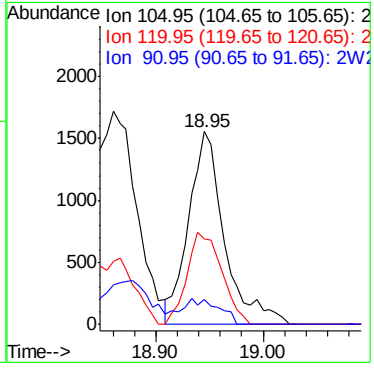


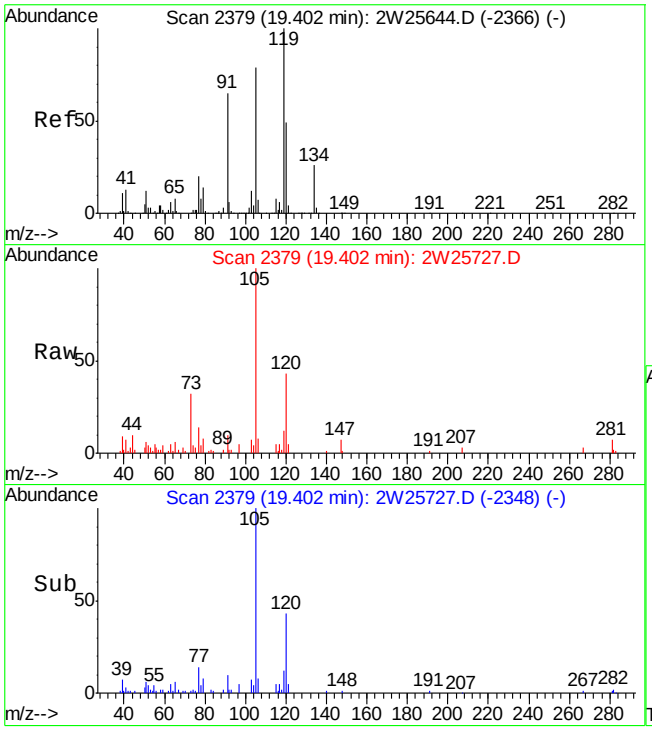


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.12 PPBV
RT: 18.95 min Scan# 2304
Delta R.T. -0.01 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion:105 Resp: 3587

Ion	Ratio	Lower	Upper
105	100		
120	46.8	33.8	73.8
91	0.0	0.0	30.1

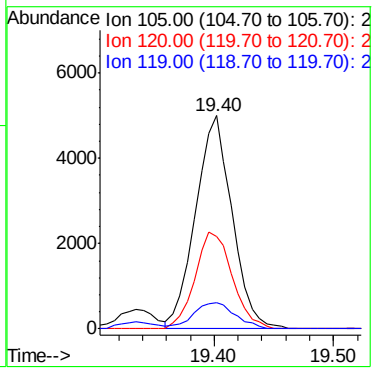




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.44 PPBV
RT: 19.40 min Scan# 2379
Delta R.T. -0.00 min
Lab File: 2W25727.D
Acq: 29 Sep 2009 1:59 am

Tgt Ion:105 Resp: 10649

Ion	Ratio	Lower	Upper
105	100		
120	46.2	41.7	81.7
119	14.1	106.1	146.1#



Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 10/08/09 11:42

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25728.D Vial: 6
Acq On : 29 Sep 2009 3:27 am Operator: YOUMINH
Sample : JA28238-3 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:49:05 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	103975	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	513576	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	218900	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	218900	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	94329	4.18	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 83.60%

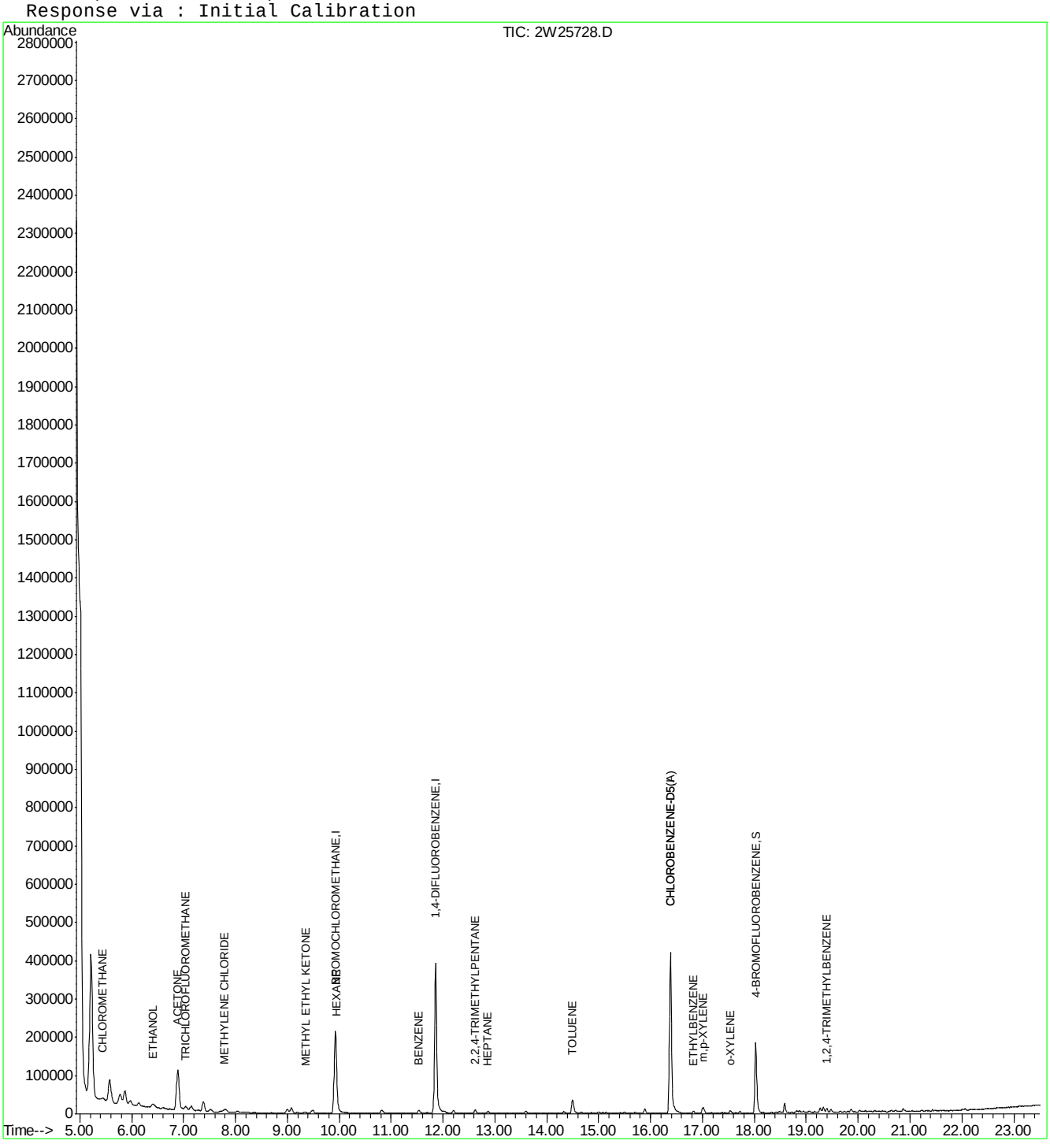
Target Compounds						Qvalue
9) CHLOROMETHANE	5.45	52	3391	0.70	PPBV	99
17) TRICHLOROFLUOROMETHANE	7.04	101	13905	0.44	PPBV	99
19) ACETONE	6.88	58	38429	5.39	PPBV #	45
26) ETHANOL	6.41	45	29446	6.06	PPBV	96
28) METHYLENE CHLORIDE	7.78	84	4424	0.37	PPBV	93
35) HEXANE	9.95	57	7944	0.42	PPBV	90
38) METHYL ETHYL KETONE	9.35	72	2413m	0.40	PPBV	
47) BENZENE	11.54	78	11154	0.24	PPBV	97
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	10514	0.18	PPBV #	85
56) HEPTANE	12.86	43	3927	0.17	PPBV	79
60) TOLUENE	14.50	92	23370	0.76	PPBV	94
71) ETHYLBENZENE	16.83	91	6108	0.12	PPBV #	89
72) m,p-XYLENE	17.01	106	7757	0.39	PPBV	93
73) o-XYLENE	17.53	106	2529	0.14	PPBV #	82
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	5631	0.24	PPBV #	20

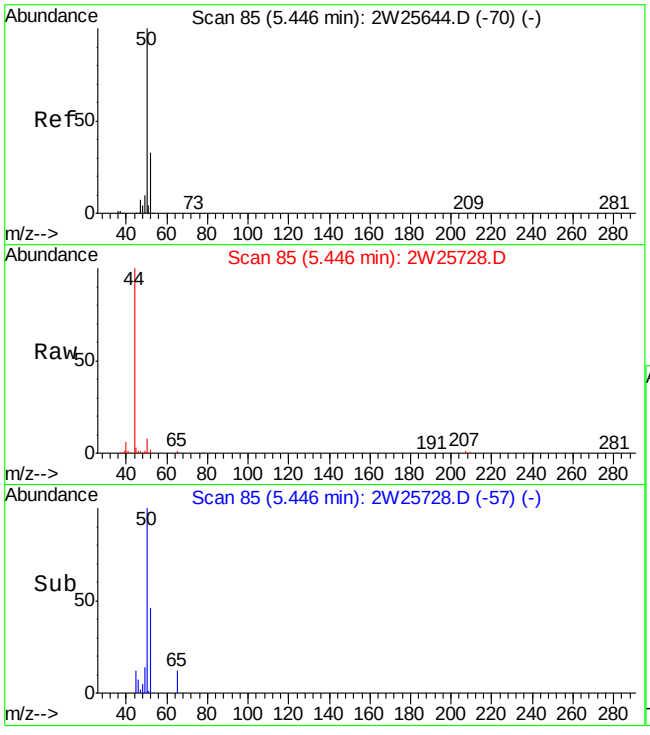
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25728.D Vial: 6
Acq On : 29 Sep 2009 3:27 am Operator: YOUMINH
Sample : JA28238-3 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:43 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

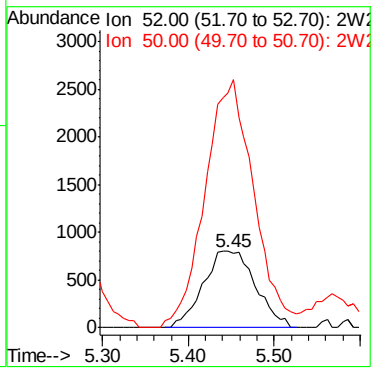


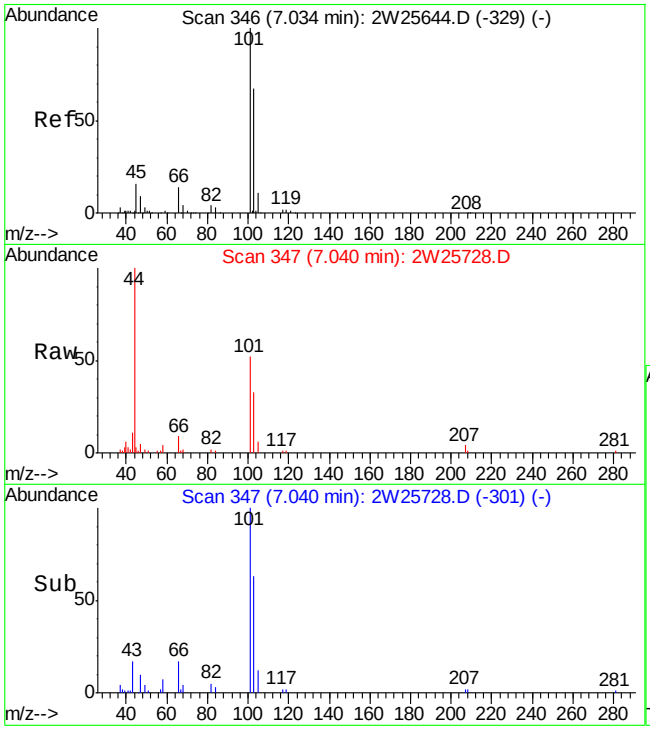


#9
CHLOROMETHANE
Concen: 0.70 PPBV
RT: 5.45 min Scan# 85
Delta R.T. 0.00 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 52 Resp: 3391

Ion	Ratio	Lower	Upper
52	100		
50	293.8	272.1	312.1

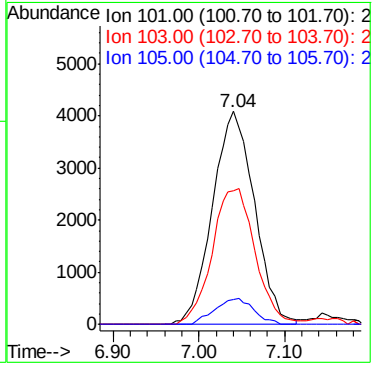


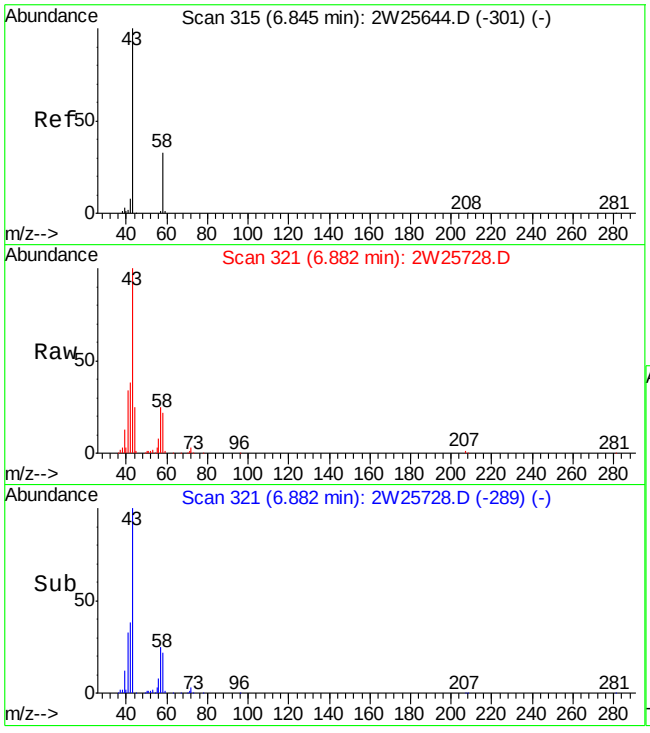


#17
TRICHLOROFLUOROMETHANE
Concen: 0.44 PPBV
RT: 7.04 min Scan# 347
Delta R.T. 0.01 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion:101 Resp: 13905

Ion	Ratio	Lower	Upper
101	100		
103	65.1	46.0	86.0
105	11.4	0.0	30.8

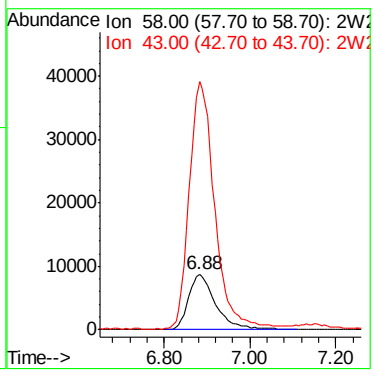


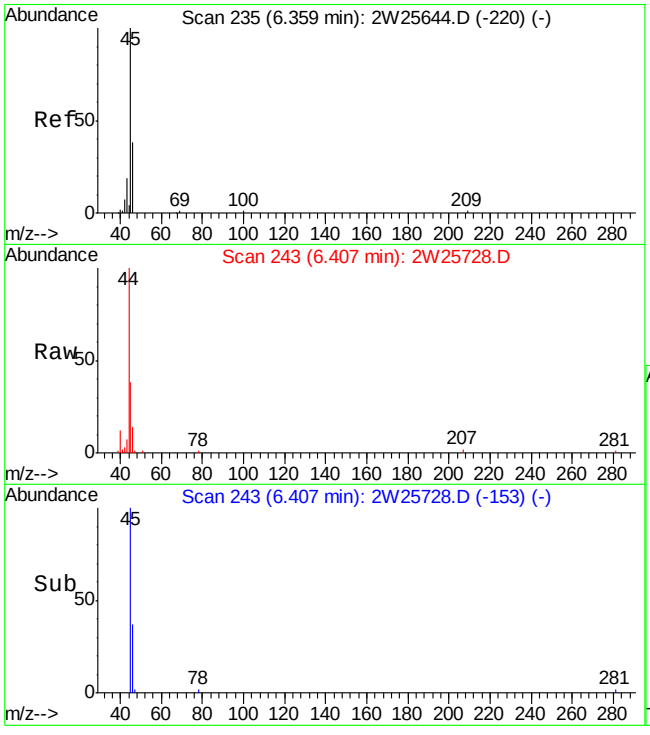


#19
ACETONE
Concen: 5.39 PPBV
RT: 6.88 min Scan# 321
Delta R.T. 0.04 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 58 Resp: 38429

Ion	Ratio	Lower	Upper
58	100		
43	414.2	284.9	324.9#

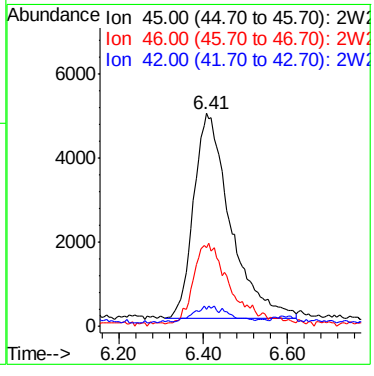


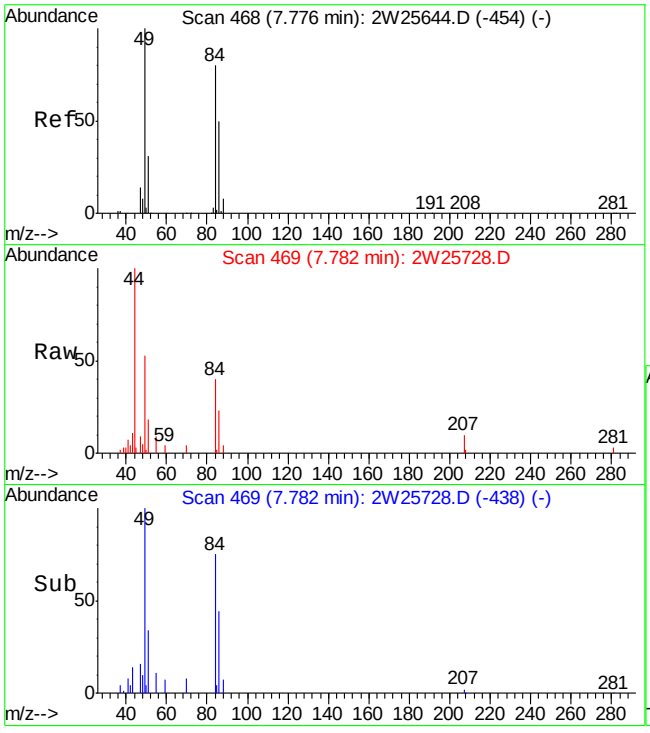


#26
ETHANOL
Concen: 6.06 PPBV
RT: 6.41 min Scan# 243
Delta R.T. 0.05 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 45 Resp: 29446

Ion	Ratio	Lower	Upper
45	100		
46	37.5	19.4	59.4
42	5.0	0.0	28.5

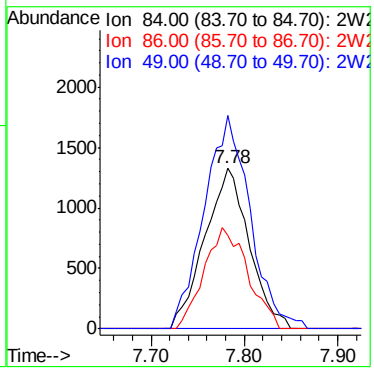


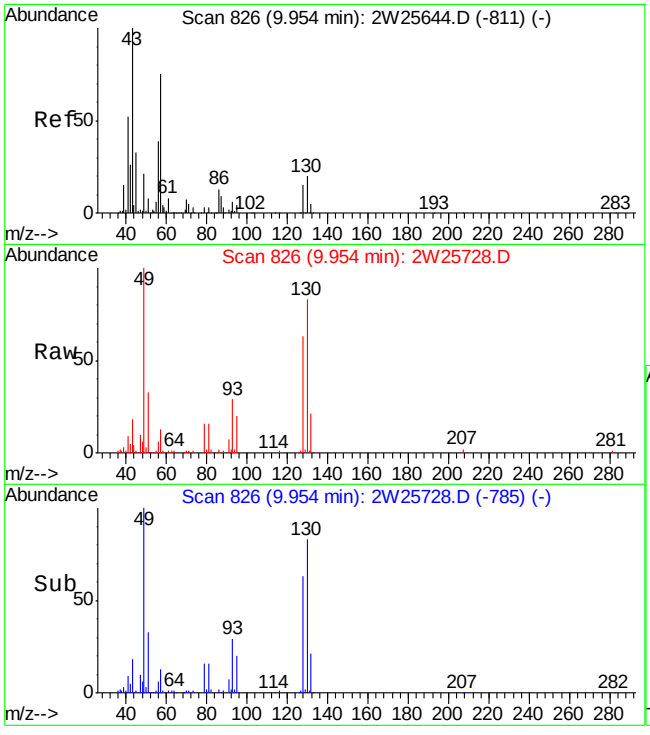


#28
METHYLENE CHLORIDE
Concen: 0.37 PPBV
RT: 7.78 min Scan# 469
Delta R.T. 0.01 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 84 Resp: 4424

Ion	Ratio	Lower	Upper
84	100		
86	62.0	44.9	84.9
49	137.4	0.0	327.0

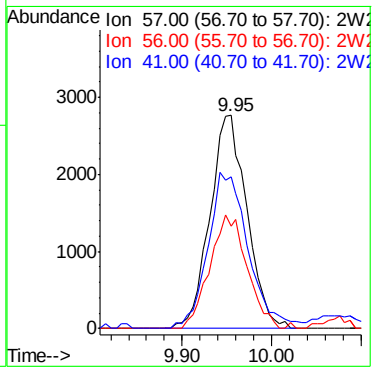


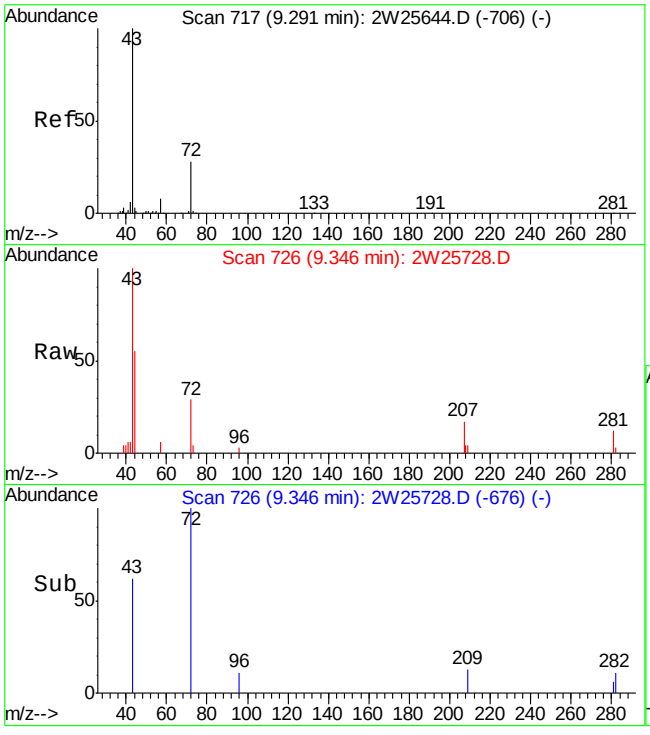


#35
HEXANE
Concen: 0.42 PPBV
RT: 9.95 min Scan# 826
Delta R.T. 0.00 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 57 Resp: 7944

Ion	Ratio	Lower	Upper
57	100		
56	53.7	31.3	71.3
41	79.8	72.4	112.4

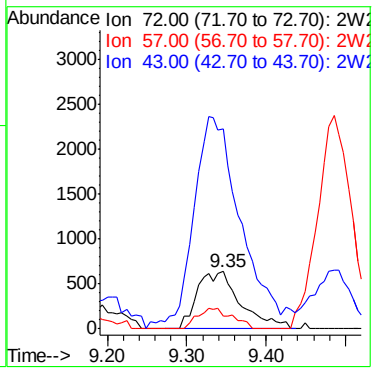


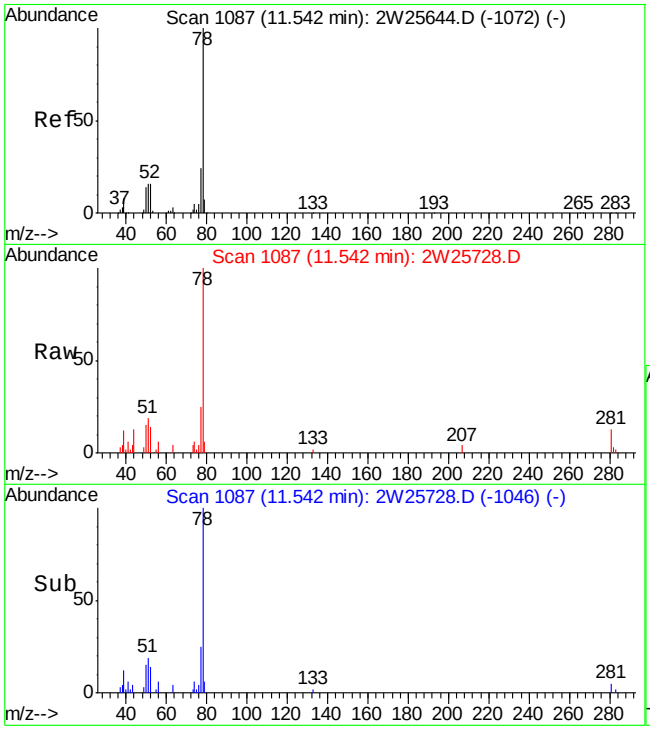


#38
METHYL ETHYL KETONE
Concen: 0.40 PPBV m
RT: 9.35 min Scan# 726
Delta R.T. 0.05 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 72 Resp: 2413

Ion	Ratio	Lower	Upper
72	100		
57	22.2	9.4	49.4
43	350.0	343.3	383.3

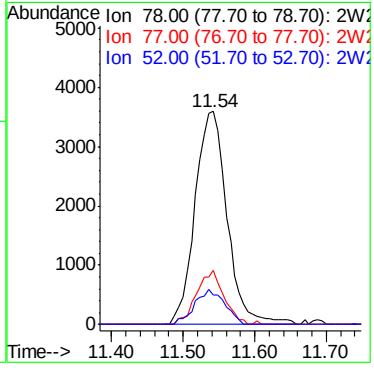


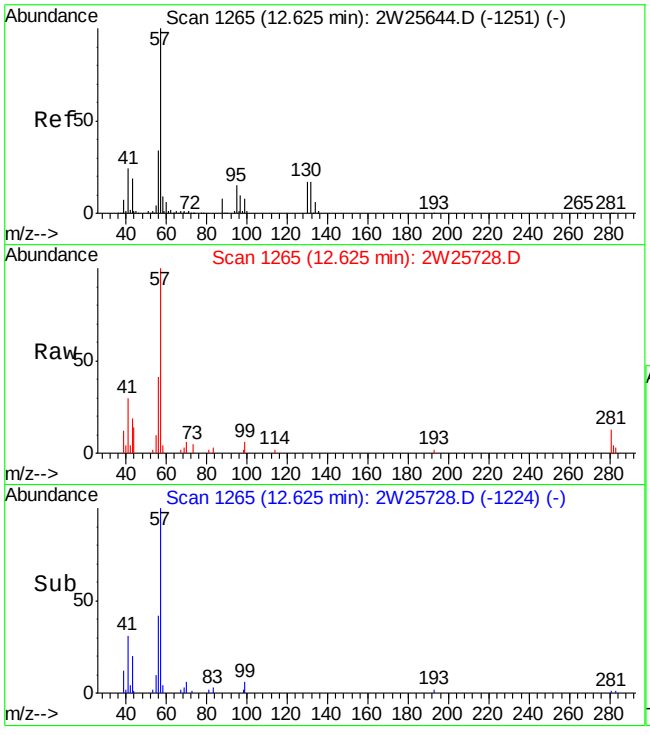


#47
BENZENE
Concen: 0.24 PPBV
RT: 11.54 min Scan# 1087
Delta R.T. 0.00 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 78 Resp: 11154

Ion	Ratio	Lower	Upper
78	100		
77	21.7	3.8	43.8
52	15.2	0.0	35.8

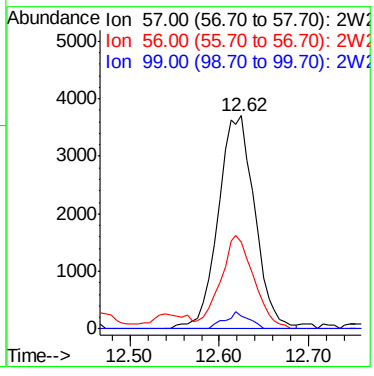


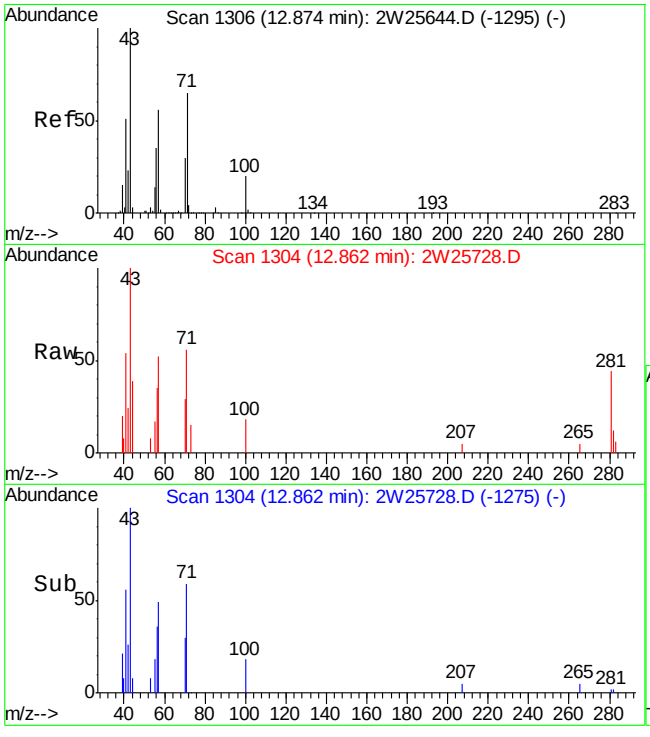


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.18 PPBV
RT: 12.62 min Scan# 1265
Delta R.T. 0.00 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 57 Resp: 10514

Ion	Ratio	Lower	Upper
57	100		
56	40.6	13.2	53.2
99	0.0	0.0	28.8

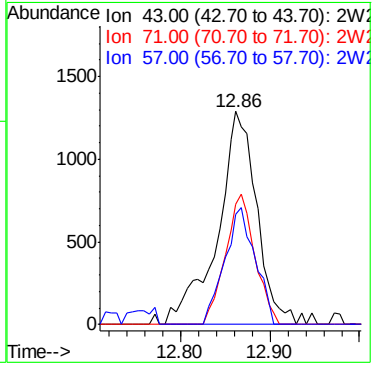


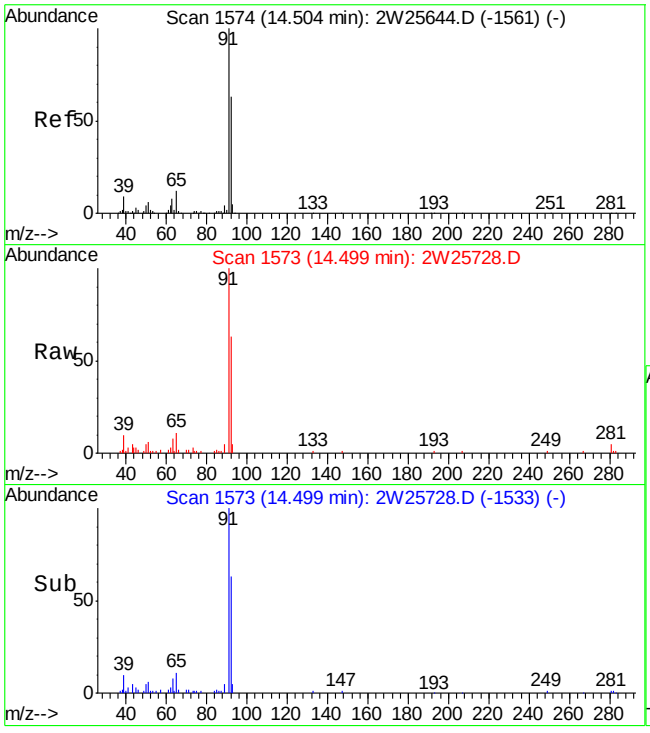


#56
HEPTANE
Concen: 0.17 PPBV
RT: 12.86 min Scan# 1304
Delta R.T. -0.01 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 43 Resp: 3927

Ion	Ratio	Lower	Upper
43	100		
71	46.0	44.0	84.0
57	42.6	35.5	75.5

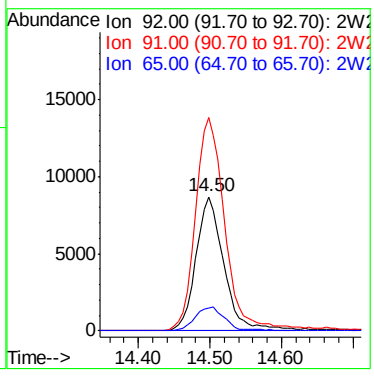


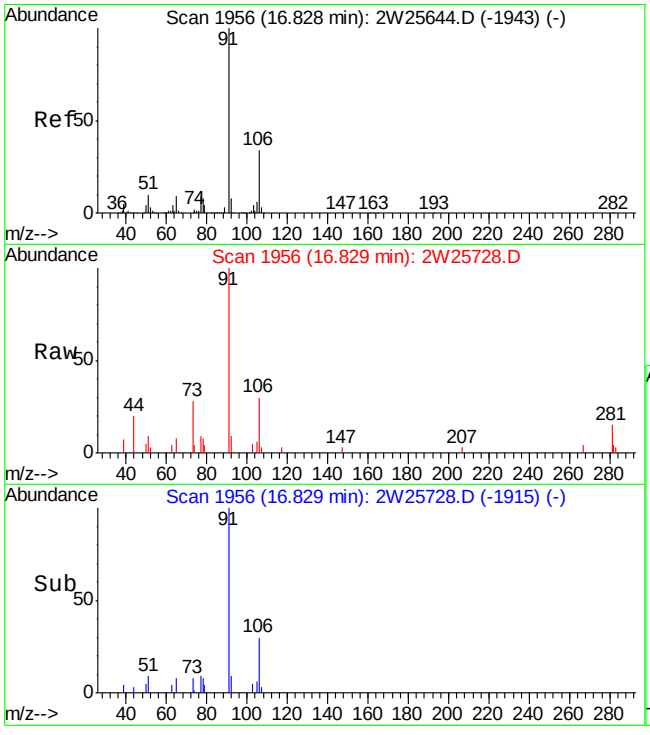


#60
TOLUENE
Concen: 0.76 PPBV
RT: 14.50 min Scan# 1573
Delta R.T. -0.01 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 92 Resp: 23370

Ion	Ratio	Lower	Upper
92	100		
91	170.2	140.7	180.7
65	18.9	0.0	38.6

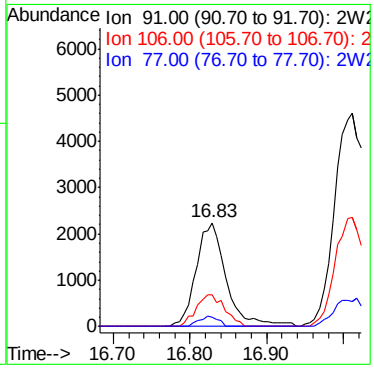


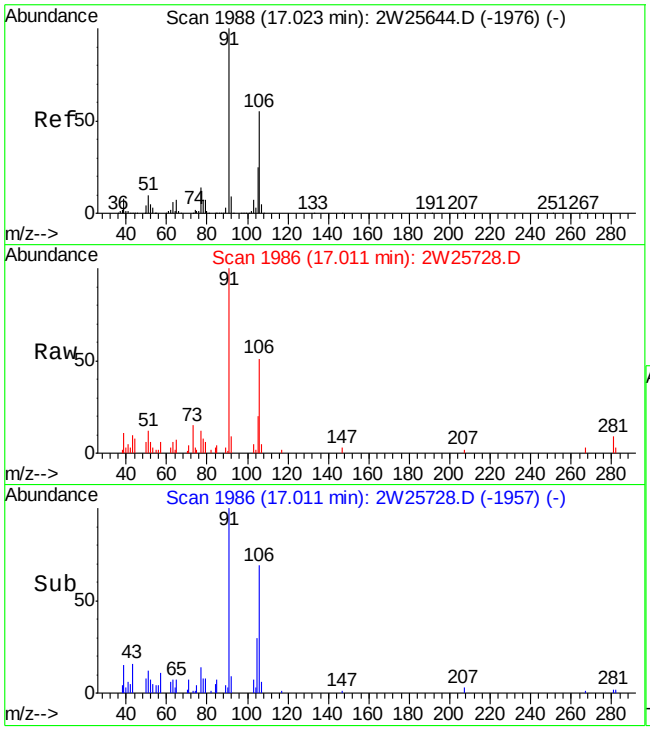


#71
ETHYLBENZENE
Concen: 0.12 PPBV
RT: 16.83 min Scan# 1956
Delta R.T. 0.00 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion: 91 Resp: 6108

Ion	Ratio	Lower	Upper
91	100		
106	28.9	13.0	53.0
77	0.0	0.0	28.8

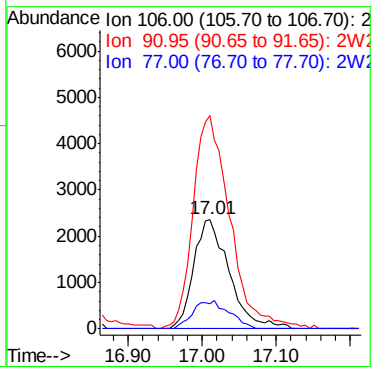


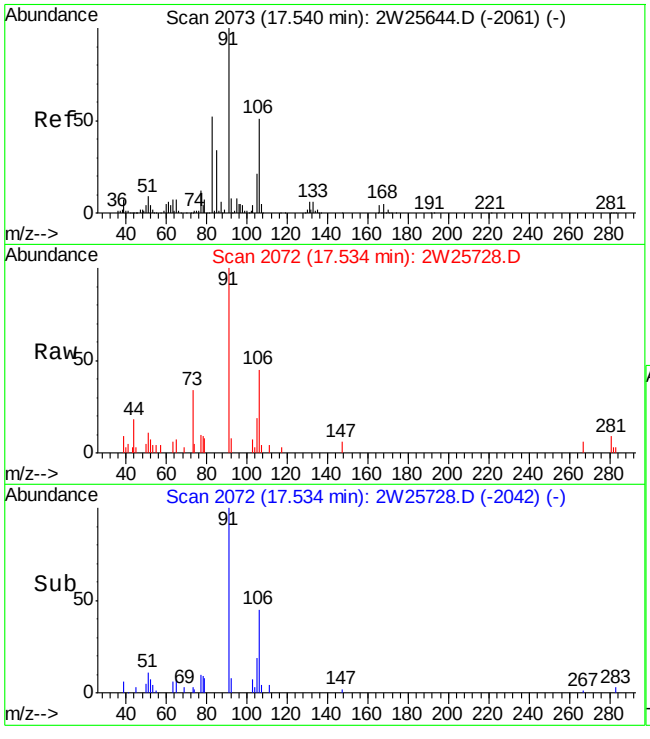


#72
m,p-XYLENE
Concen: 0.39 PPBV
RT: 17.01 min Scan# 1986
Delta R.T. -0.01 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion:106 Resp: 7757

Ion	Ratio	Lower	Upper
106	100		
91	195.3	147.4	221.2
77	22.6	20.5	30.7

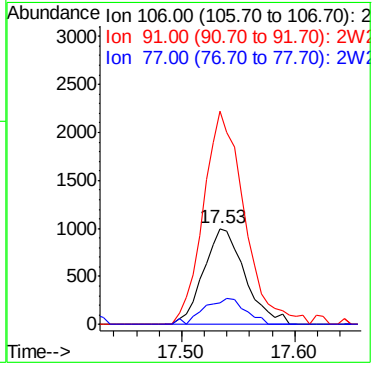


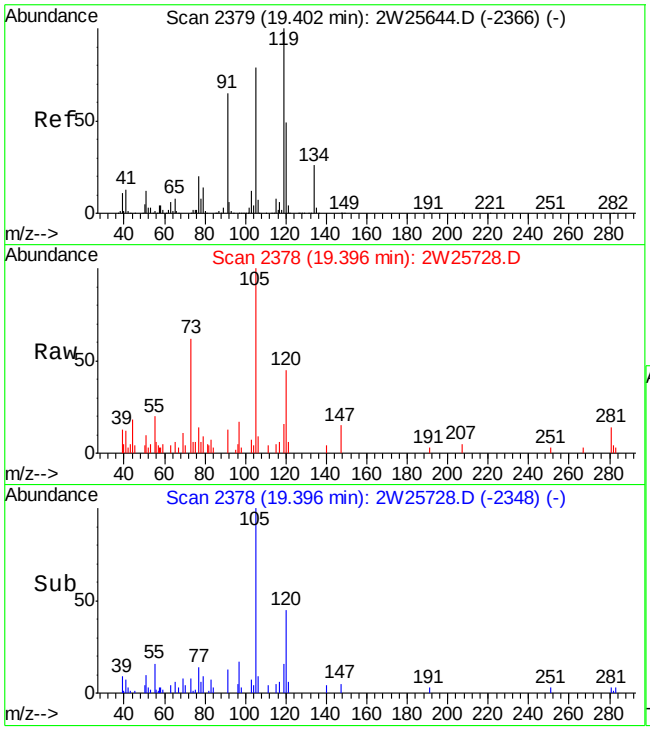


#73
o-XYLENE
Concen: 0.14 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. -0.01 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion:106 Resp: 2529

Ion	Ratio	Lower	Upper
106	100		
91	221.5	179.7	219.7#
77	0.0	5.4	45.4#

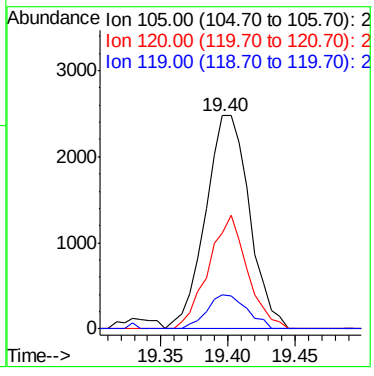




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.24 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. -0.01 min
Lab File: 2W25728.D
Acq: 29 Sep 2009 3:27 am

Tgt Ion:105 Resp: 5631

Ion	Ratio	Lower	Upper
105	100		
120	47.1	41.7	81.7
119	0.0	106.1	146.1#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25747.d
Acq On : 29 Sep 2009 8:32 pm
Operator : YOUMINH
Sample : JA28238-4
Misc : MS86174,V2W1084,400,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 30 11:32:54 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

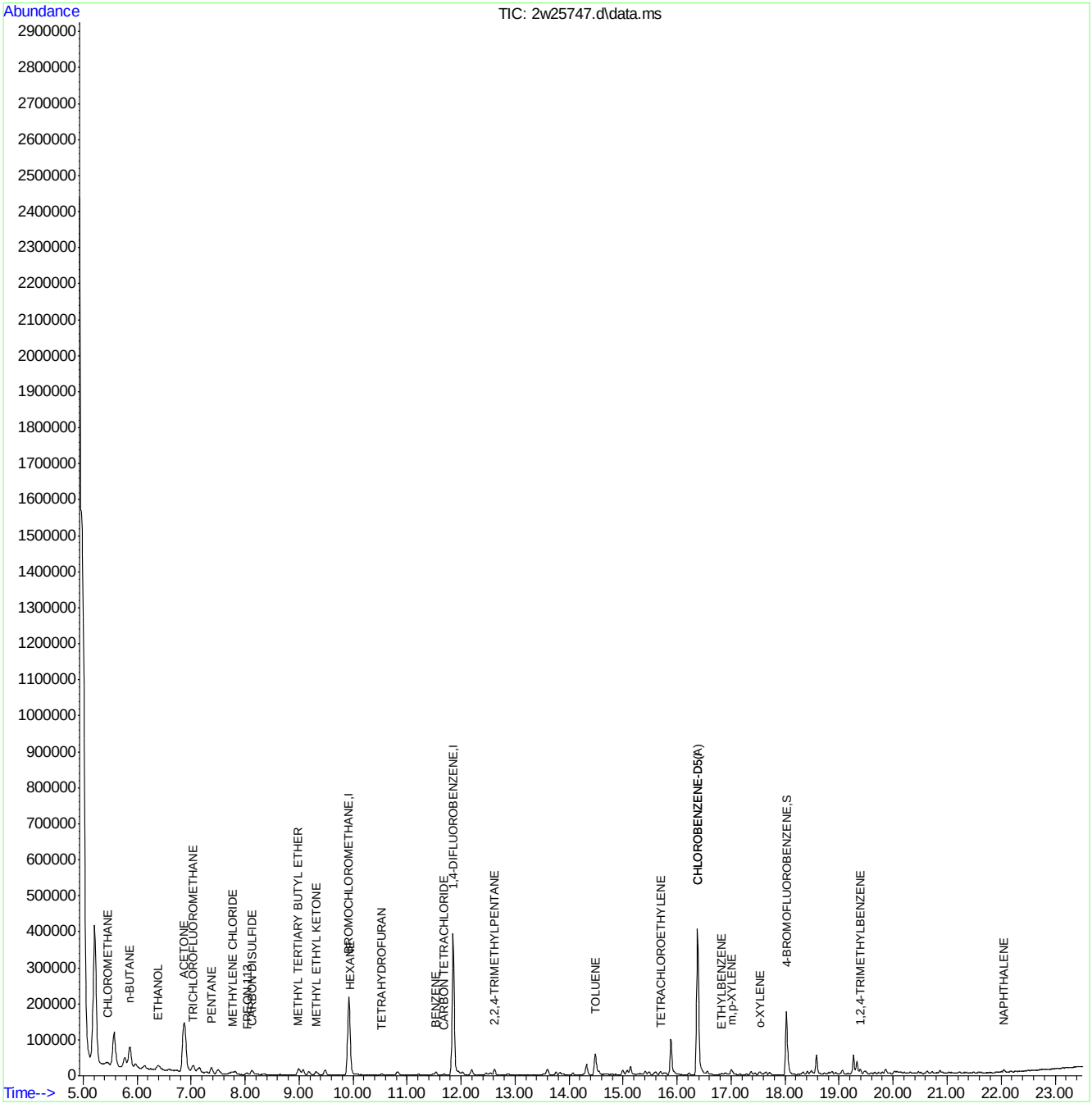
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.918	128	103405	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.852	114	487241	10.00	PPBV	-0.01
63) CHLOROBENZENE-D5	16.378	82	211110	10.00	PPBV	-0.01
95) CHLOROBENZENE-D5(A)	16.378	82	211247	10.00	PPBV	-0.01
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.027	95	87975	4.04	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 80.80%			
Target Compounds						Qvalue
9) CHLOROMETHANE	5.446	52	4503	0.93	PPBV	97
12) n-BUTANE	5.866	43	99815	4.24	PPBV #	97
17) TRICHLOROFLUOROMETHANE	7.040	101	23237	0.73	PPBV	100
19) ACETONE	6.870	58	99892	14.09	PPBV	95
20) PENTANE	7.381	42	10309	0.74	PPBV	99
25) CARBON DISULFIDE	8.123	76	28110	0.68	PPBV	88
26) ETHANOL	6.389	45	37496	7.76	PPBV	94
28) METHYLENE CHLORIDE	7.776	84	4944	0.41	PPBV	94
30) FREON 113	8.044	151	2479	0.12	PPBV	92
33) METHYL TERTIARY BUTYL ...	8.975	73	10622	0.33	PPBV #	63
34) TETRAHYDROFURAN	10.520	42	2696	0.21	PPBV	93
35) HEXANE	9.948	57	7265	0.39	PPBV	92
38) METHYL ETHYL KETONE	9.315	72	6340	1.06	PPBV	94
44) CARBON TETRACHLORIDE	11.688	117	3125	0.12	PPBV #	84
47) BENZENE	11.530	78	11359	0.25	PPBV	99
53) 2,2,4-TRIMETHYLPENTANE	12.613	57	12451	0.23	PPBV #	60
60) TOLUENE	14.498	92	18879	0.65	PPBV	94
65) TETRACHLOROETHYLENE	15.703	164	2096	0.11	PPBV	93
71) ETHYLBENZENE	16.822	91	5580	0.11	PPBV #	92
72) m,p-XYLENE	17.005	106	7865	0.41	PPBV #	72
73) o-XYLENE	17.534	106	2803	0.16	PPBV #	81
85) 1,2,4-TRIMETHYLBENZENE	19.396	105	6379	0.28	PPBV #	20
96) NAPHTHALENE	22.054	128	7452	1.01	PPBV #	100

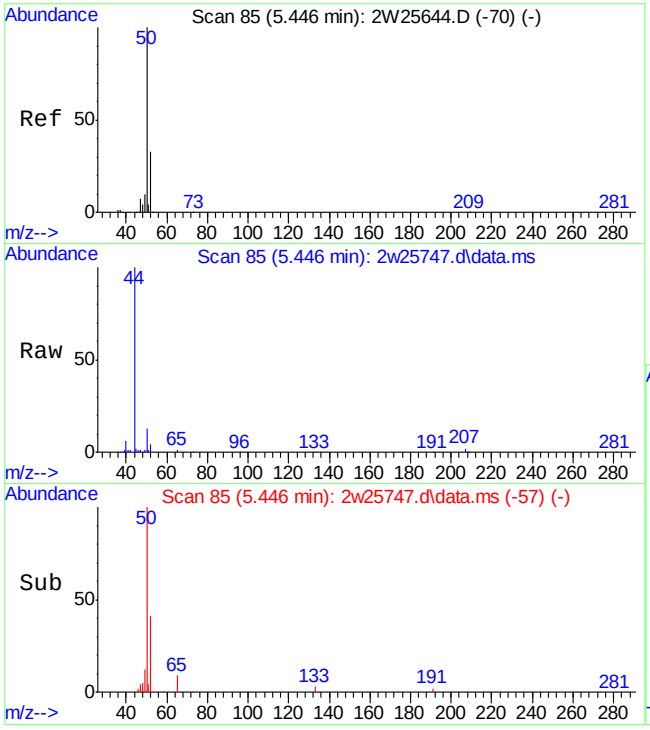
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25747.d
Acq On : 29 Sep 2009 8:32 pm
Operator : YOUMINH
Sample : JA28238-4
Misc : MS86174,V2W1084,400,,,,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Sep 30 11:32:54 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

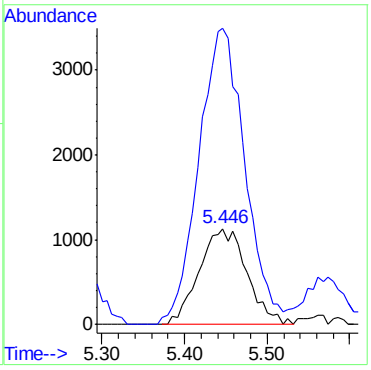


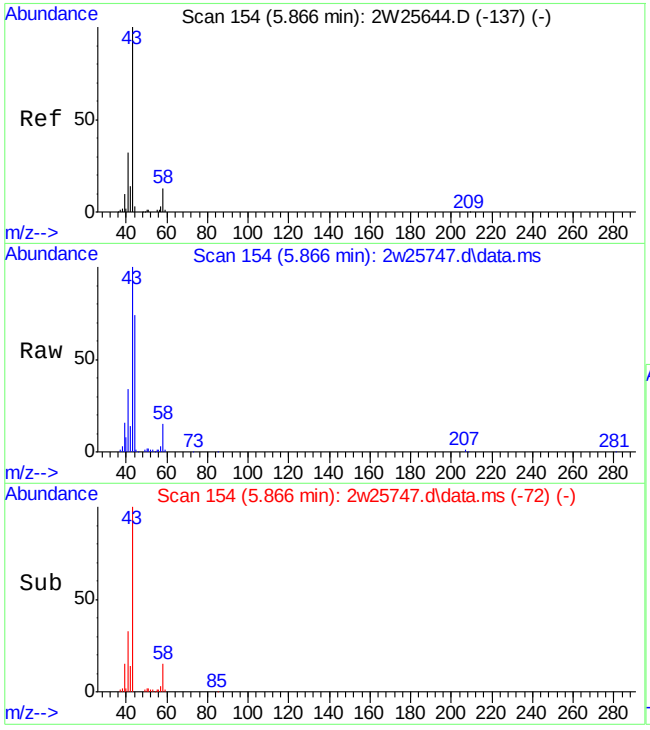


#9
CHLOROMETHANE
Concen: 0.93 PPBV
RT: 5.446 min Scan# 85
Delta R.T. 0.000 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 52 Resp: 4503

Ion	Ratio	Lower	Upper
52	100		
50	297.1	272.1	312.1

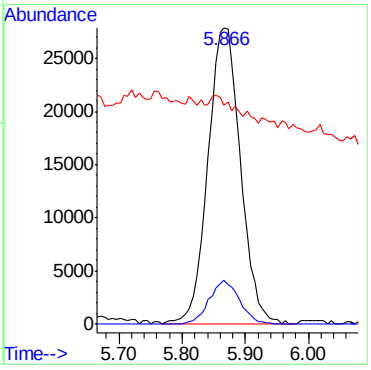


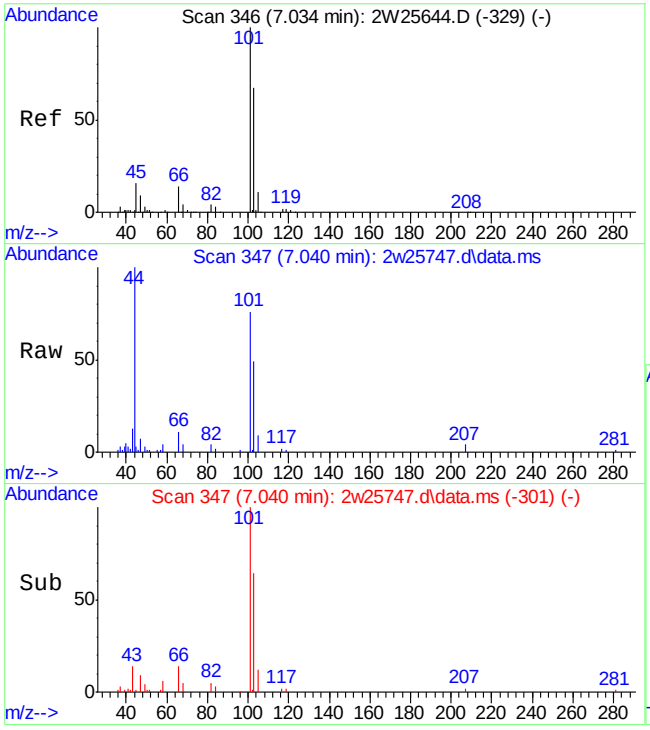


#12
n-BUTANE
Concen: 4.24 PPBV
RT: 5.866 min Scan# 154
Delta R.T. 0.000 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 43 Resp: 99815

Ion	Ratio	Lower	Upper
43	100		
58	13.6	10.7	16.1
44	7.3	2.6	3.8#

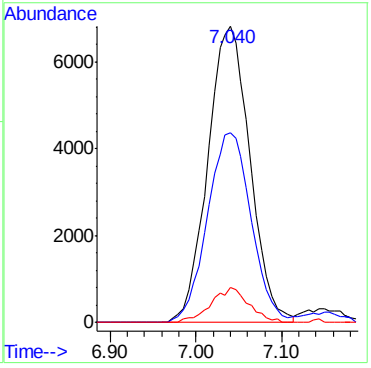


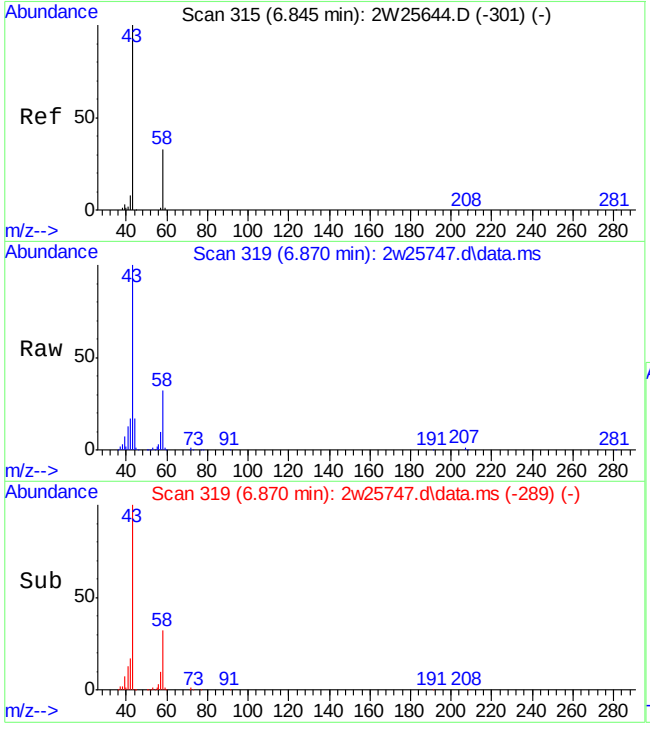


#17
TRICHLOROFLUOROMETHANE
Concen: 0.73 PPBV
RT: 7.040 min Scan# 347
Delta R.T. 0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:101 Resp: 23237

Ion	Ratio	Lower	Upper
101	100		
103	66.2	46.0	86.0
105	10.5	0.0	30.8

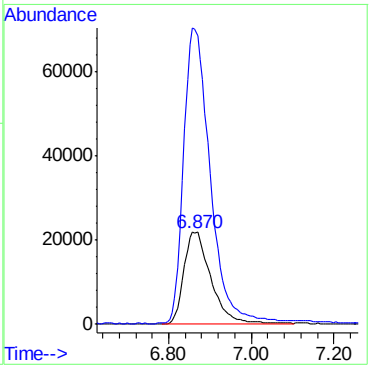


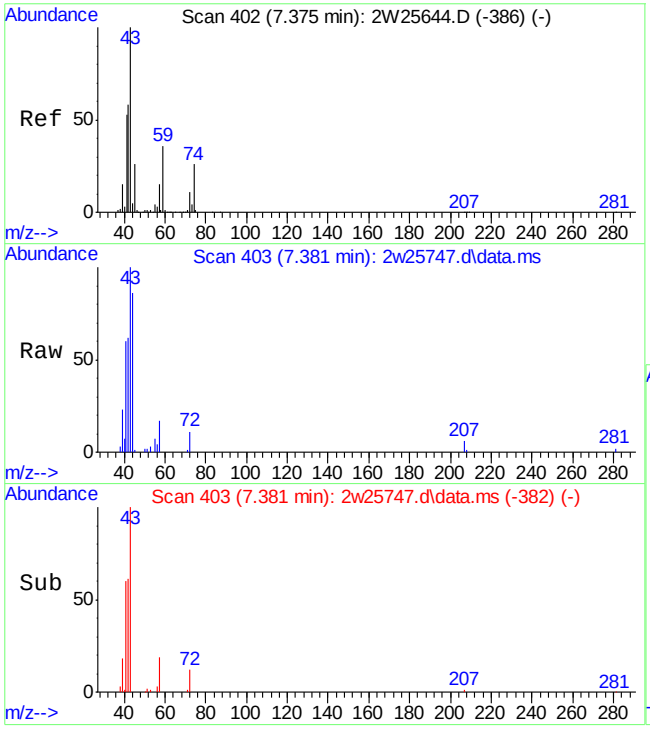


#19
ACETONE
Concen: 14.09 PPBV
RT: 6.870 min Scan# 319
Delta R.T. 0.024 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 58 Resp: 99892

Ion	Ratio	Lower	Upper
58	100		
43	315.1	284.9	324.9

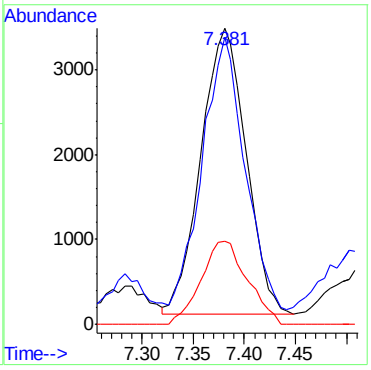


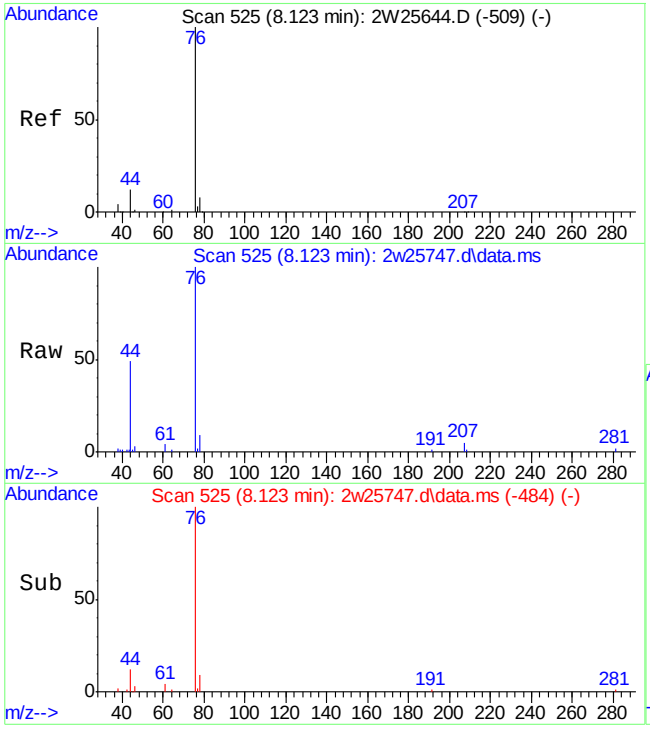


#20
PENTANE
Concen: 0.74 PPBV
RT: 7.381 min Scan# 403
Delta R.T. 0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 42 Resp: 10309

Ion	Ratio	Lower	Upper
42	100		
41	89.5	69.4	109.4
57	29.8	6.6	46.6

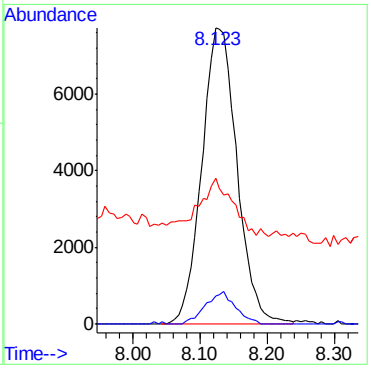


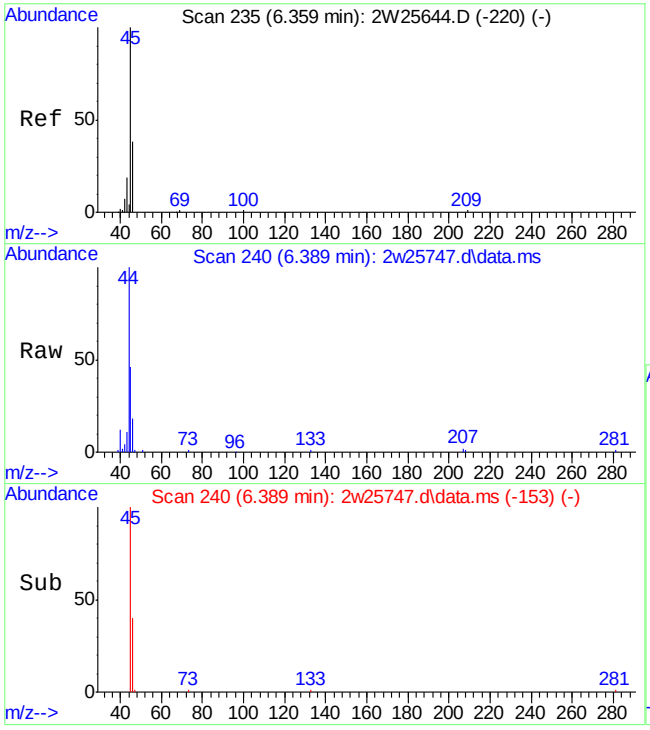


#25
CARBON DISULFIDE
Concen: 0.68 PPBV
RT: 8.123 min Scan# 525
Delta R.T. 0.000 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 76 Resp: 28110

Ion	Ratio	Lower	Upper
76	100		
78	9.3	0.0	29.3
44	20.2	0.0	31.8

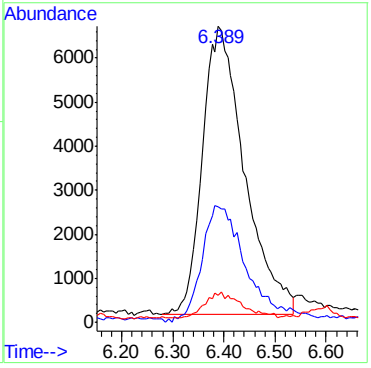


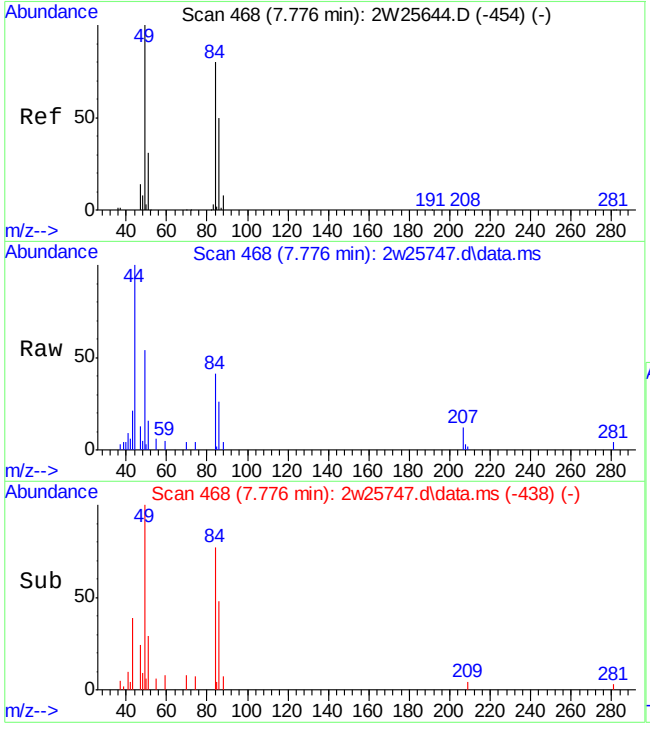


#26
ETHANOL
Concen: 7.76 PPBV
RT: 6.389 min Scan# 240
Delta R.T. 0.031 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 45 Resp: 37496

Ion	Ratio	Lower	Upper
45	100		
46	43.6	19.4	59.4
42	7.8	0.0	28.5

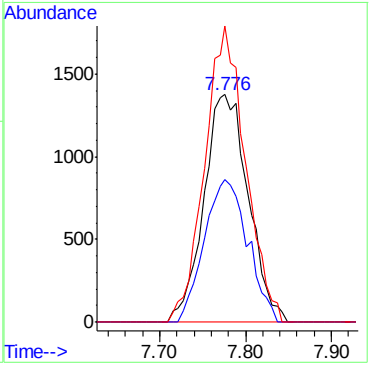


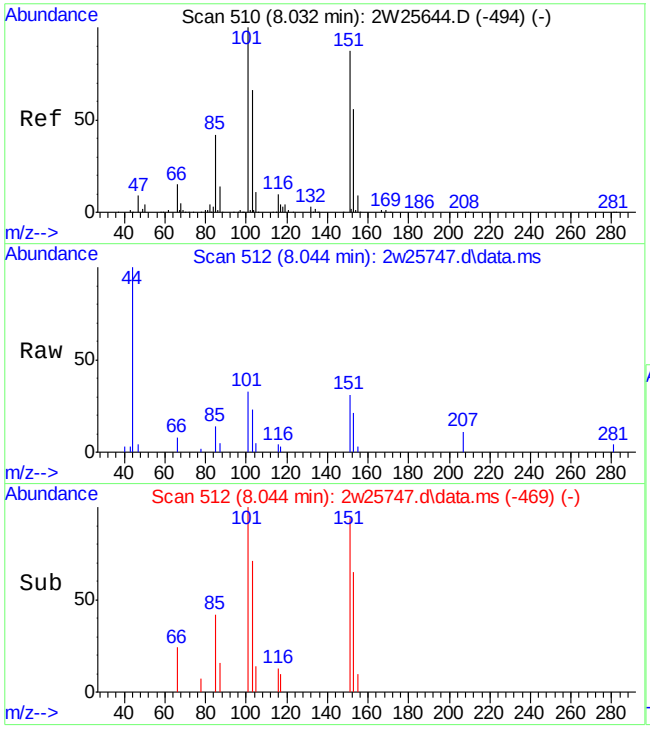


#28
METHYLENE CHLORIDE
Concen: 0.41 PPBV
RT: 7.776 min Scan# 468
Delta R.T. 0.000 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 84 Resp: 4944

Ion	Ratio	Lower	Upper
84	100		
86	61.1	44.9	84.9
49	119.5	0.0	327.0

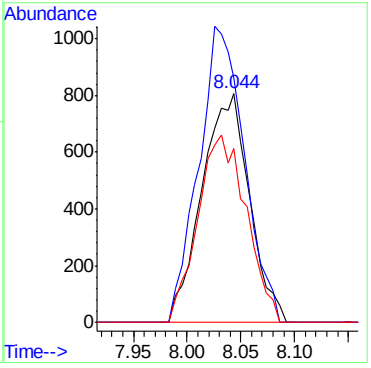


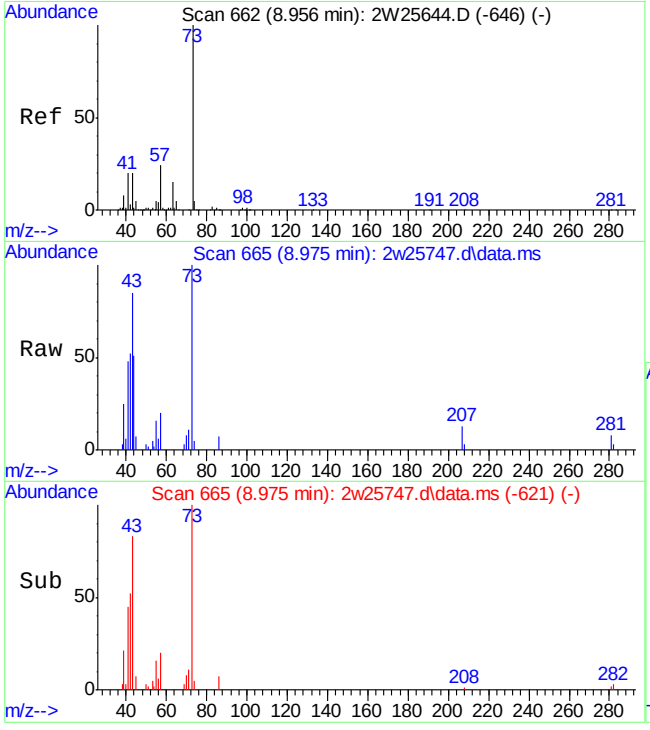


#30
FREON 113
Concen: 0.12 PPBV
RT: 8.044 min Scan# 512
Delta R.T. 0.012 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:151 Resp: 2479

Ion	Ratio	Lower	Upper
151	100		
101	124.6	96.5	136.5
103	83.5	56.4	96.4

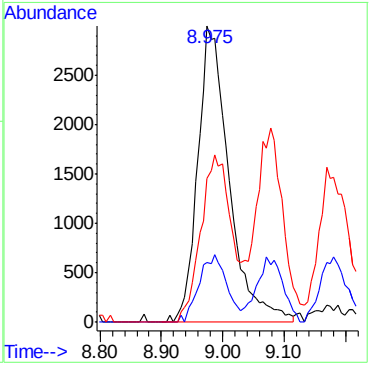


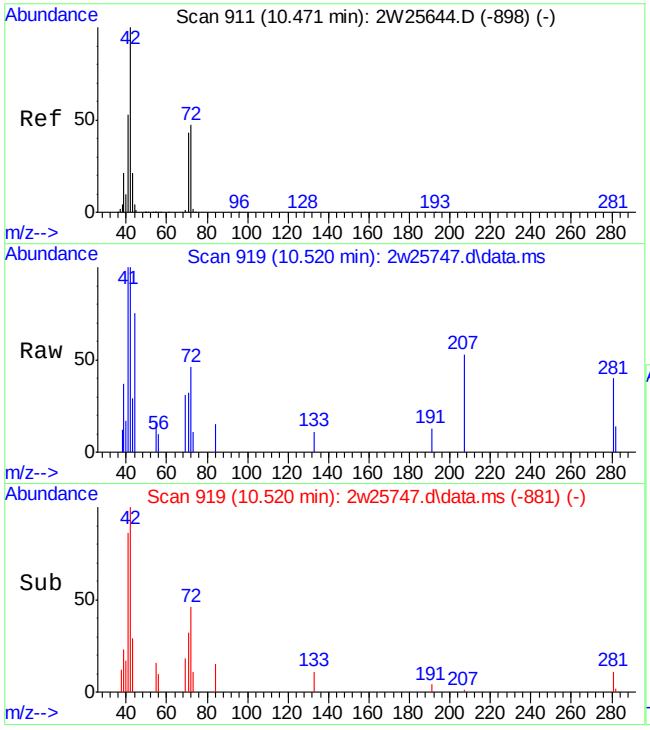


#33
METHYL TERTIARY BUTYL ETHER
Concen: 0.33 PPBV
RT: 8.975 min Scan# 665
Delta R.T. 0.018 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 73 Resp: 10622

Ion	Ratio	Lower	Upper
73	100		
57	20.2	3.3	43.3
41	54.3	1.5	41.5#

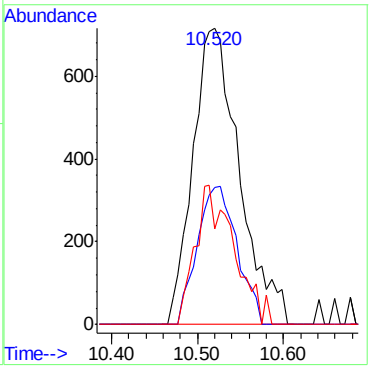


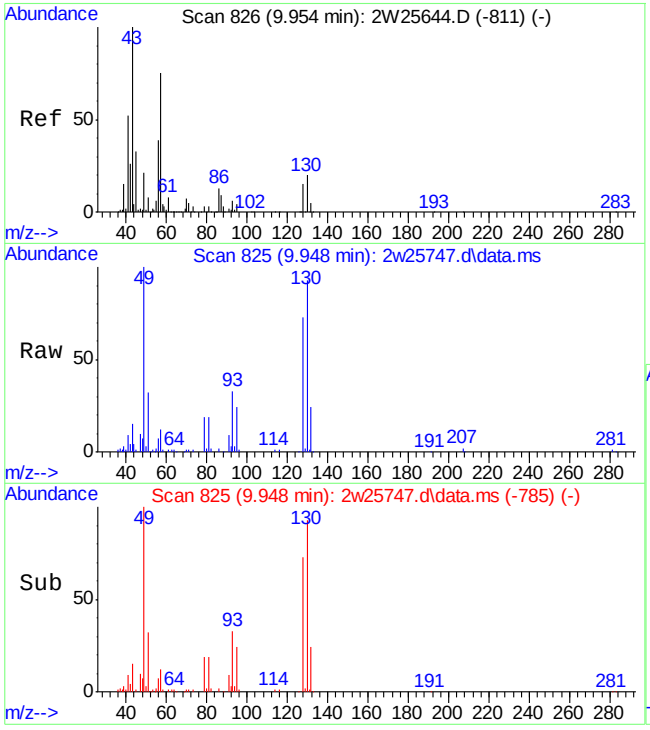


#34
TETRAHYDROFURAN
Concen: 0.21 PPBV
RT: 10.520 min Scan# 919
Delta R.T. 0.049 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 42 Resp: 2696

Ion	Ratio	Lower	Upper
42	100		
72	39.8	25.4	65.4
71	39.1	22.7	62.7

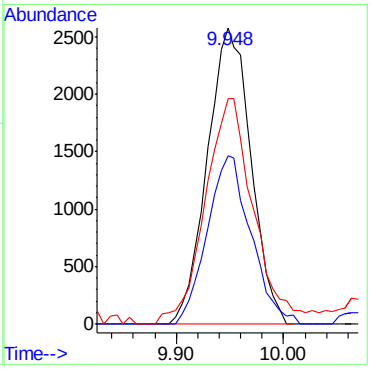


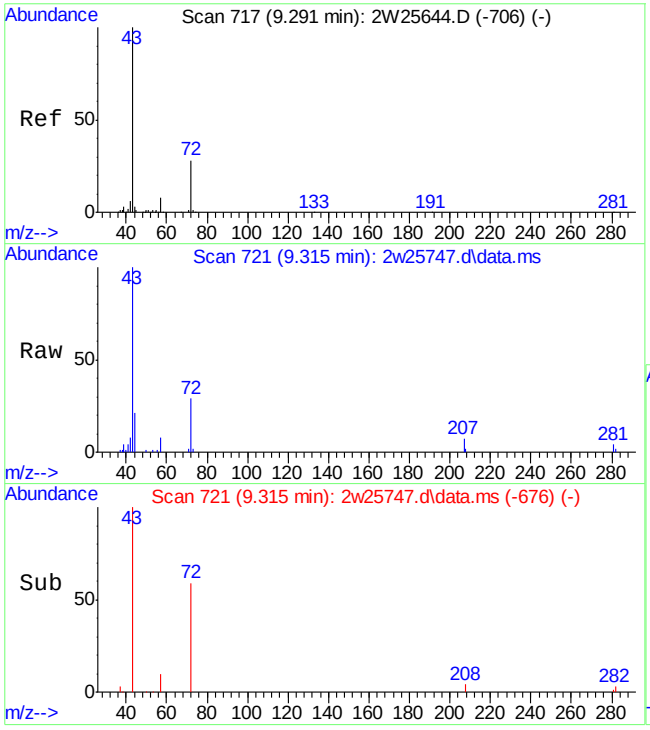


#35
HEXANE
Concen: 0.39 PPBV
RT: 9.948 min Scan# 825
Delta R.T. -0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 57 Resp: 7265

Ion	Ratio	Lower	Upper
57	100		
56	57.1	31.3	71.3
41	84.3	72.4	112.4

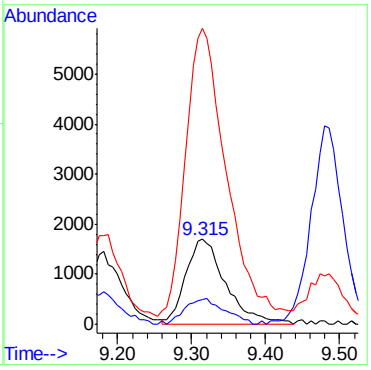


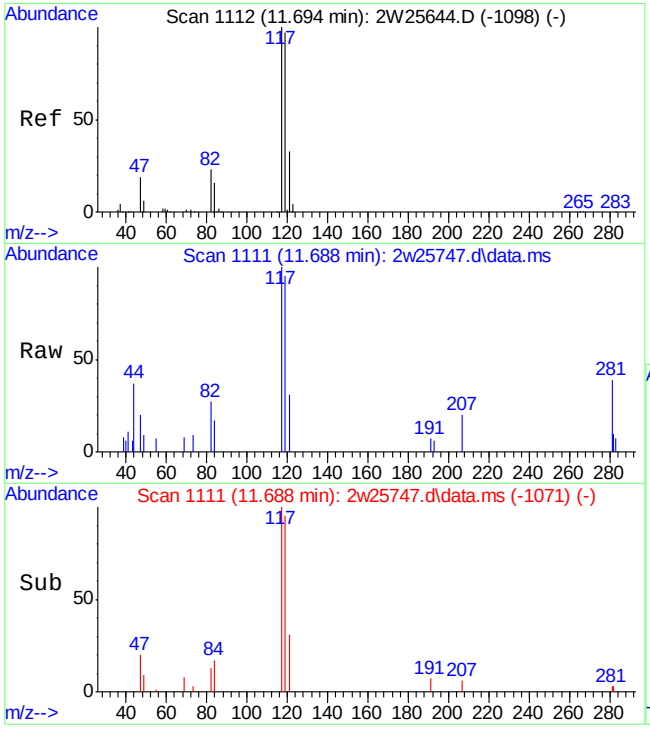


#38
METHYL ETHYL KETONE
Concen: 1.06 PPBV
RT: 9.315 min Scan# 721
Delta R.T. 0.024 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 72 Resp: 6340

Ion	Ratio	Lower	Upper
72	100		
57	28.5	9.4	49.4
43	348.2	343.3	383.3

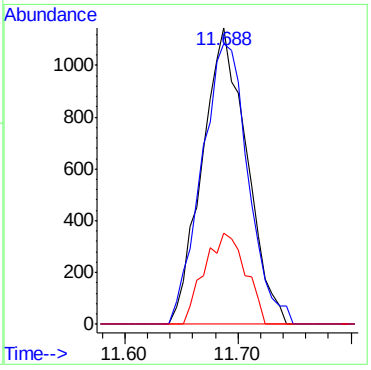


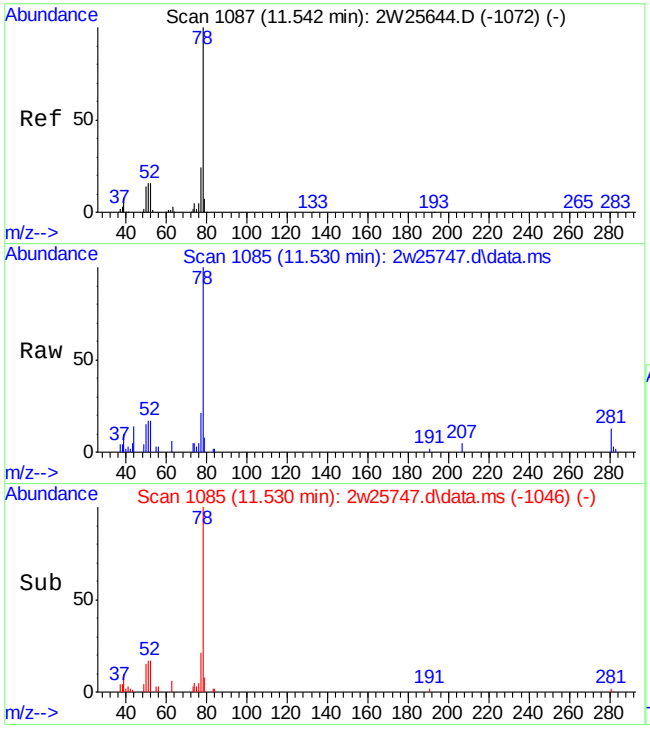


#44
CARBON TETRACHLORIDE
Concen: 0.12 PPBV
RT: 11.688 min Scan# 1111
Delta R.T. -0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:117 Resp: 3125

Ion	Ratio	Lower	Upper
117	100		
119	99.1	77.3	117.3
121	0.0	12.1	52.1#

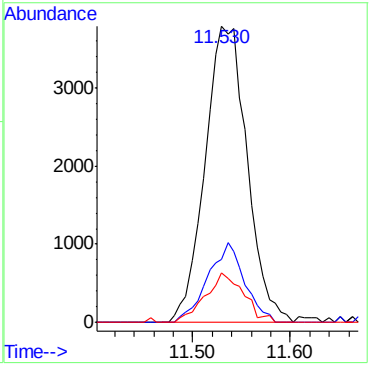


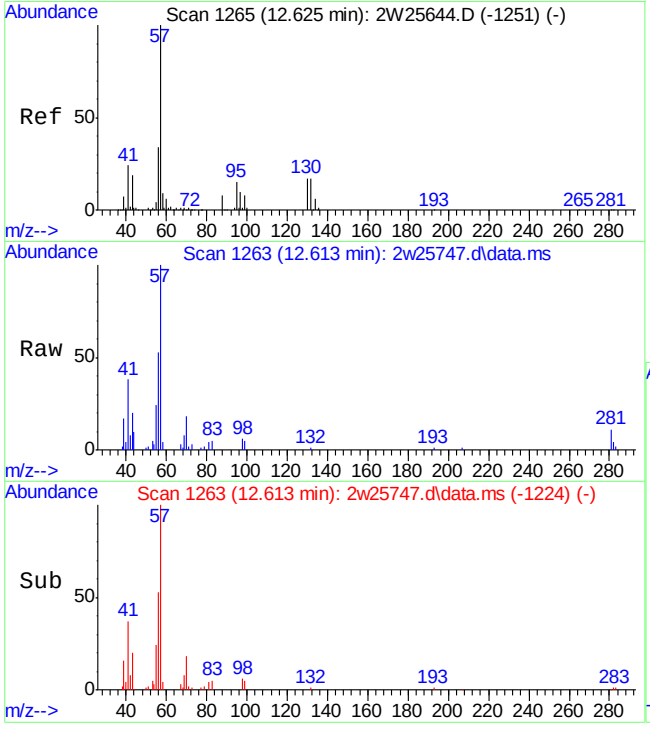


#47
BENZENE
Concen: 0.25 PPBV
RT: 11.530 min Scan# 1085
Delta R.T. -0.012 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 78 Resp: 11359

Ion	Ratio	Lower	Upper
78	100		
77	23.4	3.8	43.8
52	15.1	0.0	35.8

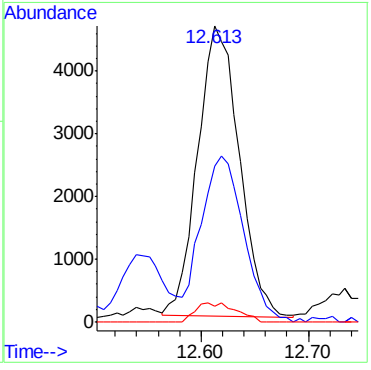


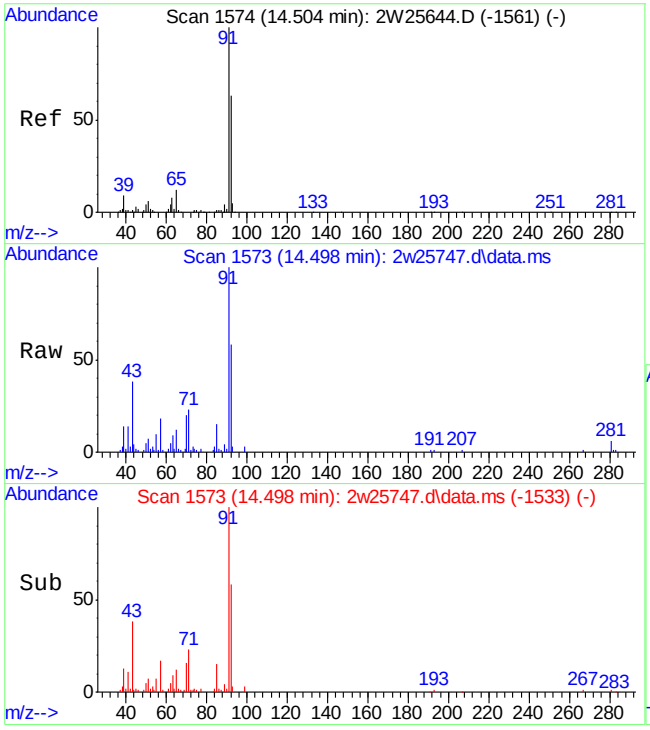


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.23 PPBV
RT: 12.613 min Scan# 1263
Delta R.T. -0.012 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 57 Resp: 12451

Ion	Ratio	Lower	Upper
57	100		
56	58.4	13.2	53.2#
99	0.0	0.0	28.8

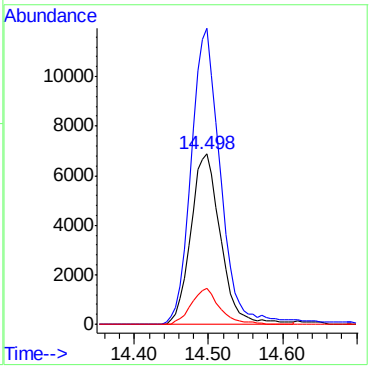


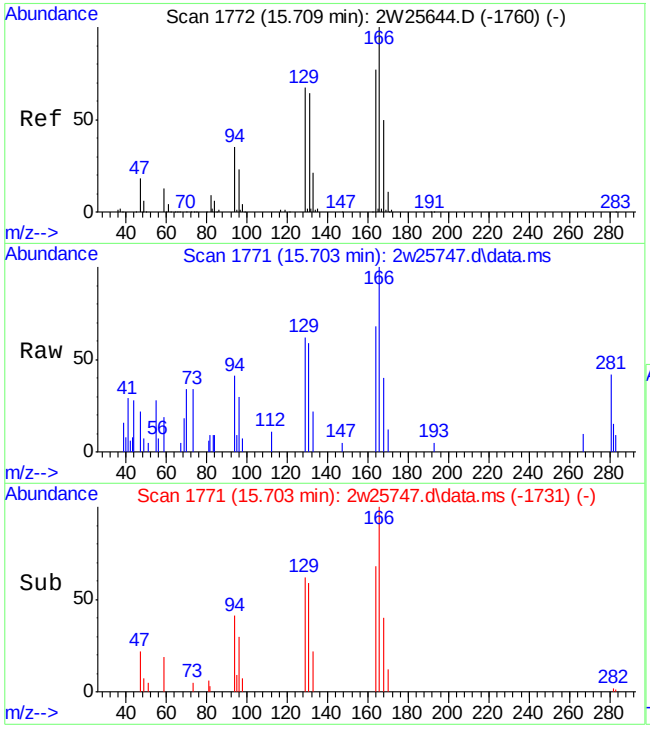


#60
TOLUENE
Concen: 0.65 PPBV
RT: 14.498 min Scan# 1573
Delta R.T. -0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 92 Resp: 18879

Ion	Ratio	Lower	Upper
92	100		
91	169.6	140.7	180.7
65	20.3	0.0	38.6

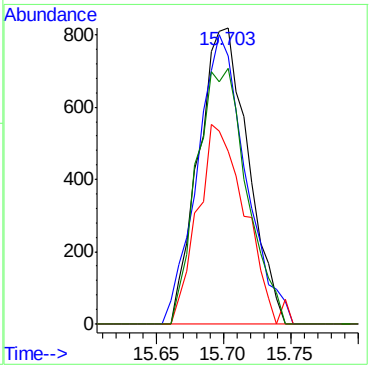


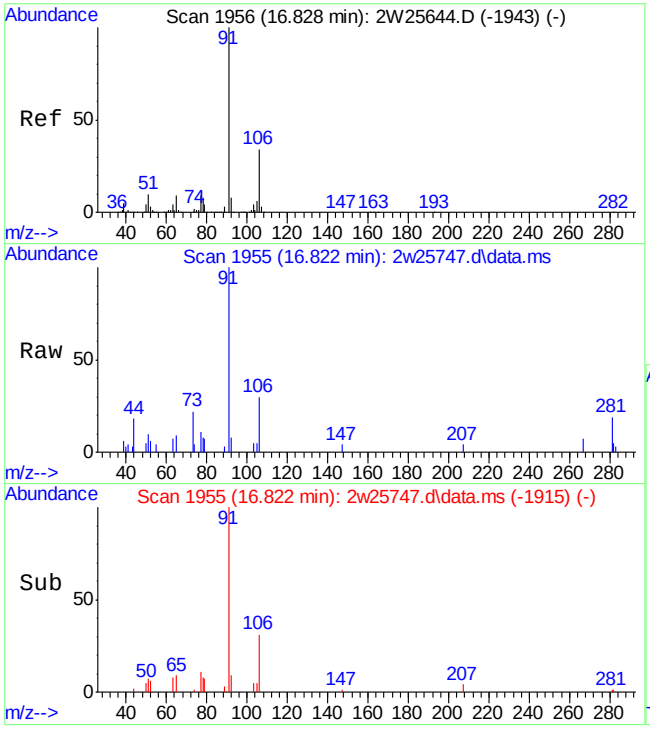


#65
TETRACHLOROETHYLENE
Concen: 0.11 PPBV
RT: 15.703 min Scan# 1771
Delta R.T. -0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:164 Resp: 2096

Ion	Ratio	Lower	Upper
164	100		
129	95.6	65.6	105.6
168	64.7	43.4	83.4
131	87.4	62.3	102.3

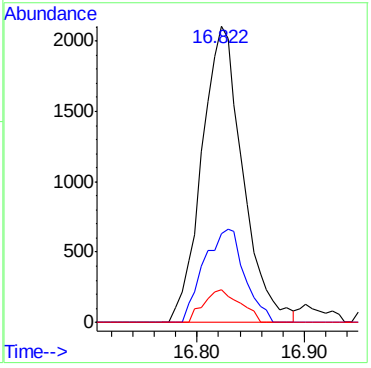


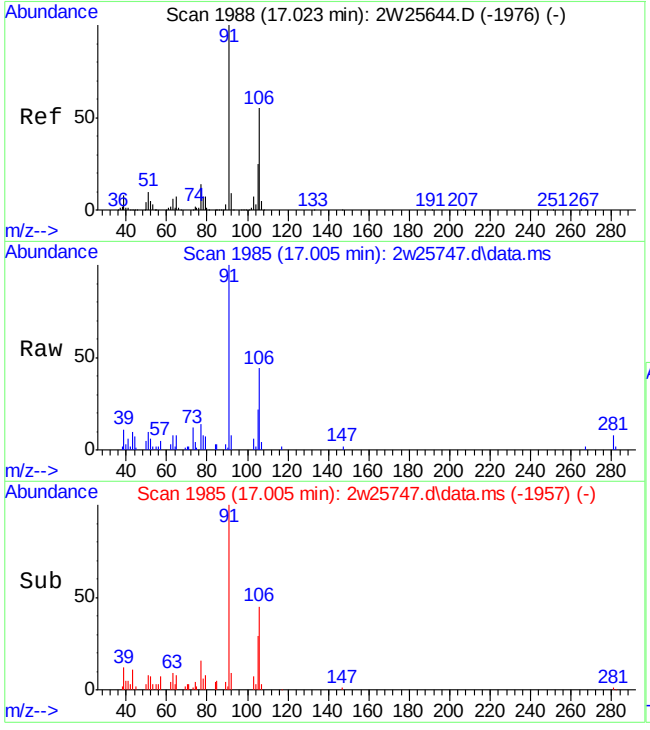


#71
ETHYLBENZENE
Concen: 0.11 PPBV
RT: 16.822 min Scan# 1955
Delta R.T. -0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion: 91 Resp: 5580

Ion	Ratio	Lower	Upper
91	100		
106	31.3	13.0	53.0
77	0.0	0.0	28.8

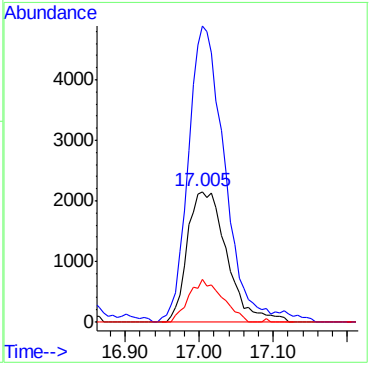


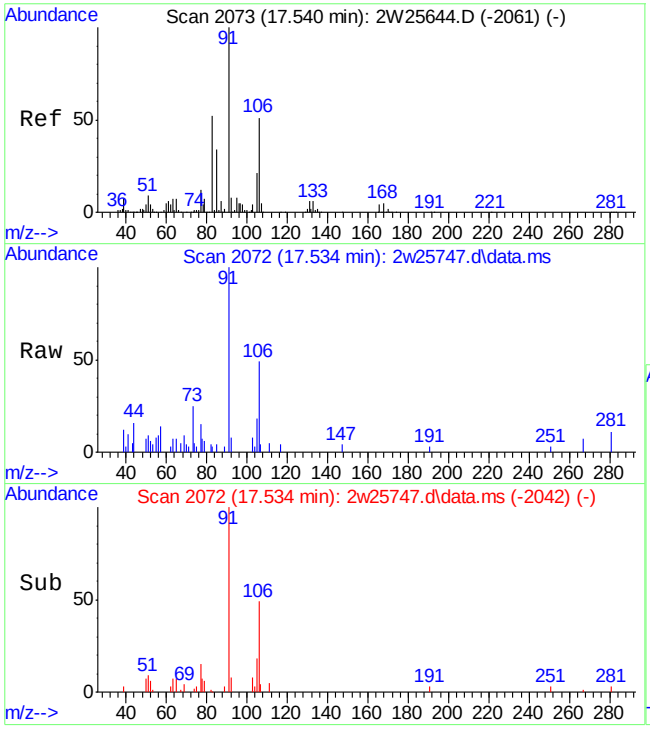


#72
m,p-XYLENE
Concen: 0.41 PPBV
RT: 17.005 min Scan# 1985
Delta R.T. -0.018 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:106 Resp: 7865

Ion	Ratio	Lower	Upper
106	100		
91	226.8	147.4	221.2#
77	32.5	20.5	30.7#

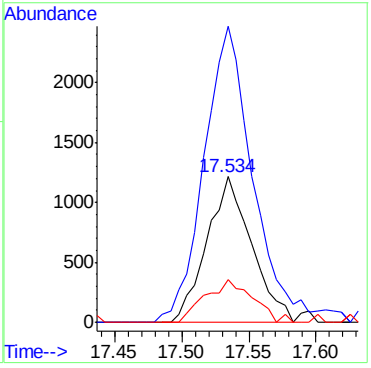


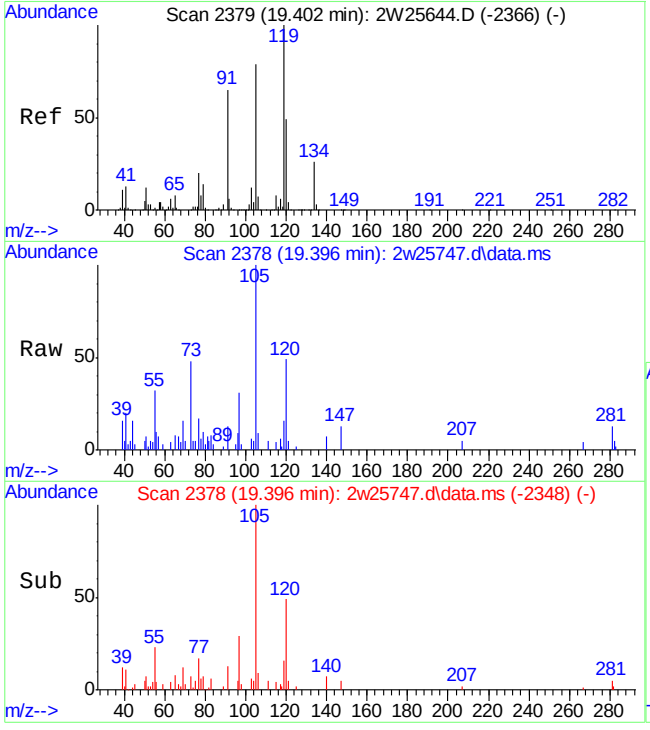


#73
o-XYLENE
Concen: 0.16 PPBV
RT: 17.534 min Scan# 2072
Delta R.T. -0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:106 Resp: 2803

Ion	Ratio	Lower	Upper
106	100		
91	222.0	179.7	219.7#
77	0.0	5.4	45.4#

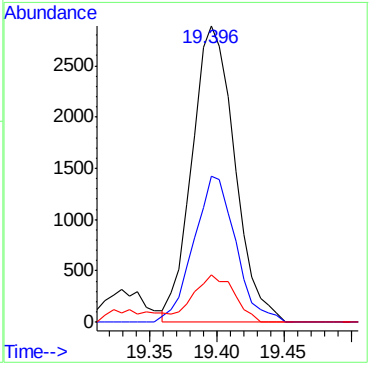


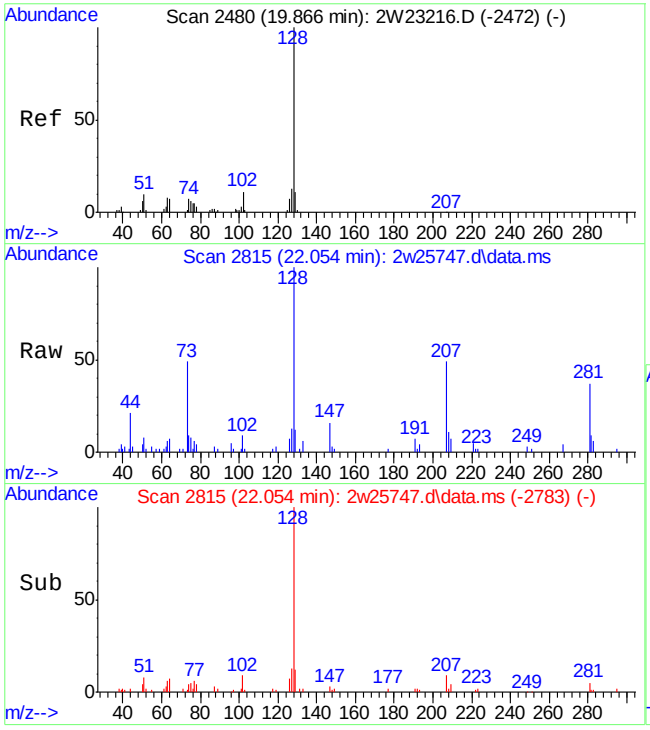


#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.28 PPBV
RT: 19.396 min Scan# 2378
Delta R.T. -0.006 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:105 Resp: 6379

Ion	Ratio	Lower	Upper
105	100		
120	48.3	41.7	81.7
119	0.0	106.1	146.1#

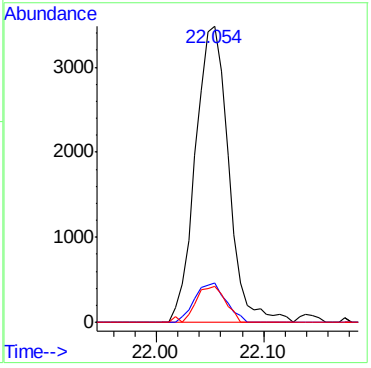




#96
NAPHTHALENE
Concen: 1.01 PPBV
RT: 22.054 min Scan# 2815
Delta R.T. -0.046 min
Lab File: 2w25747.d
Acq: 29 Sep 2009 8:32 pm

Tgt Ion:128 Resp: 7452

Ion	Ratio	Lower	Upper
128	100		
127	0.0	0.0	20.0
129	0.0	0.0	20.0



6.1.4

6

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25730.D Vial: 8
Acq On : 29 Sep 2009 4:56 am Operator: YOUMINH
Sample : JA28238-5 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:49:11 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

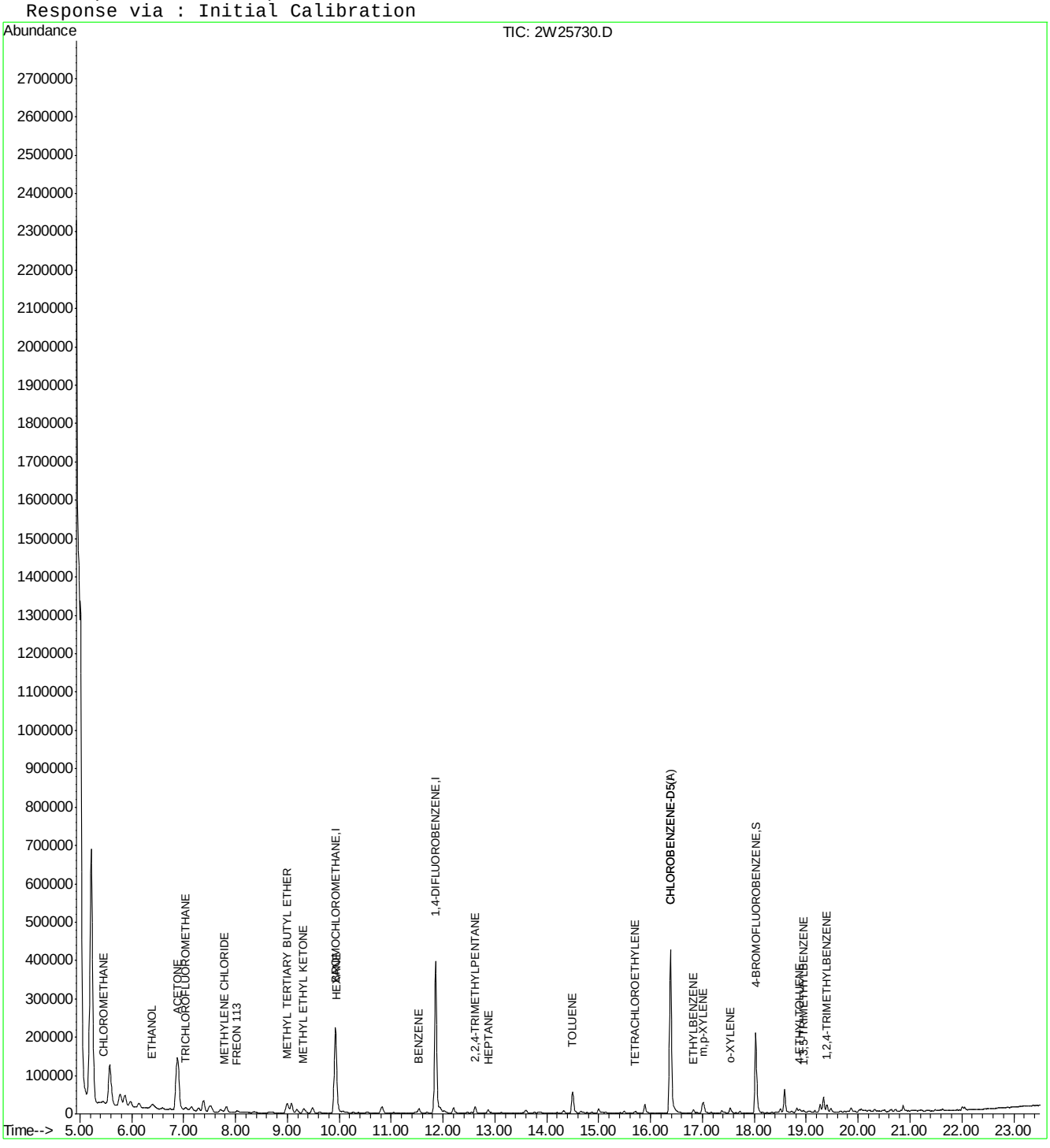
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	101653	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	500378	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	222063	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	222174	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.03	95	105926	4.63	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 92.60%			
Target Compounds						Qvalue
9) CHLOROMETHANE	5.44	52	2792	0.59	PPBV	100
17) TRICHLOROFLUOROMETHANE	7.05	101	8456	0.27	PPBV #	95
19) ACETONE	6.87	58	75816	10.88	PPBV #	78
26) ETHANOL	6.40	45	37921	7.98	PPBV	96
28) METHYLENE CHLORIDE	7.79	84	2126	0.18	PPBV	92
30) FREON 113	8.03	151	2627	0.13	PPBV	89
33) METHYL TERTIARY BUTYL ETHE	8.98	73	17993	0.57	PPBV #	66
35) HEXANE	9.95	57	12816	0.70	PPBV	90
38) METHYL ETHYL KETONE	9.32	72	7261	1.24	PPBV #	90
47) BENZENE	11.54	78	16660	0.36	PPBV	100
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	19374	0.35	PPBV	89
56) HEPTANE	12.87	43	5067	0.23	PPBV	93
60) TOLUENE	14.50	92	35104	1.17	PPBV	95
65) TETRACHLOROETHYLENE	15.70	164	1383	0.07	PPBV #	69
71) ETHYLBENZENE	16.83	91	11534	0.22	PPBV #	89
72) m,p-XYLENE	17.00	106	15969	0.80	PPBV	94
73) o-XYLENE	17.53	106	5321	0.28	PPBV #	87
82) 4-ETHYLTOLUENE	18.86	105	3650	0.11	PPBV #	47
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	3924	0.14	PPBV #	89
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	12700	0.53	PPBV #	28

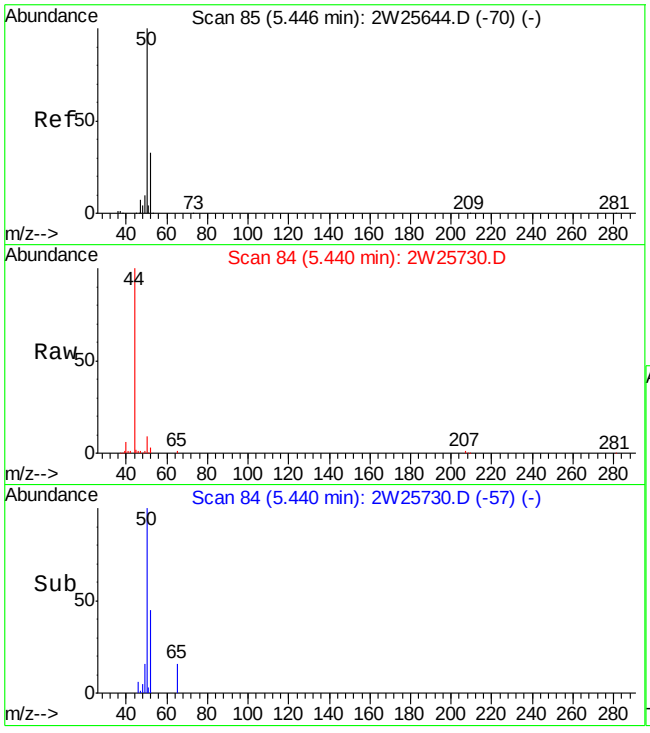
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25730.D Vial: 8
Acq On : 29 Sep 2009 4:56 am Operator: YOUMINH
Sample : JA28238-5 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:46 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

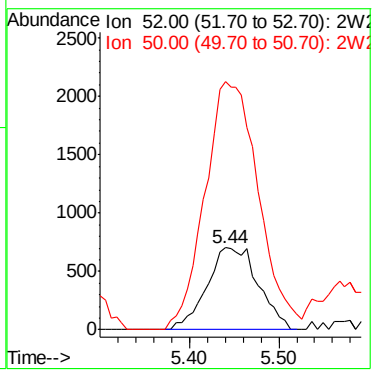


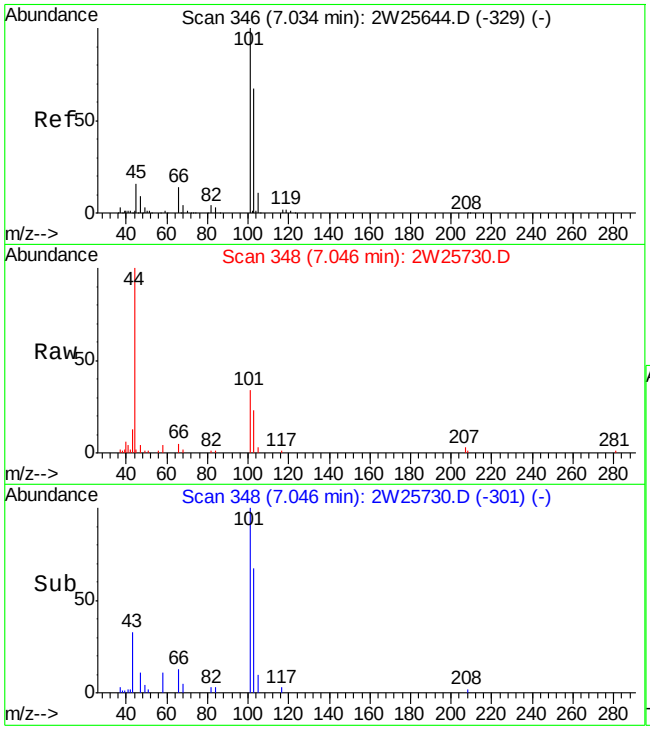


#9
CHLOROMETHANE
Concen: 0.59 PPBV
RT: 5.44 min Scan# 84
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 52 Resp: 2792

Ion	Ratio	Lower	Upper
52	100		
50	292.2	272.1	312.1

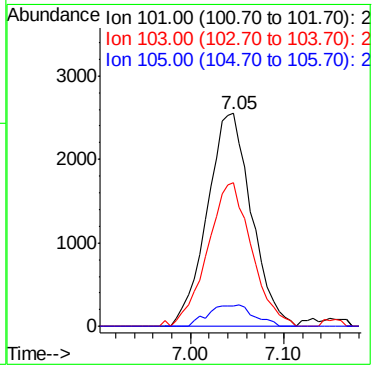


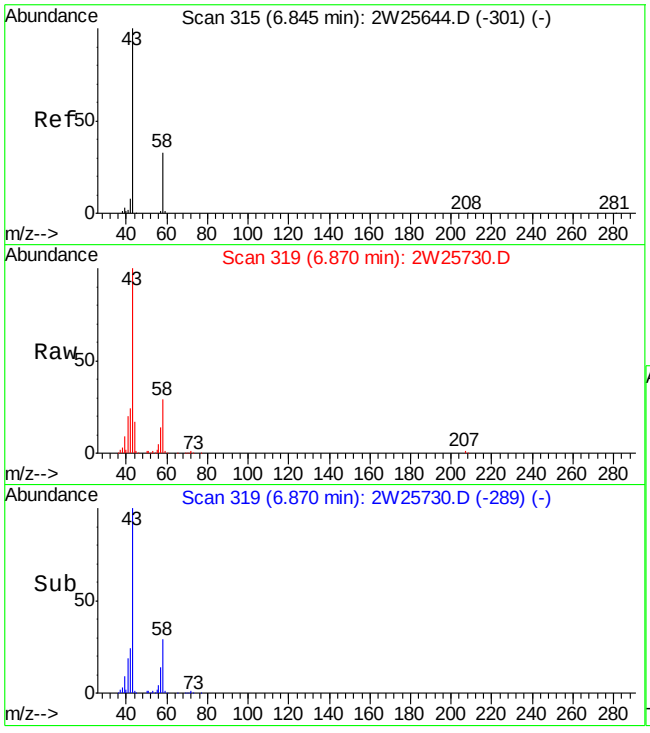


#17
TRICHLOROFLUOROMETHANE
Concen: 0.27 PPBV
RT: 7.05 min Scan# 348
Delta R.T. 0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:101 Resp: 8456

Ion	Ratio	Lower	Upper
101	100		
103	67.2	46.0	86.0
105	0.0	0.0	30.8

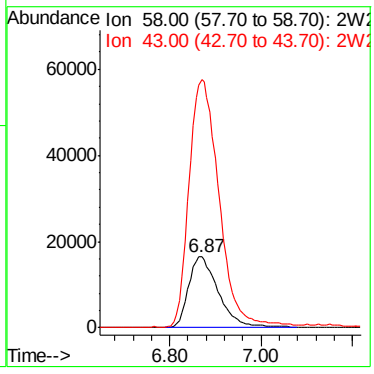


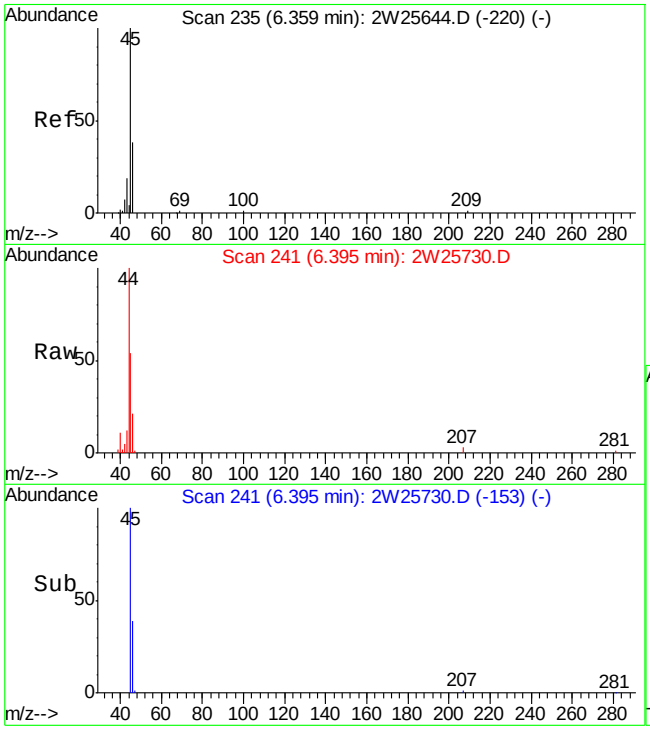


#19
ACETONE
Concen: 10.88 PPBV
RT: 6.87 min Scan# 319
Delta R.T. 0.02 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 58 Resp: 75816

Ion	Ratio	Lower	Upper
58	100		
43	348.4	284.9	324.9#

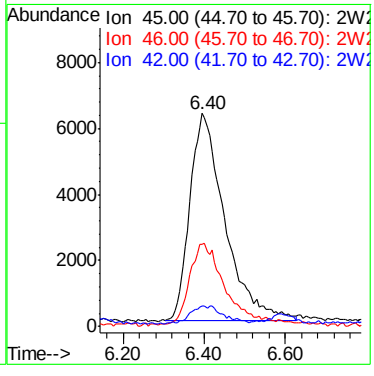


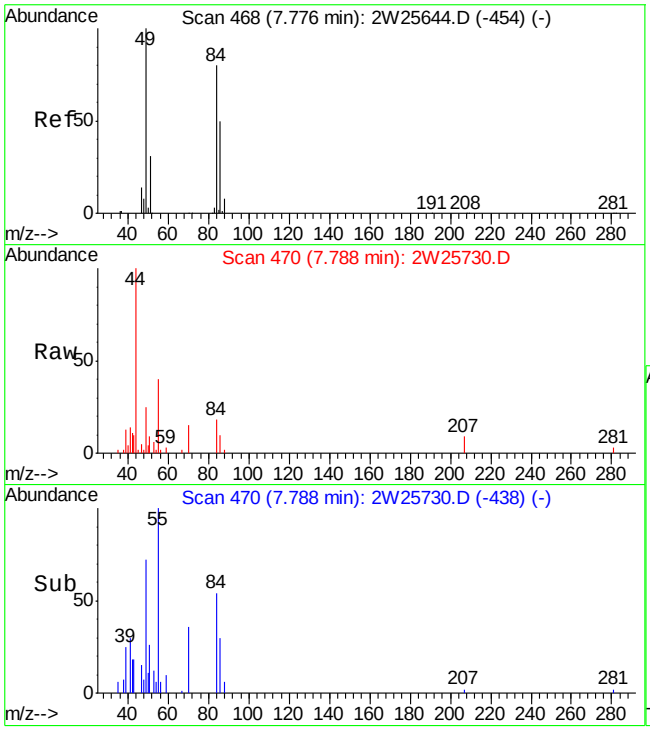


#26
ETHANOL
Concen: 7.98 PPBV
RT: 6.40 min Scan# 241
Delta R.T. 0.04 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 45 Resp: 37921

Ion	Ratio	Lower	Upper
45	100		
46	37.8	19.4	59.4
42	4.1	0.0	28.5

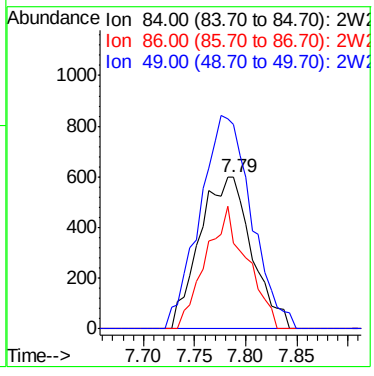


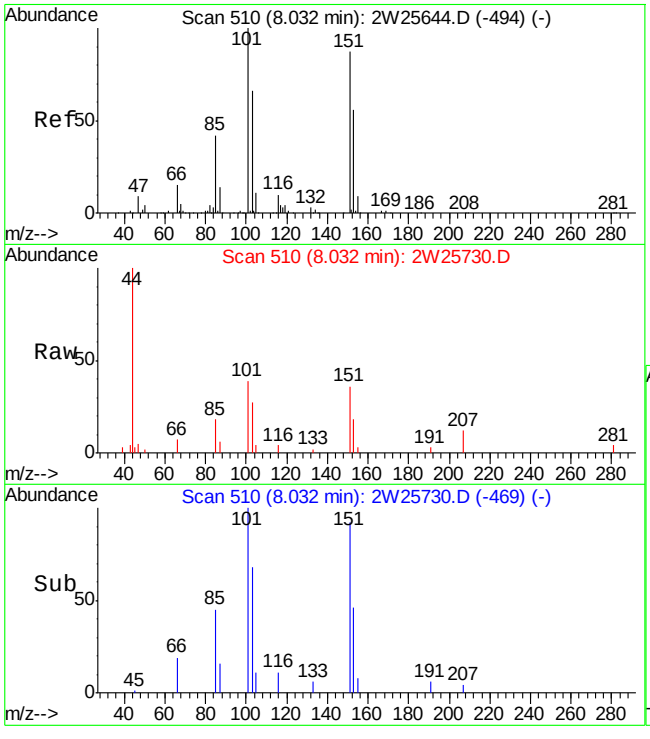


#28
METHYLENE CHLORIDE
Concen: 0.18 PPBV
RT: 7.79 min Scan# 470
Delta R.T. 0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 84 Resp: 2126

Ion	Ratio	Lower	Upper
84	100		
86	63.5	44.9	84.9
49	139.5	0.0	327.0

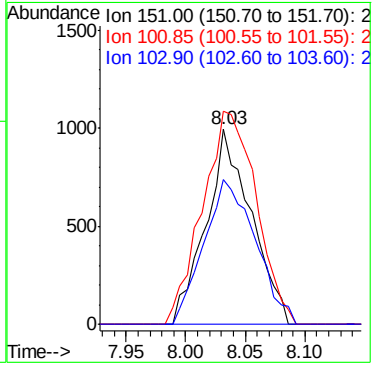


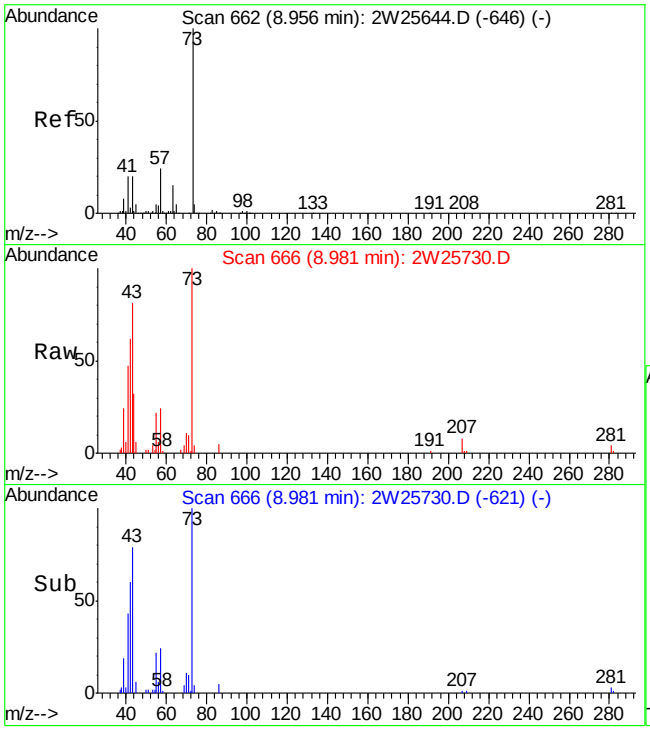


#30
FREON 113
Concen: 0.13 PPBV
RT: 8.03 min Scan# 510
Delta R.T. 0.00 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:151 Resp: 2627

Ion	Ratio	Lower	Upper
151	100		
101	130.0	96.5	136.5
103	84.6	56.4	96.4

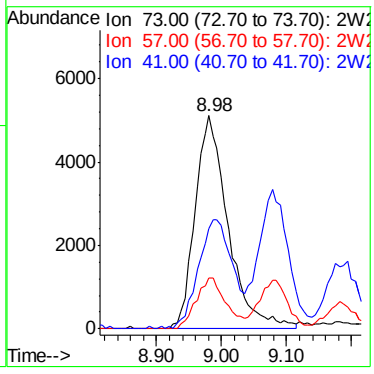


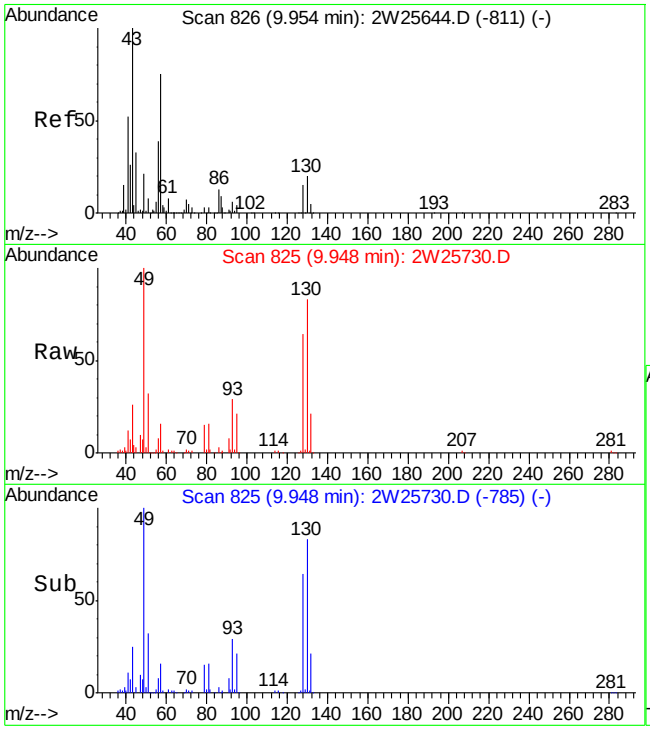


#33
METHYL TERTIARY BUTYL ETHER
Concen: 0.57 PPBV
RT: 8.98 min Scan# 666
Delta R.T. 0.02 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 73 Resp: 17993

Ion	Ratio	Lower	Upper
73	100		
57	21.6	3.3	43.3
41	53.2	1.5	41.5#

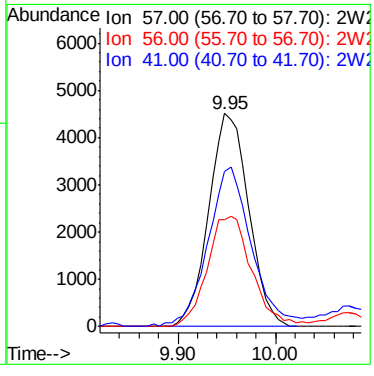


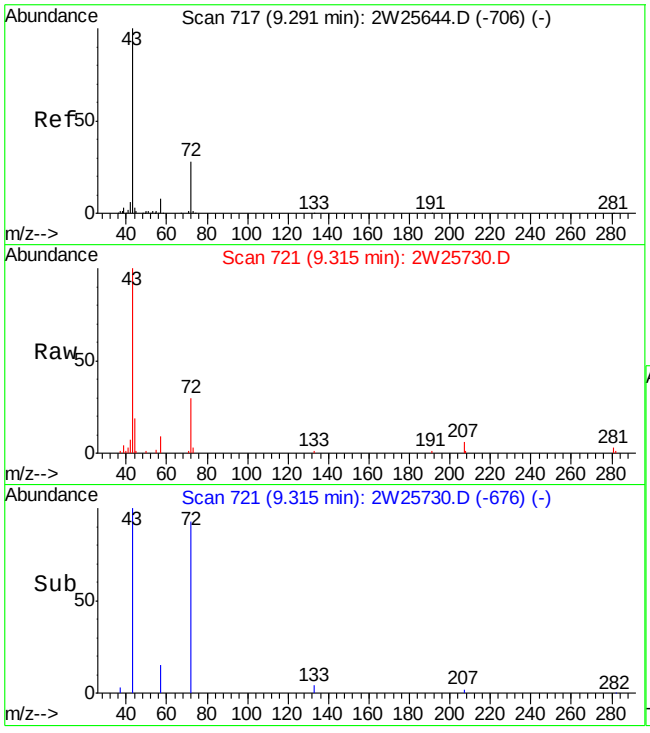


#35
HEXANE
Concen: 0.70 PPBV
RT: 9.95 min Scan# 825
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 57 Resp: 12816

Ion	Ratio	Lower	Upper
57	100		
56	57.7	31.3	71.3
41	81.9	72.4	112.4

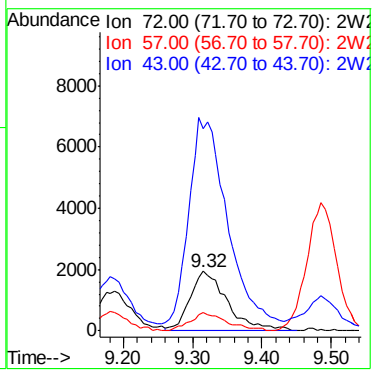


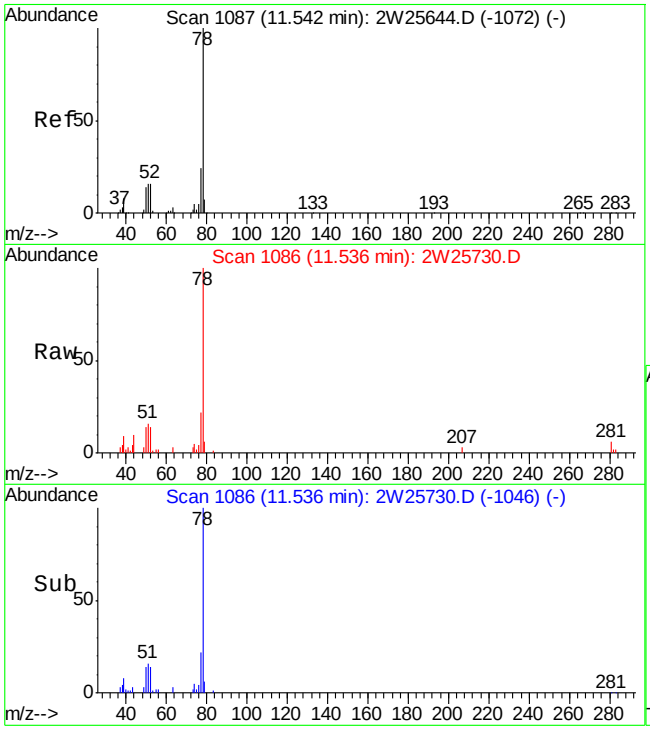


#38
METHYL ETHYL KETONE
Concen: 1.24 PPBV
RT: 9.32 min Scan# 721
Delta R.T. 0.02 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 72 Resp: 7261

Ion	Ratio	Lower	Upper
72	100		
57	30.4	9.4	49.4
43	339.0	343.3	383.3#

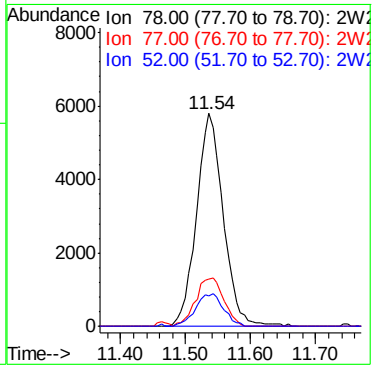


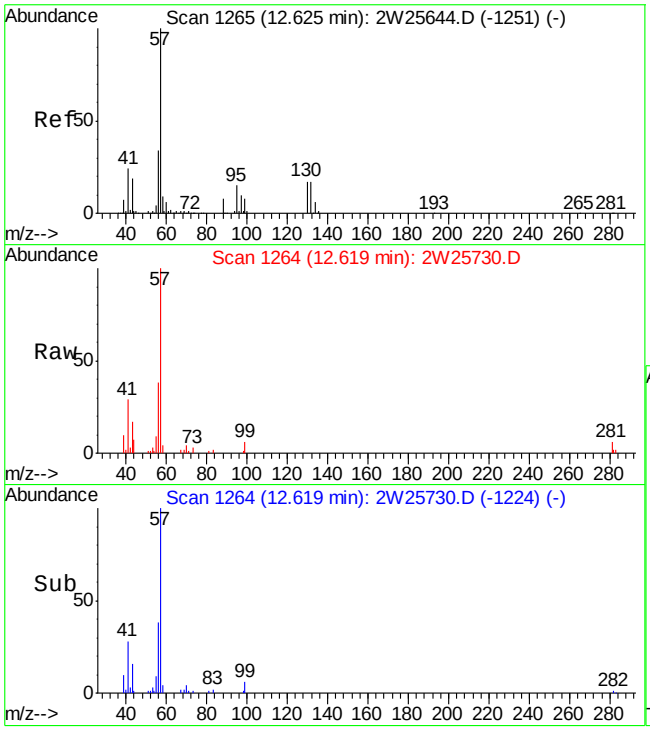


#47
BENZENE
Concen: 0.36 PPBV
RT: 11.54 min Scan# 1086
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 78 Resp: 16660

Ion	Ratio	Lower	Upper
78	100		
77	23.9	3.8	43.8
52	16.1	0.0	35.8

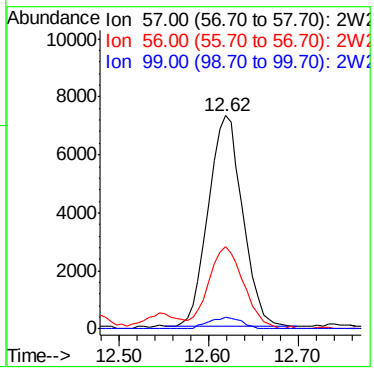


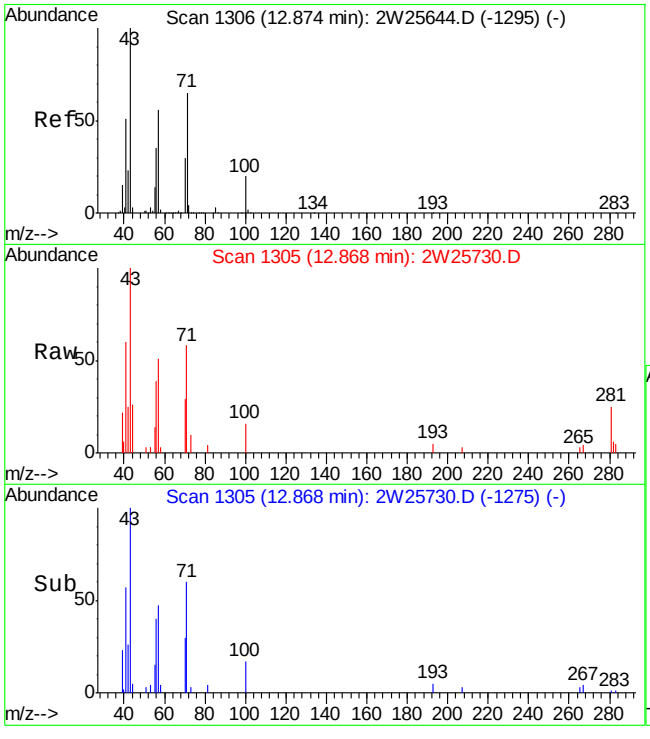


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.35 PPBV
RT: 12.62 min Scan# 1264
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 57 Resp: 19374

Ion	Ratio	Lower	Upper
57	100		
56	39.8	13.2	53.2
99	5.3	0.0	28.8

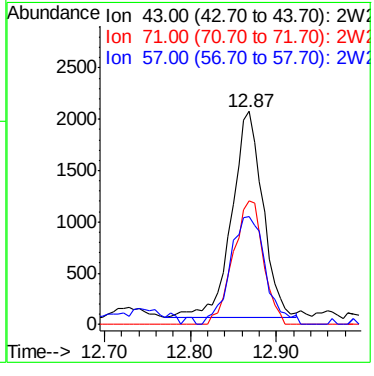


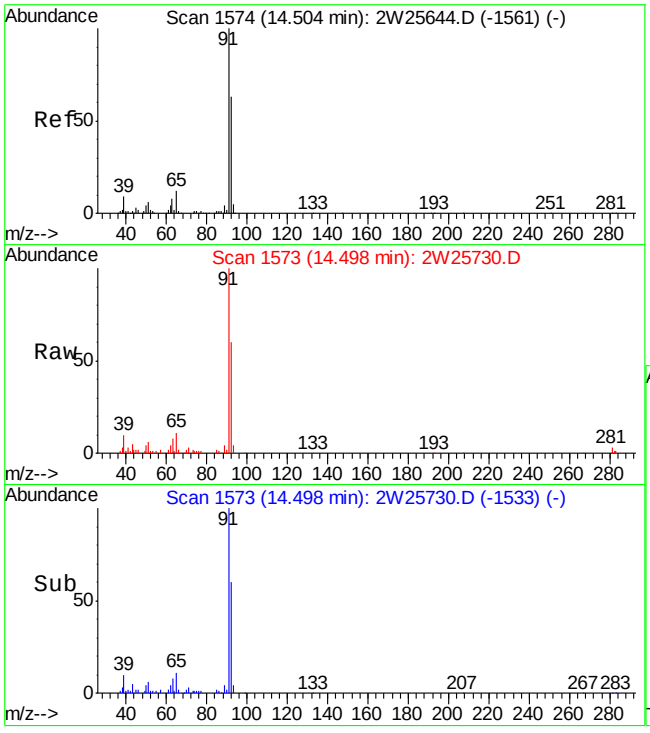


#56
HEPTANE
Concen: 0.23 PPBV
RT: 12.87 min Scan# 1305
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 43 Resp: 5067

Ion	Ratio	Lower	Upper
43	100		
71	58.2	44.0	84.0
57	59.7	35.5	75.5

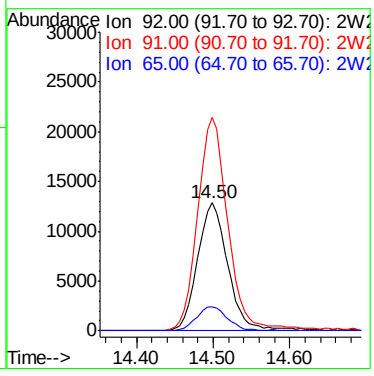


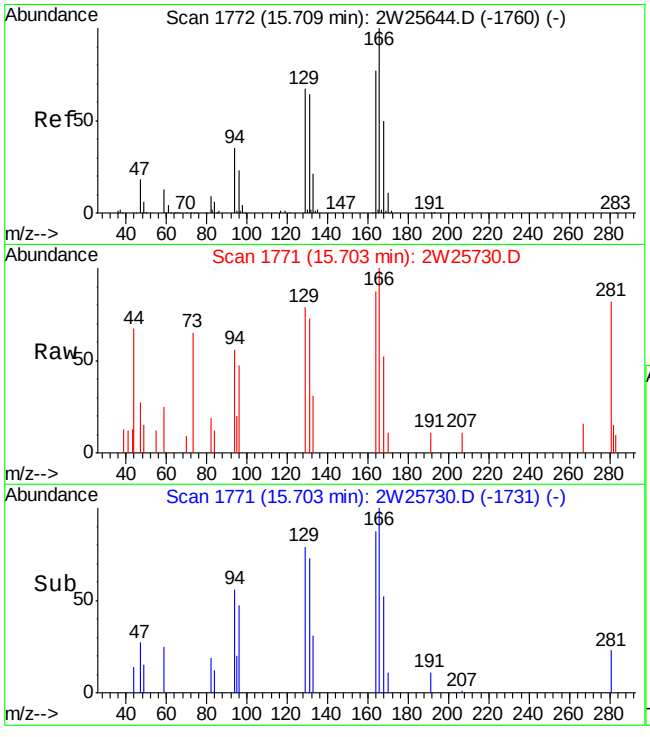


#60
TOLUENE
Concen: 1.17 PPBV
RT: 14.50 min Scan# 1573
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 92 Resp: 35104

Ion	Ratio	Lower	Upper
92	100		
91	167.8	140.7	180.7
65	19.3	0.0	38.6

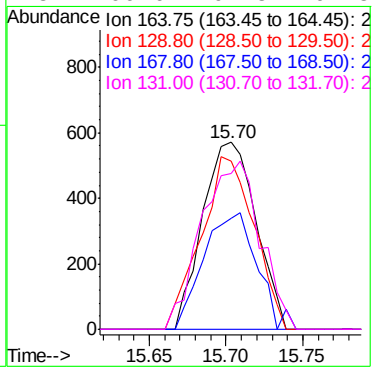


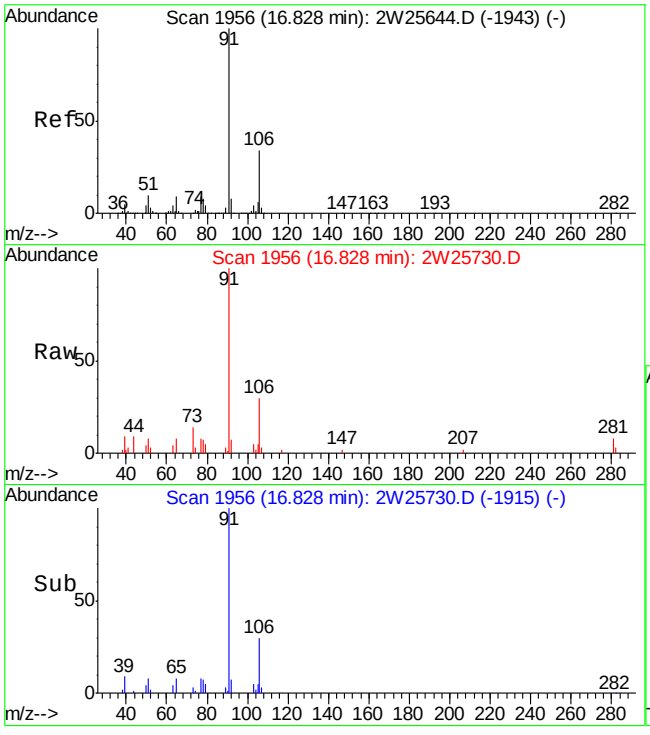


#65
TETRACHLOROETHYLENE
Concen: 0.07 PPBV
RT: 15.70 min Scan# 1771
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:164 Resp: 1383

Ion	Ratio	Lower	Upper
164	100		
129	91.8	65.6	105.6
168	0.0	43.4	83.4#
131	99.0	62.3	102.3

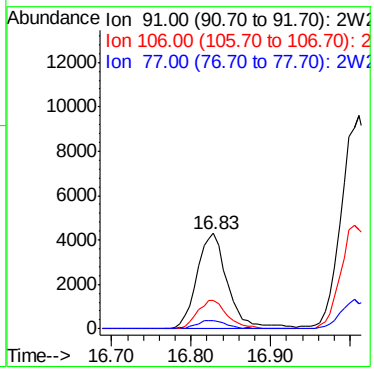


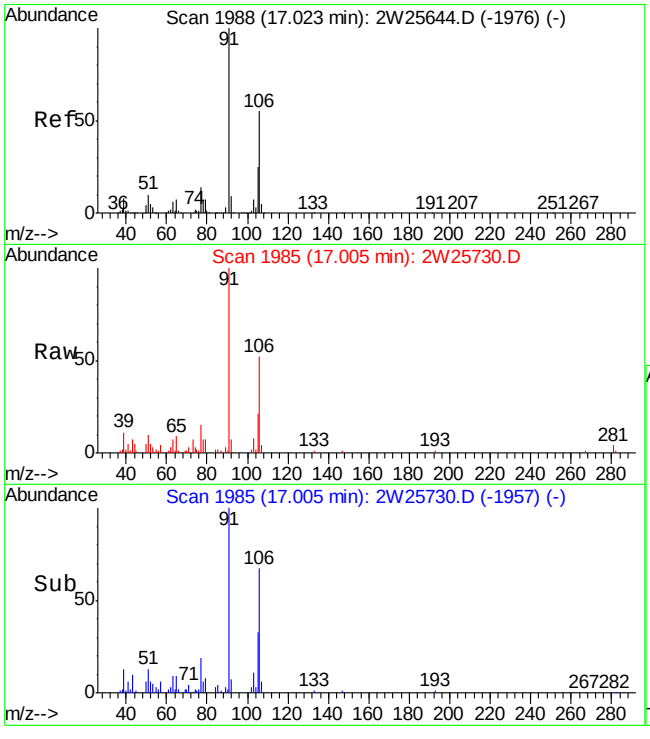


#71
ETHYLBENZENE
Concen: 0.22 PPBV
RT: 16.83 min Scan# 1956
Delta R.T. 0.00 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion: 91 Resp: 11534

Ion	Ratio	Lower	Upper
91	100		
106	28.6	13.0	53.0
77	0.0	0.0	28.8

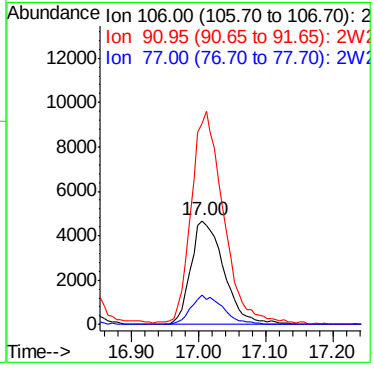


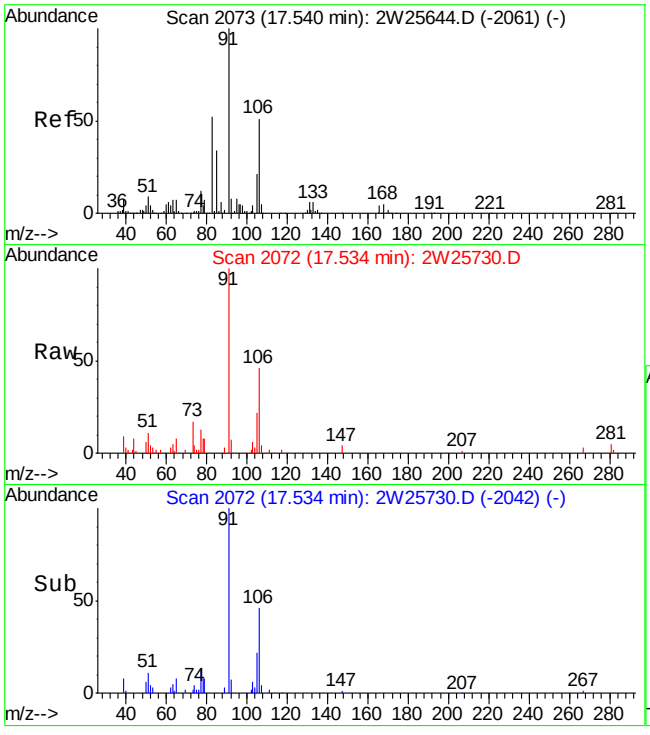


#72
m,p-XYLENE
Concen: 0.80 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.02 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:106 Resp: 15969

Ion	Ratio	Lower	Upper
106	100		
91	193.6	147.4	221.2
77	28.4	20.5	30.7

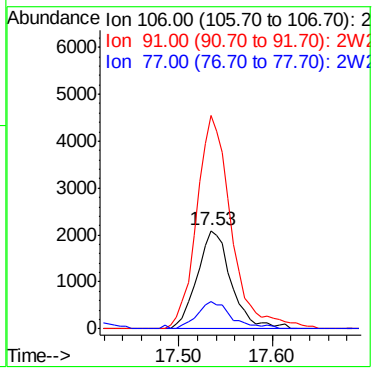


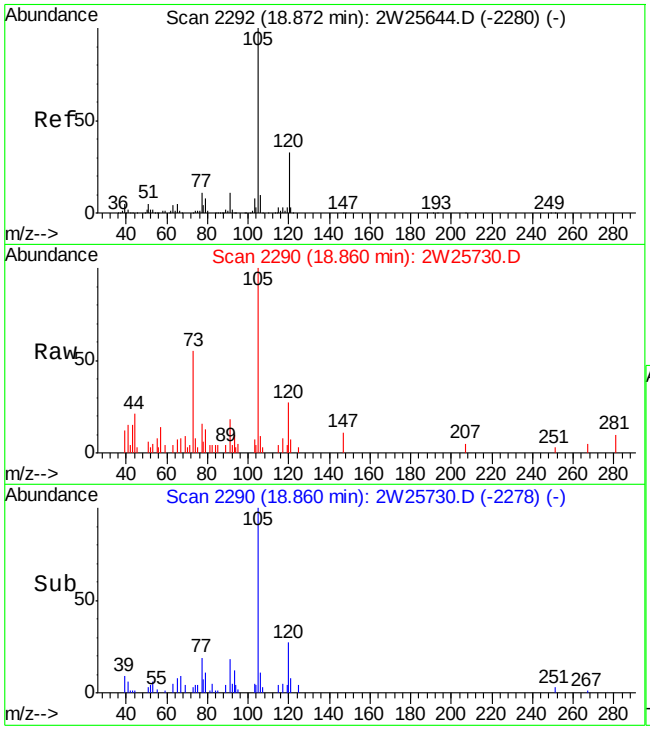


#73
o-XYLENE
Concen: 0.28 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:106 Resp: 5321

Ion	Ratio	Lower	Upper
106	100		
91	221.7	179.7	219.7#
77	28.0	5.4	45.4

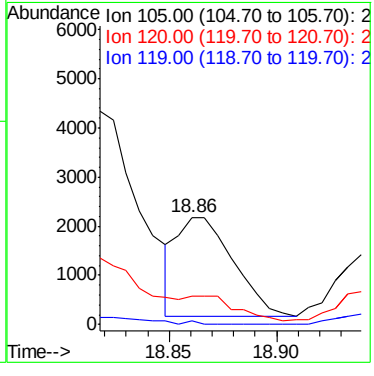


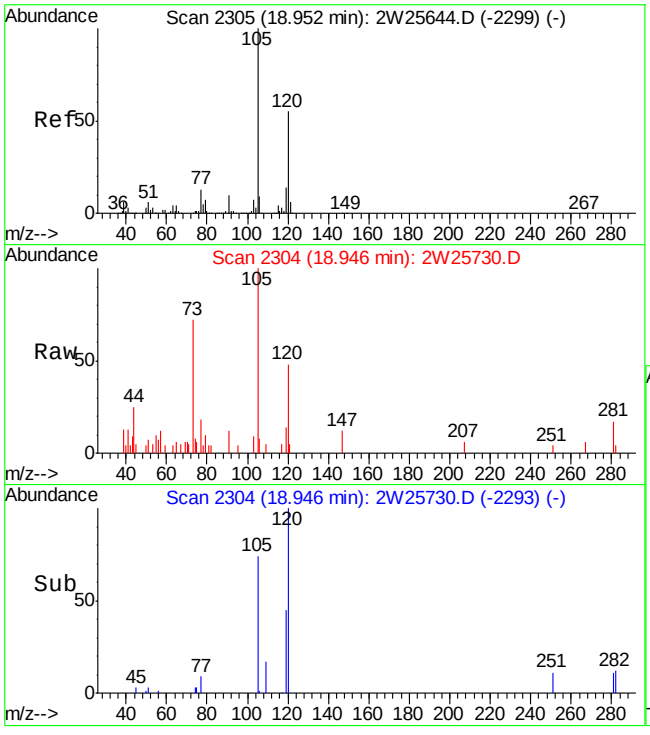


#82
4-ETHYLTOLUENE
Concen: 0.11 PPBV
RT: 18.86 min Scan# 2290
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:105 Resp: 3650

Ion	Ratio	Lower	Upper
105	100		
120	0.0	11.2	51.2#
119	0.0	0.0	22.5

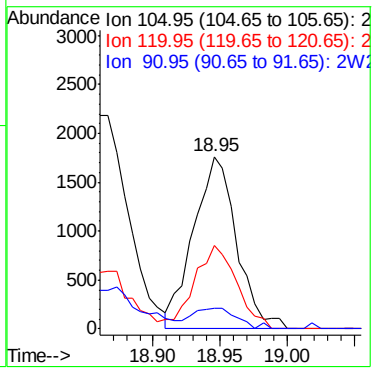


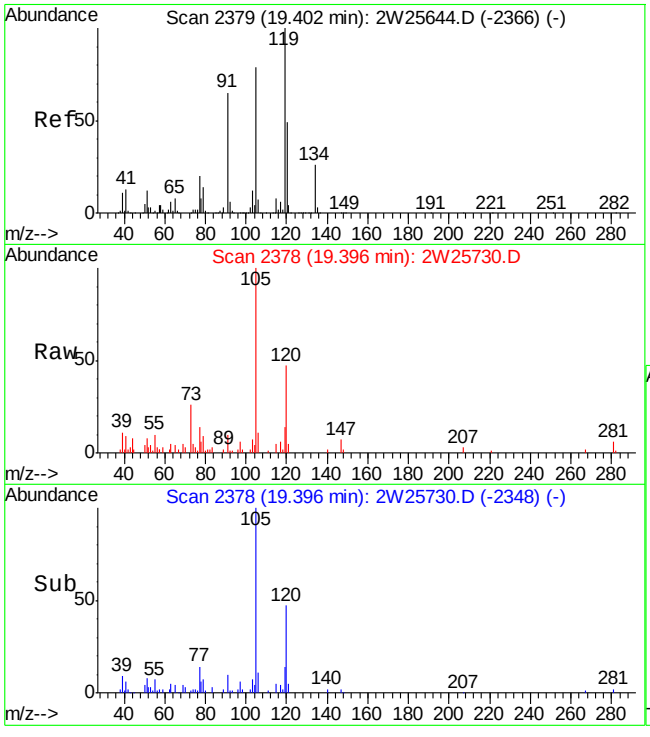


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.14 PPBV
RT: 18.95 min Scan# 2304
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:105 Resp: 3924

Ion	Ratio	Lower	Upper
105	100		
120	48.0	33.8	73.8
91	0.0	0.0	30.1

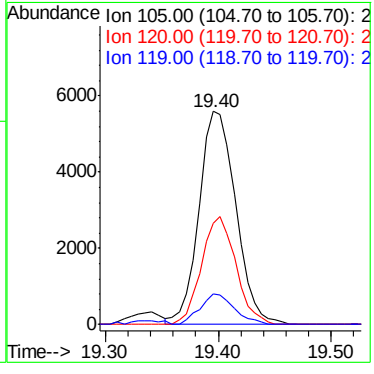




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.53 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. -0.01 min
Lab File: 2W25730.D
Acq: 29 Sep 2009 4:56 am

Tgt Ion:105 Resp: 12700

Ion	Ratio	Lower	Upper
105	100		
120	47.0	41.7	81.7
119	13.4	106.1	146.1#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25731.D Vial: 9
Acq On : 29 Sep 2009 5:40 am Operator: YOUMINH
Sample : JA28238-6 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:49:13 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	101120	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	498899	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	217645	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	217746	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	104475	4.66	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 93.20%

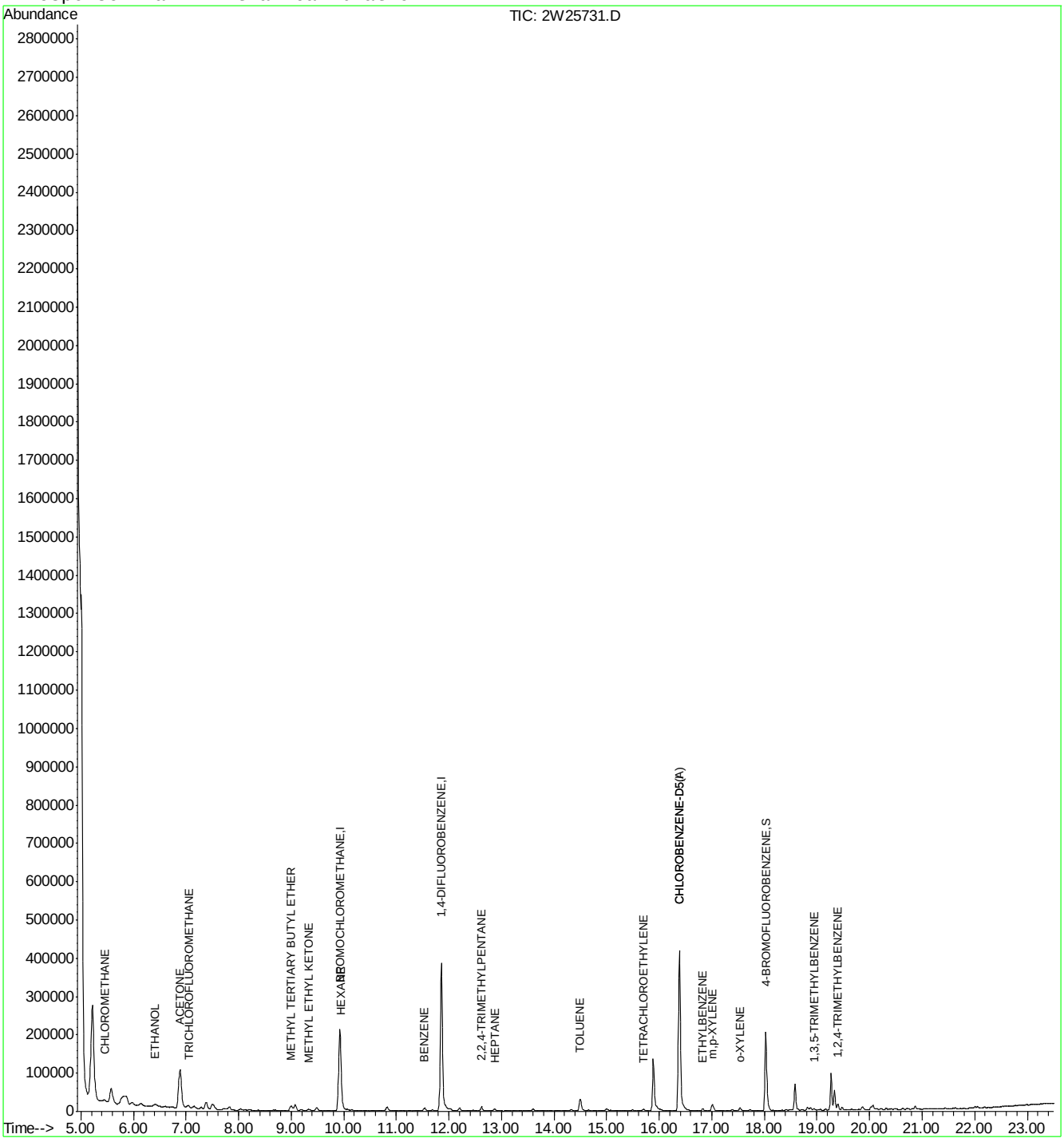
Target Compounds						Qvalue
9) CHLOROMETHANE	5.45	52	2744	0.58	PPBV #	86
17) TRICHLOROFLUOROMETHANE	7.05	101	8351	0.27	PPBV #	95
19) ACETONE	6.88	58	49357	7.12	PPBV #	65
26) ETHANOL	6.41	45	18725	3.96	PPBV	96
33) METHYL TERTIARY BUTYL ETHE	8.99	73	9032	0.29	PPBV #	58
35) HEXANE	9.95	57	7586	0.42	PPBV	92
38) METHYL ETHYL KETONE	9.33	72	2604	0.45	PPBV #	87
47) BENZENE	11.54	78	11108	0.24	PPBV	99
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	12824	0.23	PPBV #	86
56) HEPTANE	12.87	43	3600	0.16	PPBV	82
60) TOLUENE	14.49	92	20550	0.69	PPBV	93
65) TETRACHLOROETHYLENE	15.70	164	1540	0.08	PPBV #	71
71) ETHYLBENZENE	16.83	91	6266	0.12	PPBV #	92
72) m,p-XYLENE	17.00	106	8750	0.45	PPBV	91
73) o-XYLENE	17.53	106	2919	0.16	PPBV #	78
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	3343	0.12	PPBV #	90
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	11092	0.48	PPBV #	27

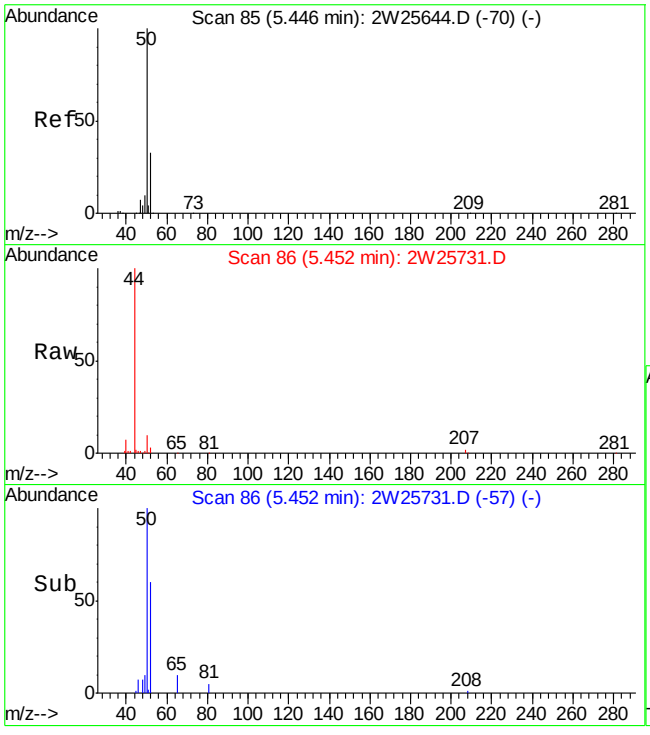
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25731.D Vial: 9
Acq On : 29 Sep 2009 5:40 am Operator: YOUMINH
Sample : JA28238-6 Inst : MS2W
Misc : MS86174,V2W1083,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:46 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

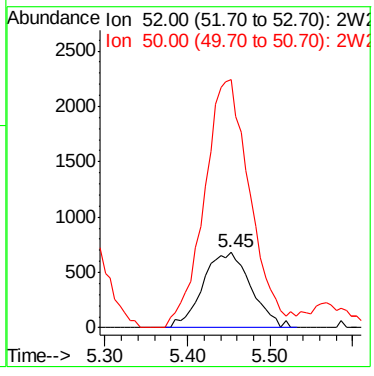


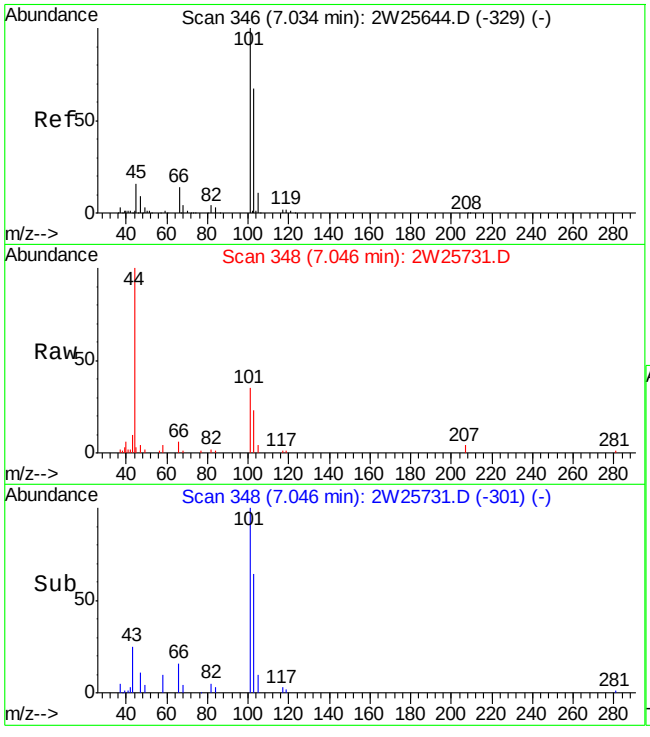


#9
CHLOROMETHANE
Concen: 0.58 PPBV
RT: 5.45 min Scan# 86
Delta R.T. 0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 52 Resp: 2744

Ion	Ratio	Lower	Upper
52	100		
50	320.0	272.1	312.1#

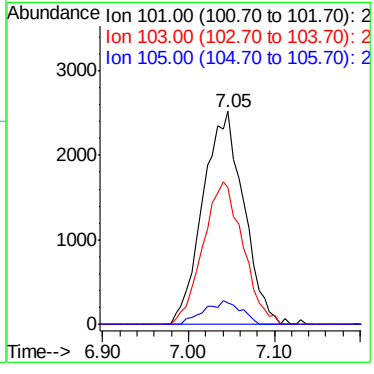


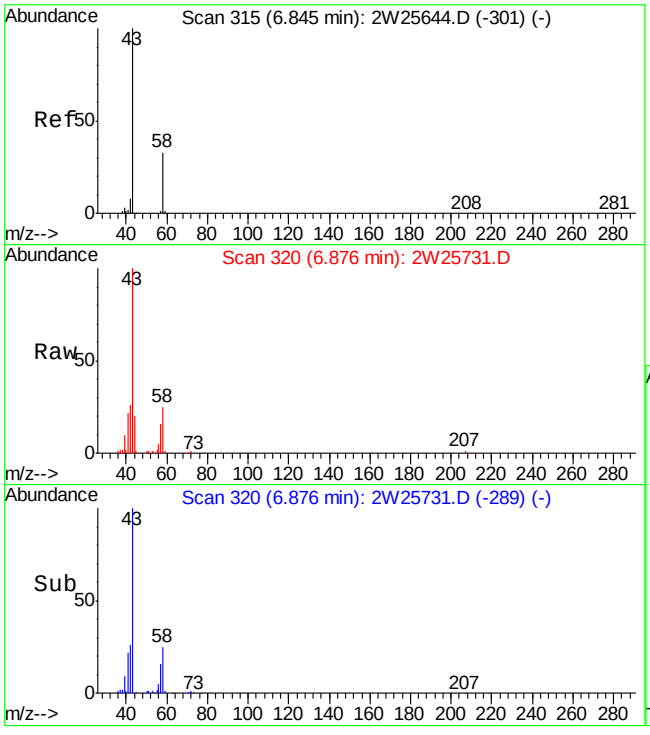


#17
TRICHLOROFLUOROMETHANE
Concen: 0.27 PPBV
RT: 7.05 min Scan# 348
Delta R.T. 0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion:101 Resp: 8351

Ion	Ratio	Lower	Upper
101	100		
103	65.5	46.0	86.0
105	0.0	0.0	30.8

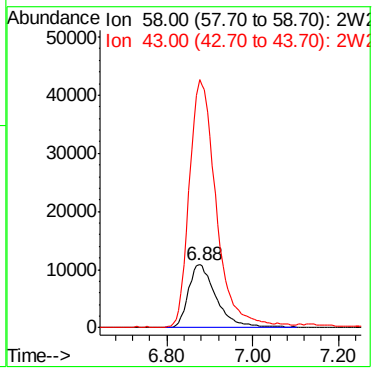


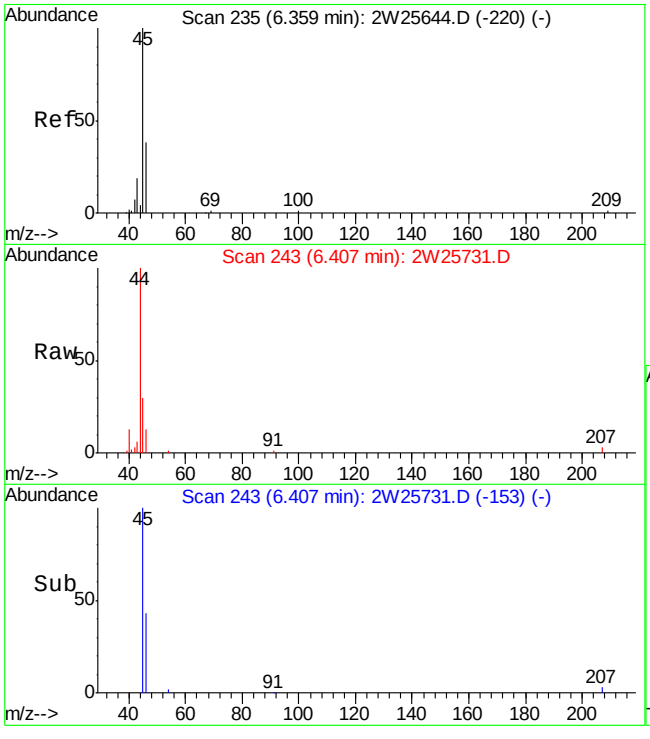


#19
ACETONE
Concen: 7.12 PPBV
RT: 6.88 min Scan# 320
Delta R.T. 0.03 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 58 Resp: 49357

Ion	Ratio	Lower	Upper
58	100		
43	374.9	284.9	324.9#

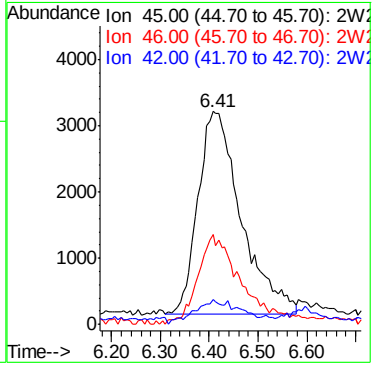


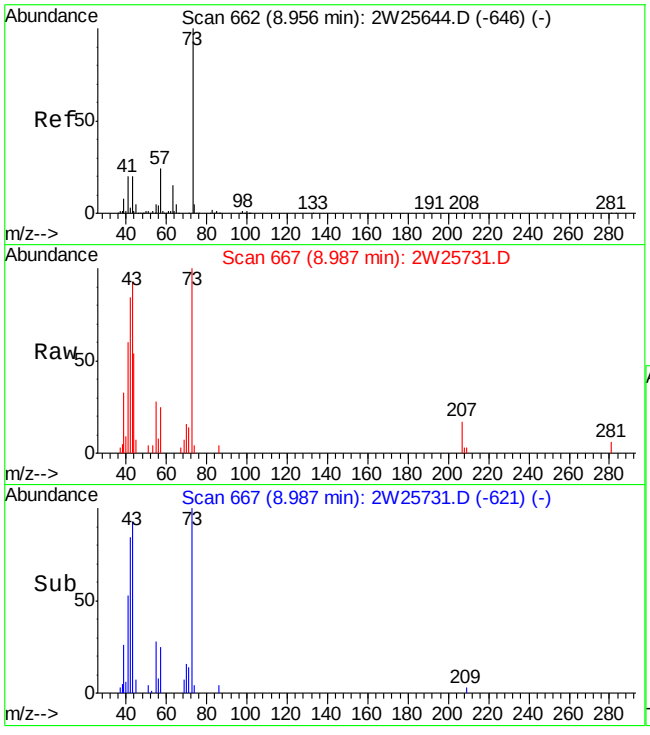


#26
ETHANOL
Concen: 3.96 PPBV
RT: 6.41 min Scan# 243
Delta R.T. 0.05 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 45 Resp: 18725

Ion	Ratio	Lower	Upper
45	100		
46	41.9	19.4	59.4
42	9.6	0.0	28.5

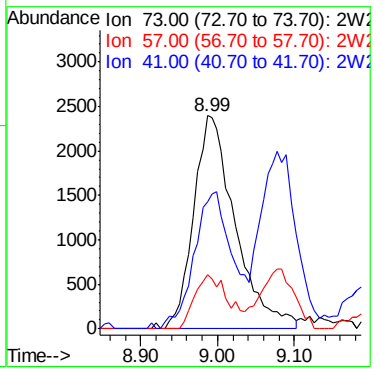


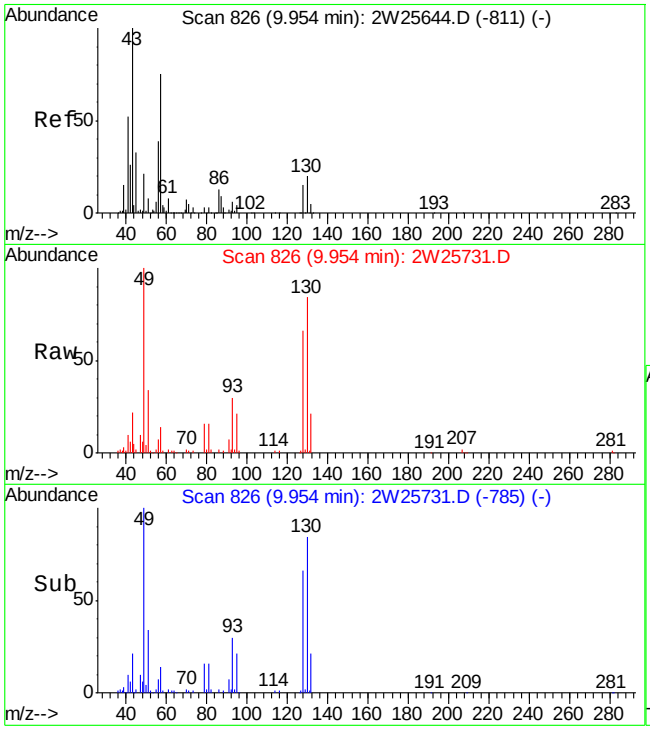


#33
METHYL TERTIARY BUTYL ETHER
Concen: 0.29 PPBV
RT: 8.99 min Scan# 667
Delta R.T. 0.03 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 73 Resp: 9032

Ion	Ratio	Lower	Upper
73	100		
57	20.4	3.3	43.3
41	59.3	1.5	41.5#

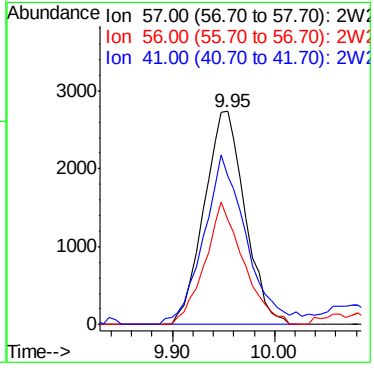


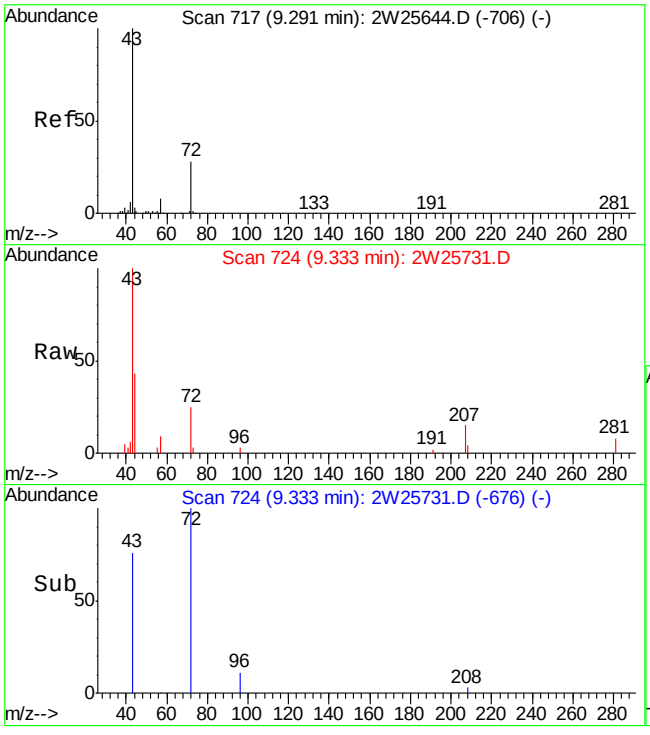


#35
HEXANE
Concen: 0.42 PPBV
RT: 9.95 min Scan# 826
Delta R.T. 0.00 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 57 Resp: 7586

Ion	Ratio	Lower	Upper
57	100		
56	54.4	31.3	71.3
41	83.5	72.4	112.4

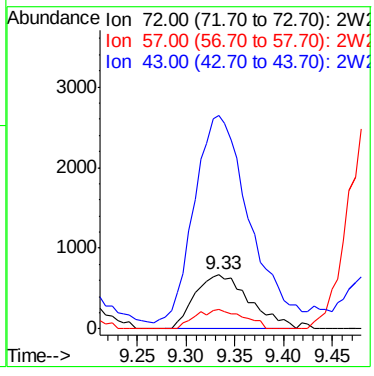


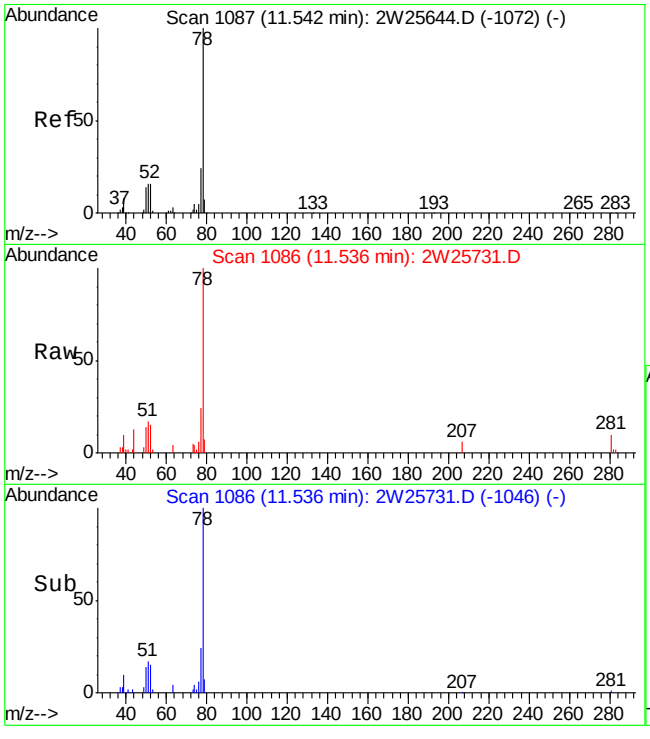


#38
METHYL ETHYL KETONE
Concen: 0.45 PPBV
RT: 9.33 min Scan# 724
Delta R.T. 0.04 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 72 Resp: 2604

Ion	Ratio	Lower	Upper
72	100		
57	36.3	9.4	49.4
43	393.0	343.3	383.3#

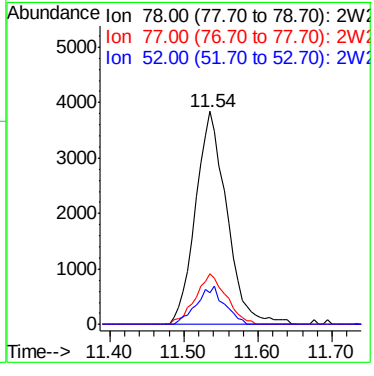


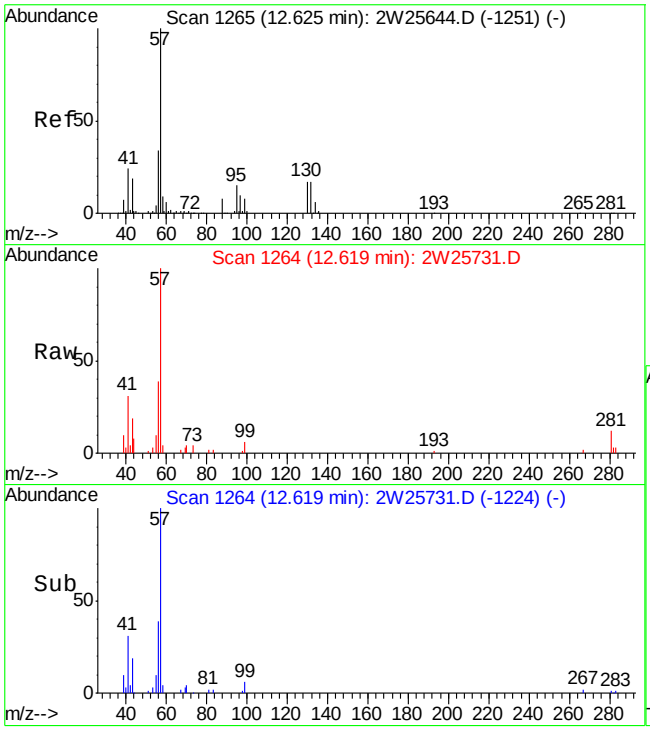


#47
BENZENE
Concen: 0.24 PPBV
RT: 11.54 min Scan# 1086
Delta R.T. -0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 78 Resp: 11108

Ion	Ratio	Lower	Upper
78	100		
77	23.4	3.8	43.8
52	16.0	0.0	35.8

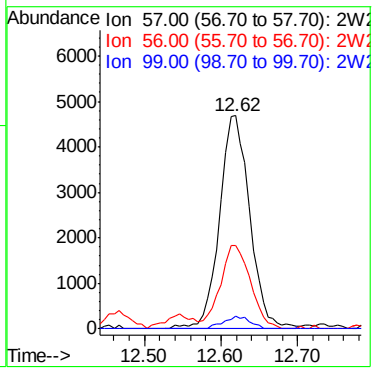


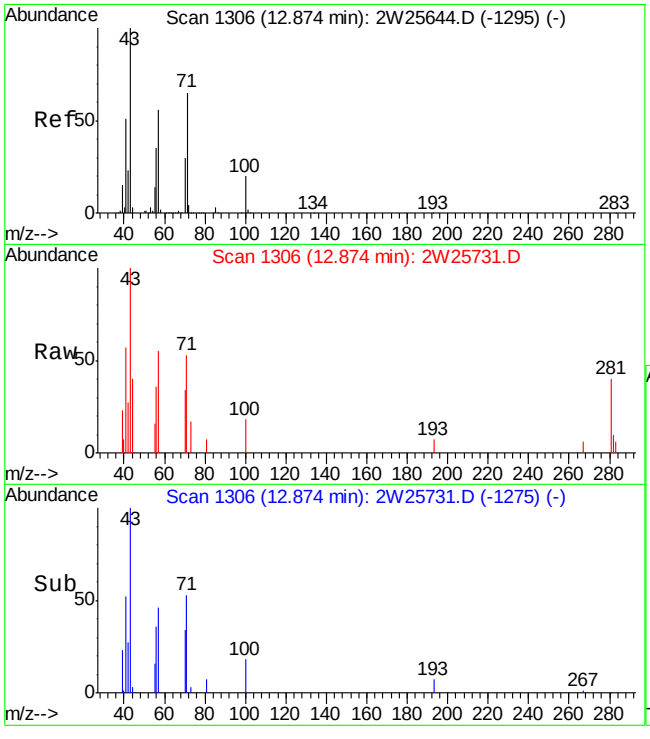


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.23 PPBV
RT: 12.62 min Scan# 1264
Delta R.T. -0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 57 Resp: 12824

Ion	Ratio	Lower	Upper
57	100		
56	39.4	13.2	53.2
99	0.0	0.0	28.8

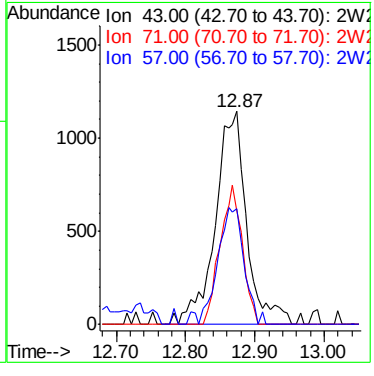


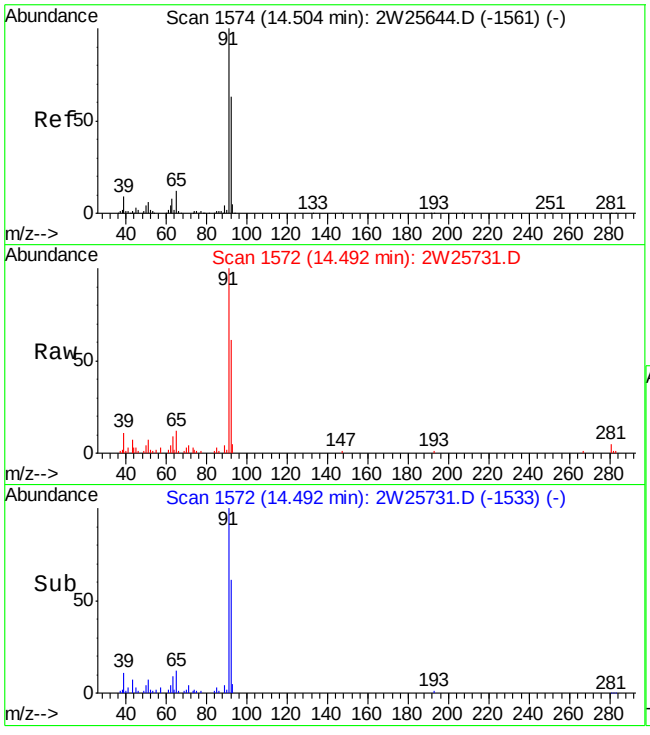


#56
HEPTANE
Concen: 0.16 PPBV
RT: 12.87 min Scan# 1306
Delta R.T. 0.00 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 43 Resp: 3600

Ion	Ratio	Lower	Upper
43	100		
71	46.3	44.0	84.0
57	45.8	35.5	75.5

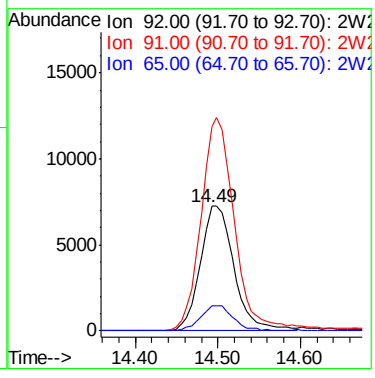


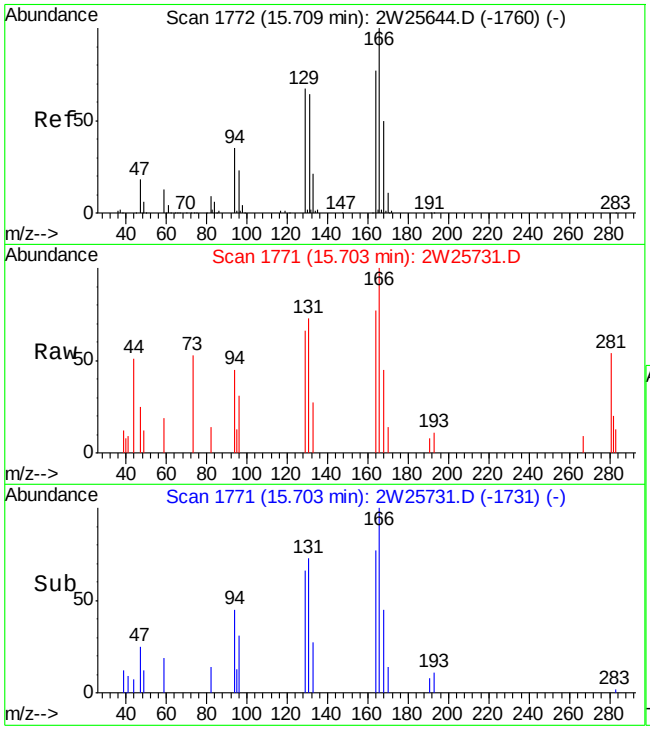


#60
TOLUENE
Concen: 0.69 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. -0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 92 Resp: 20550

Ion	Ratio	Lower	Upper
92	100		
91	170.3	140.7	180.7
65	19.2	0.0	38.6

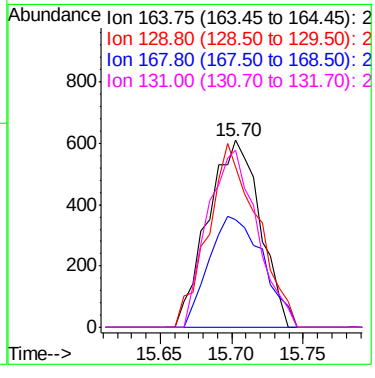


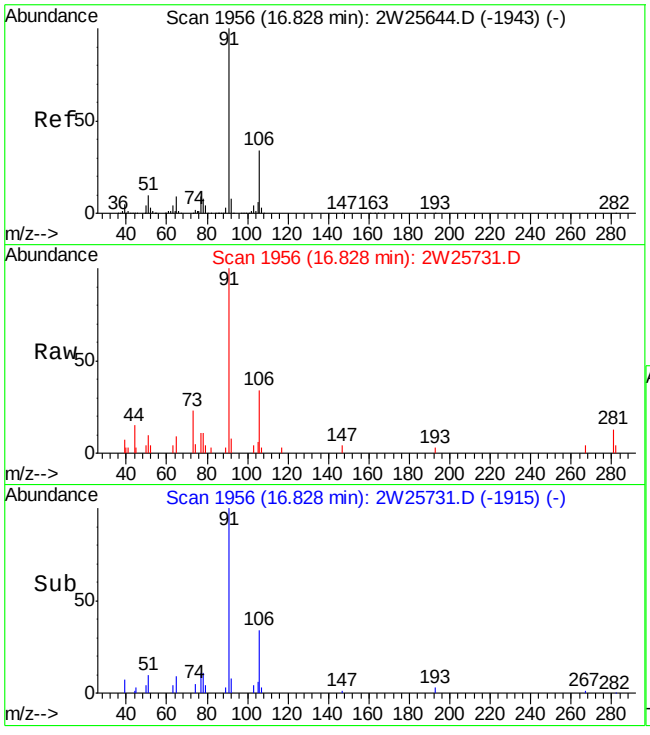


#65
TETRACHLOROETHYLENE
Concen: 0.08 PPBV
RT: 15.70 min Scan# 1771
Delta R.T. -0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion:164 Resp: 1540

Ion	Ratio	Lower	Upper
164	100		
129	93.4	65.6	105.6
168	0.0	43.4	83.4#
131	90.5	62.3	102.3

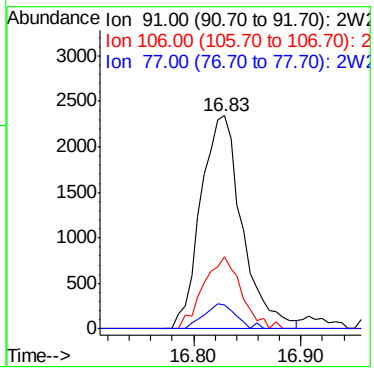


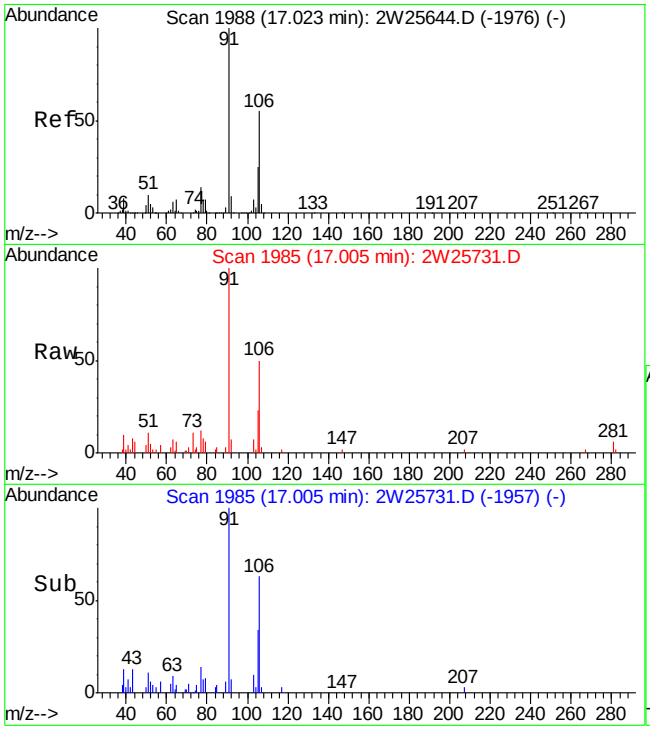


#71
ETHYLBENZENE
Concen: 0.12 PPBV
RT: 16.83 min Scan# 1956
Delta R.T. 0.00 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion: 91 Resp: 6266

Ion	Ratio	Lower	Upper
91	100		
106	31.2	13.0	53.0
77	0.0	0.0	28.8

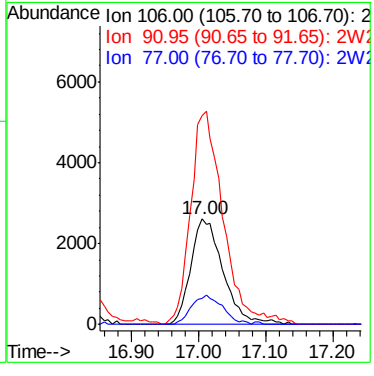


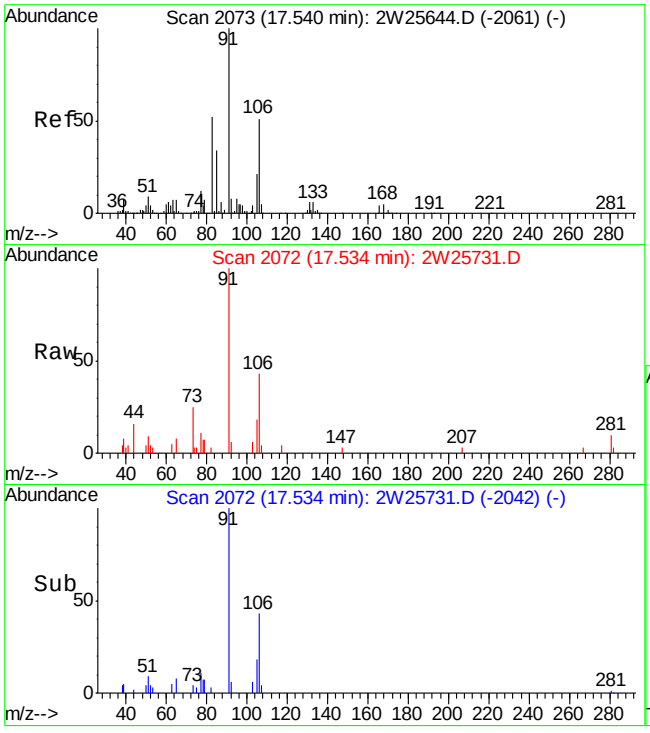


#72
m,p-XYLENE
Concen: 0.45 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.02 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion:106 Resp: 8750

Ion	Ratio	Lower	Upper
106	100		
91	198.8	147.4	221.2
77	24.4	20.5	30.7

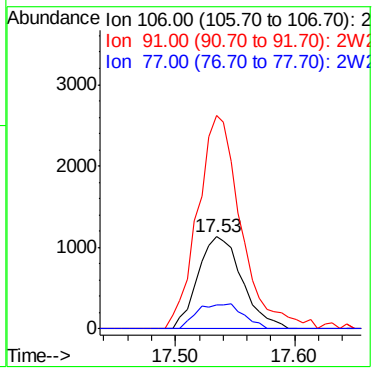


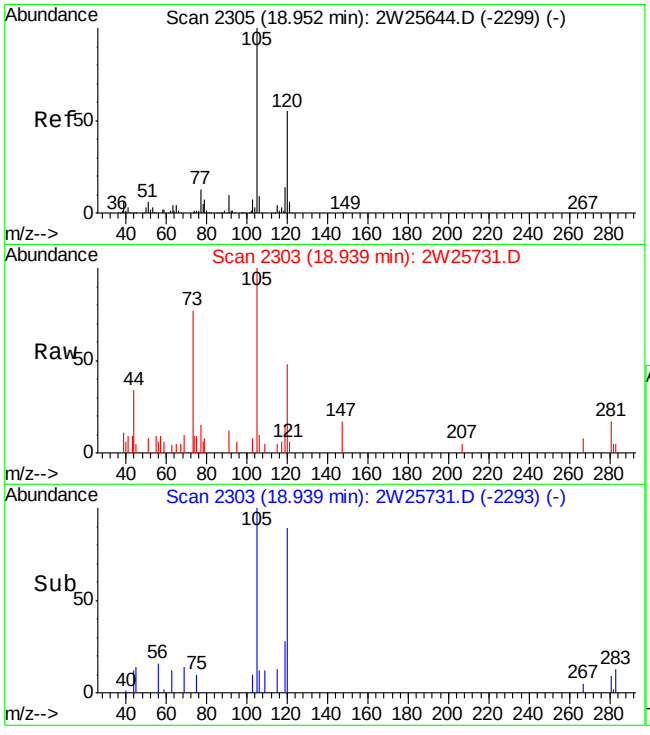


#73
o-XYLENE
Concen: 0.16 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. -0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion:106 Resp: 2919

Ion	Ratio	Lower	Upper
106	100		
91	227.6	179.7	219.7#
77	0.0	5.4	45.4#

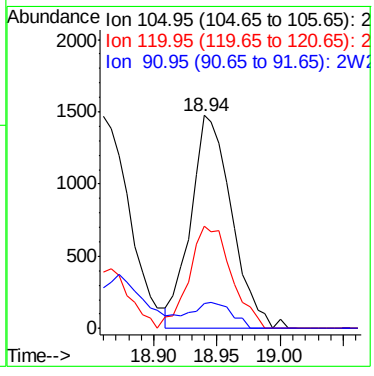


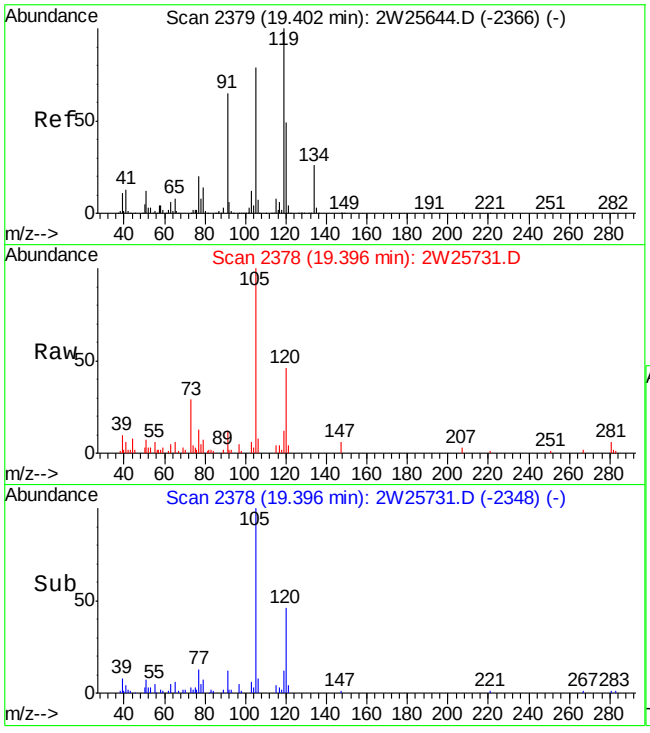


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.12 PPBV
RT: 18.94 min Scan# 2303
Delta R.T. -0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion:105 Resp: 3343

Ion	Ratio	Lower	Upper
105	100		
120	49.3	33.8	73.8
91	0.0	0.0	30.1

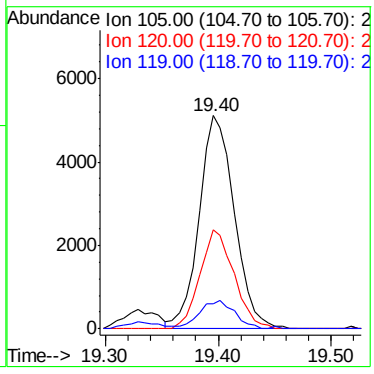




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.48 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. -0.01 min
Lab File: 2W25731.D
Acq: 29 Sep 2009 5:40 am

Tgt Ion:105 Resp: 11092

Ion	Ratio	Lower	Upper
105	100		
120	44.9	41.7	81.7
119	13.4	106.1	146.1#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25787.D Vial: 6
Acq On : 5 Oct 2009 12:30 pm Operator: YOUMINH
Sample : JA28238-7 Inst : MS2W
Misc : MS86174,V2W1086,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:02 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

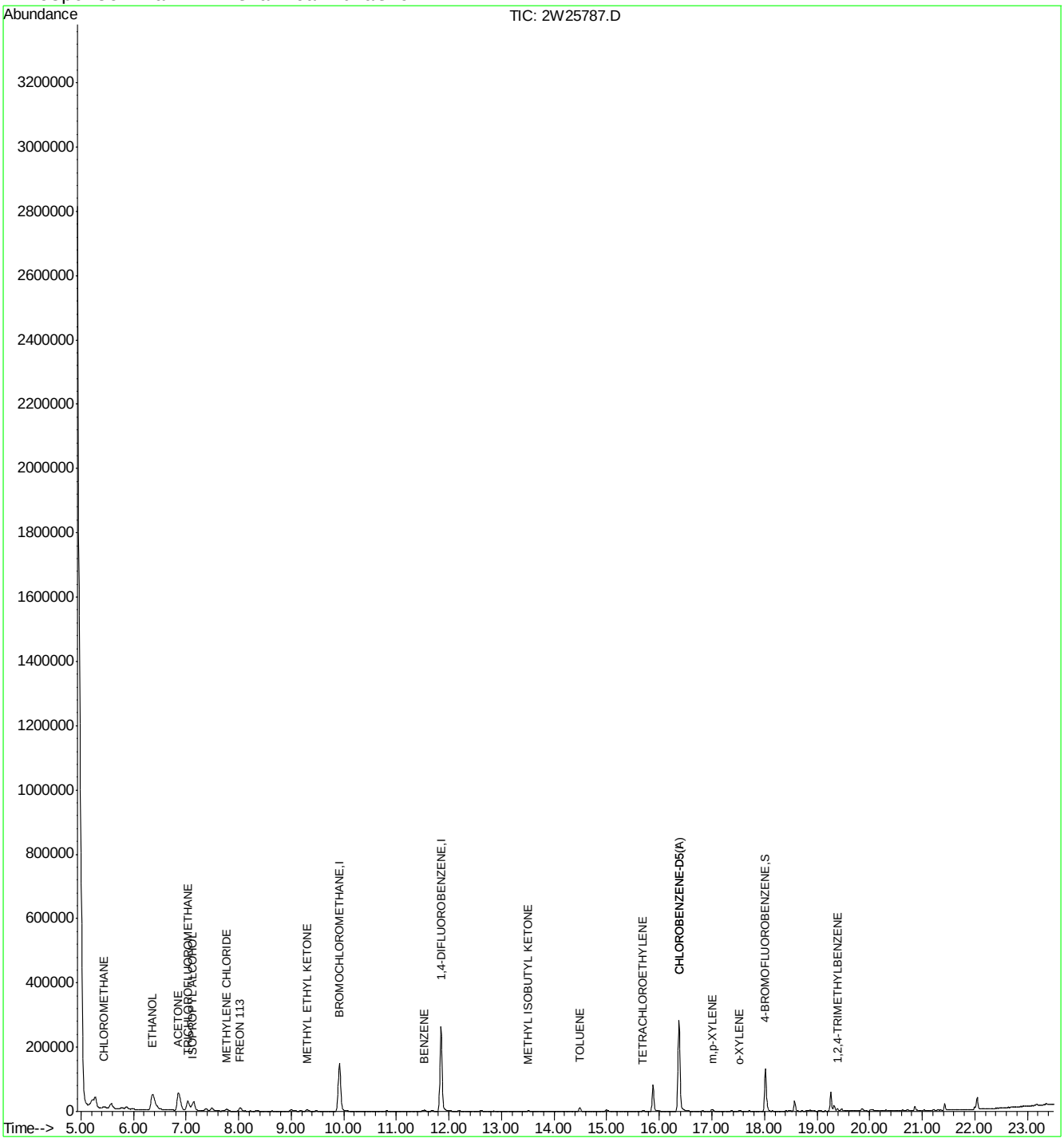
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	80767	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	340987	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.37	82	143862	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.37	82	143739	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	65596	4.64	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 92.80%			
Target Compounds						Qvalue
9) CHLOROMETHANE	5.45	52	3110	1.01	PPBV #	77
17) TRICHLOROFLUOROMETHANE	7.03	101	41578	1.10	PPBV	99
18) ISOPROPYL ALCOHOL	7.11	45	35405	2.24	PPBV	95
19) ACETONE	6.85	58	45321	8.54	PPBV	98
26) ETHANOL	6.36	45	160295	48.77	PPBV	100
28) METHYLENE CHLORIDE	7.78	84	5570	0.57	PPBV	99
30) FREON 113	8.03	151	6601	0.34	PPBV	98
38) METHYL ETHYL KETONE	9.30	72	3051	0.72	PPBV	91
47) BENZENE	11.53	78	4590	0.15	PPBV	99
58) METHYL ISOBUTYL KETONE	13.51	43	1734	0.12	PPBV	83
60) TOLUENE	14.49	92	7339	0.36	PPBV	95
65) TETRACHLOROETHYLENE	15.69	164	702	0.05	PPBV	95
72) m,p-XYLENE	17.00	106	3554	0.26	PPBV	98
73) o-XYLENE	17.53	106	1385	0.11	PPBV #	82
85) 1,2,4-TRIMETHYLBENZENE	19.39	105	4814	0.23	PPBV #	29

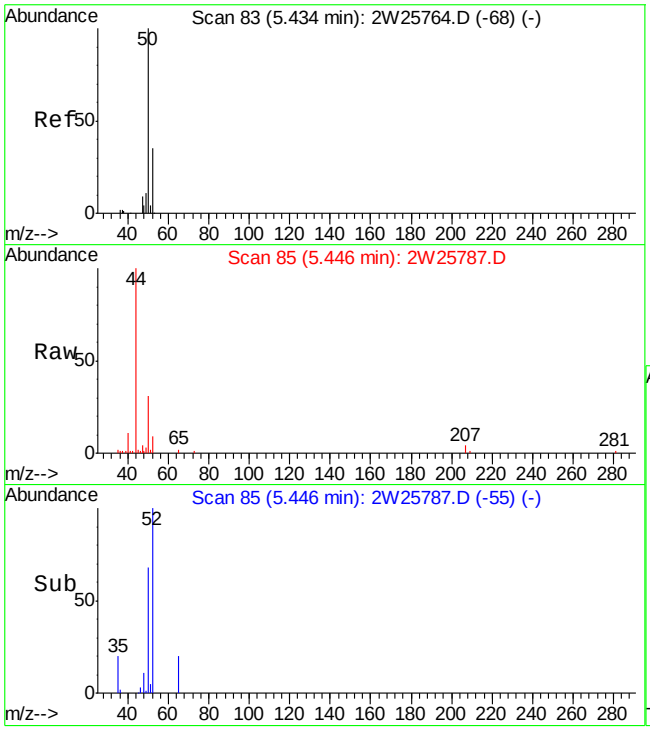
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25787.D Vial: 6
Acq On : 5 Oct 2009 12:30 pm Operator: YOUMINH
Sample : JA28238-7 Inst : MS2W
Misc : MS86174,V2W1086,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:30 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

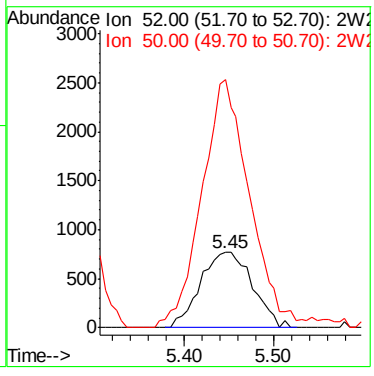


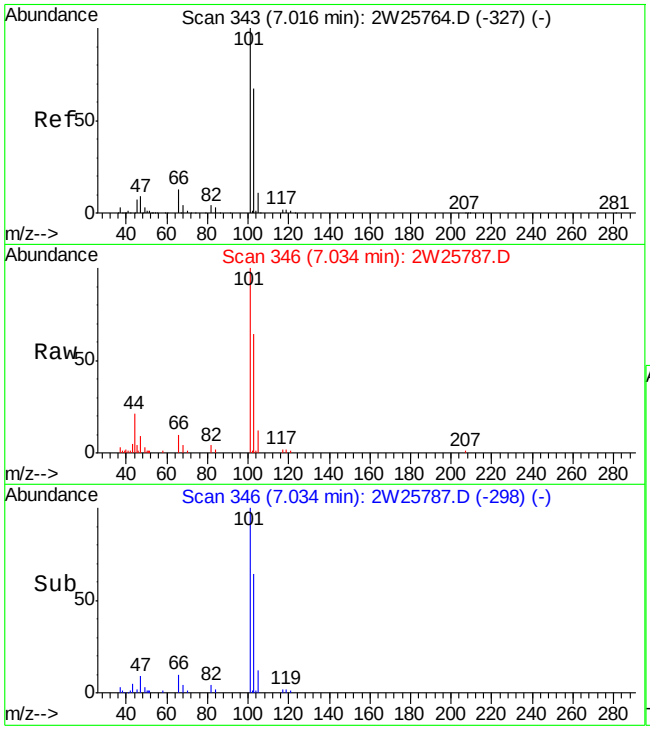


#9
CHLOROMETHANE
Concen: 1.01 PPBV
RT: 5.45 min Scan# 85
Delta R.T. 0.01 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 52 Resp: 3110

Ion	Ratio	Lower	Upper
52	100		
50	319.5	256.7	296.7#

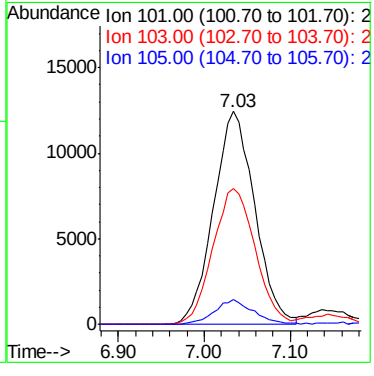


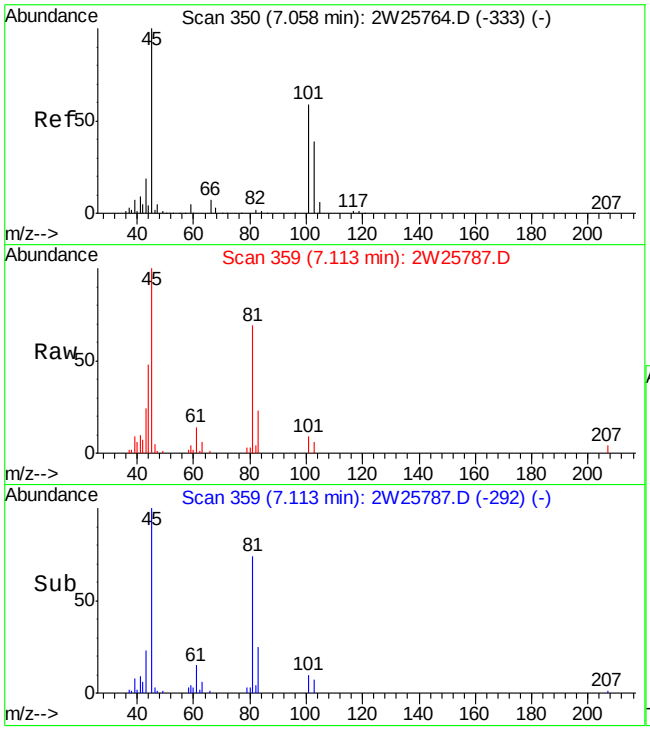


#17
TRICHLOROFLUOROMETHANE
Concen: 1.10 PPBV
RT: 7.03 min Scan# 346
Delta R.T. 0.02 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion:101 Resp: 41578

Ion	Ratio	Lower	Upper
101	100		
103	65.4	46.0	86.0
105	11.1	0.0	31.0

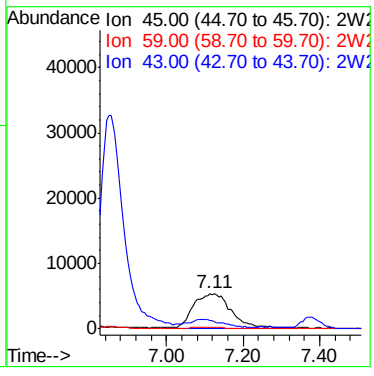


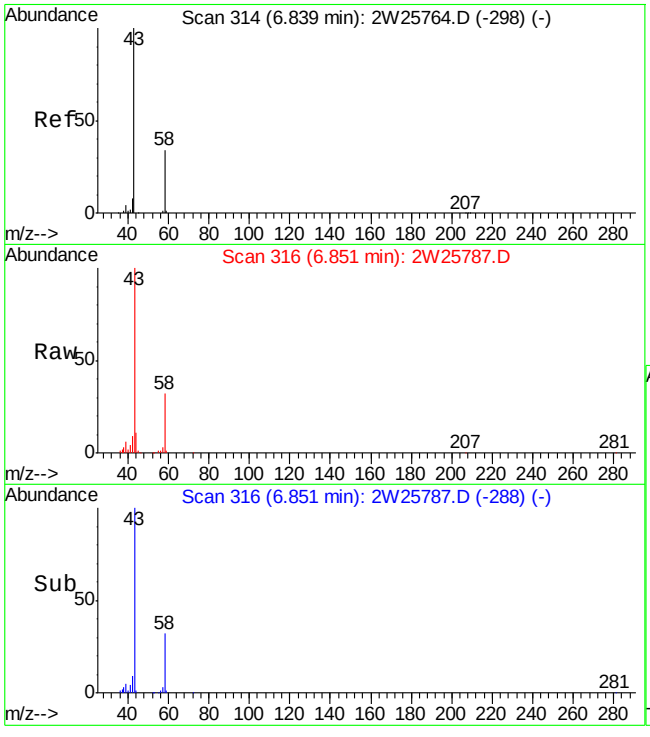


#18
ISOPROPYL ALCOHOL
Concen: 2.24 PPBV
RT: 7.11 min Scan# 359
Delta R.T. 0.05 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 45 Resp: 35405

Ion	Ratio	Lower	Upper
45	100		
59	3.6	0.0	24.7
43	23.8	1.3	41.3

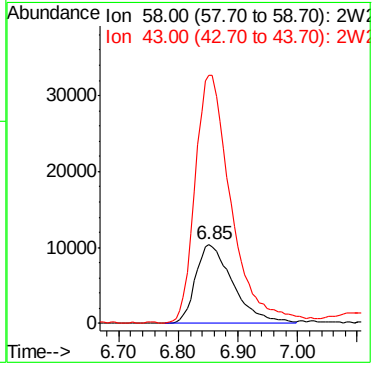


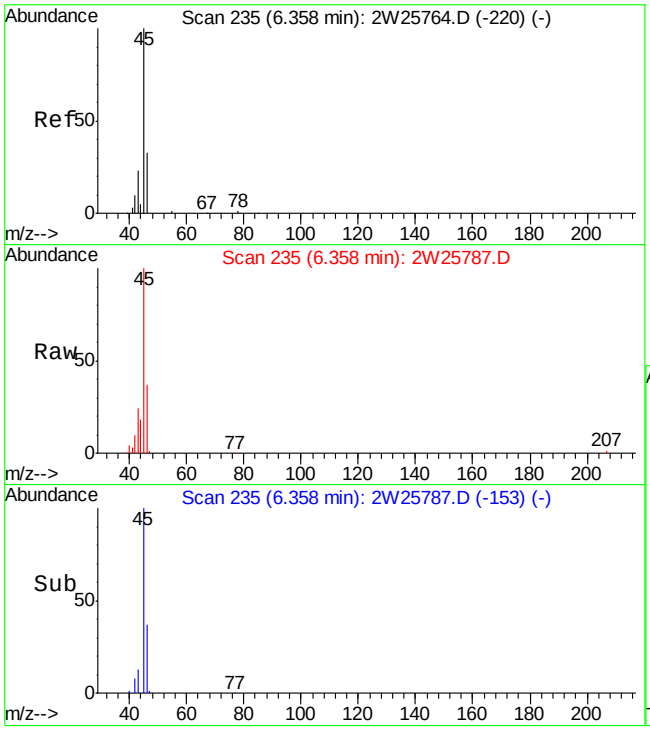


#19
ACETONE
Concen: 8.54 PPBV
RT: 6.85 min Scan# 316
Delta R.T. 0.01 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 58 Resp: 45321

Ion	Ratio	Lower	Upper
58	100		
43	305.0	281.6	321.6

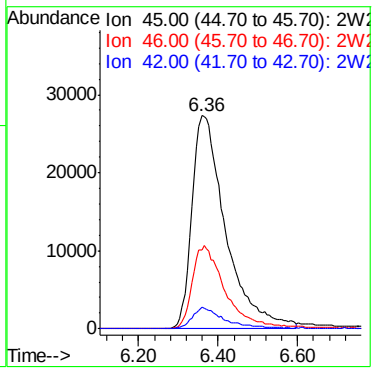


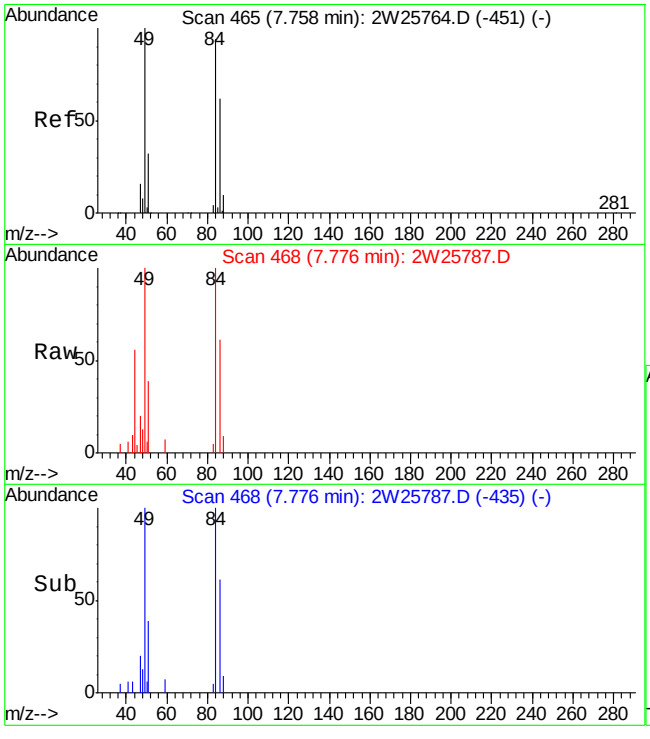


#26
ETHANOL
Concen: 48.77 PPBV
RT: 6.36 min Scan# 235
Delta R.T. 0.00 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 45 Resp: 160295

Ion	Ratio	Lower	Upper
45	100		
46	37.6	17.8	57.8
42	9.5	0.0	29.6

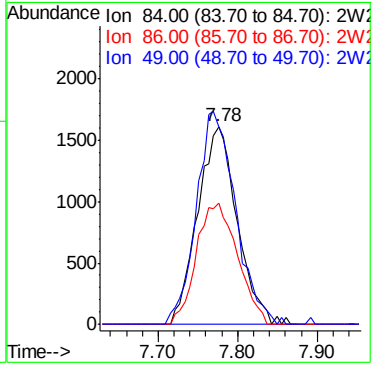


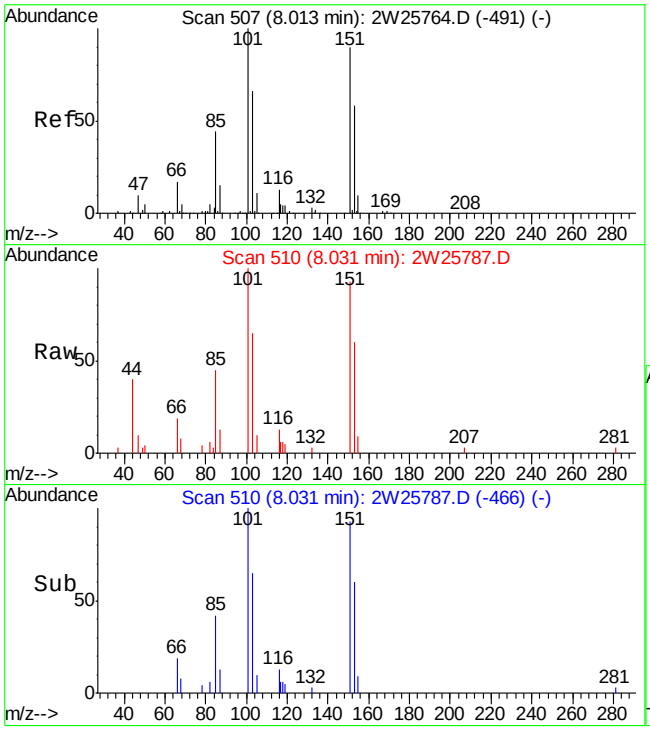


#28
METHYLENE CHLORIDE
Concen: 0.57 PPBV
RT: 7.78 min Scan# 468
Delta R.T. 0.02 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 84 Resp: 5570

Ion	Ratio	Lower	Upper
84	100		
86	63.6	45.3	85.3
49	106.7	0.0	305.8

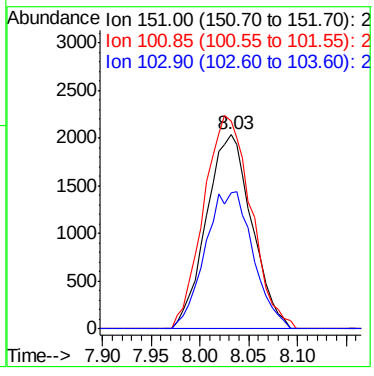


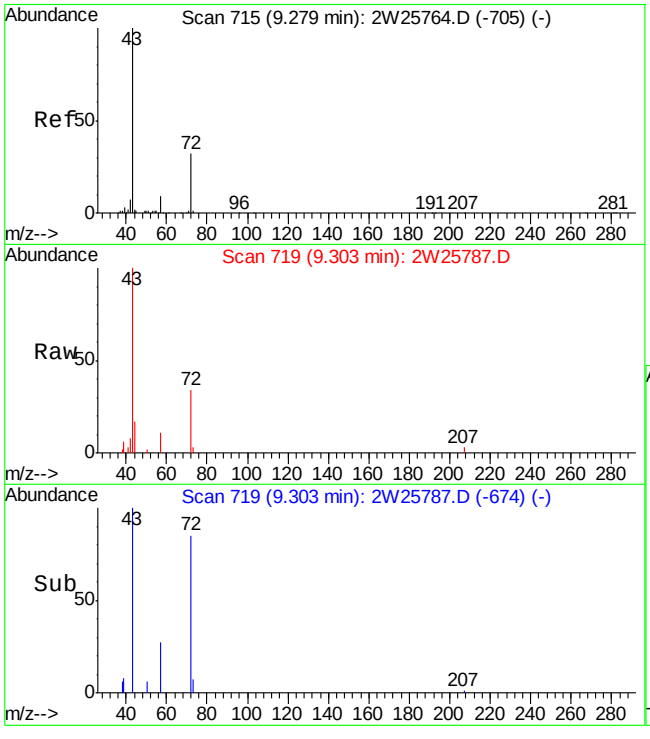


#30
FREON 113
Concen: 0.34 PPBV
RT: 8.03 min Scan# 510
Delta R.T. 0.02 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion:151 Resp: 6601

Ion	Ratio	Lower	Upper
151	100		
101	114.0	91.6	131.6
103	74.1	52.8	92.8

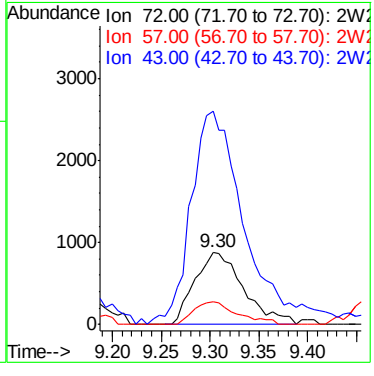


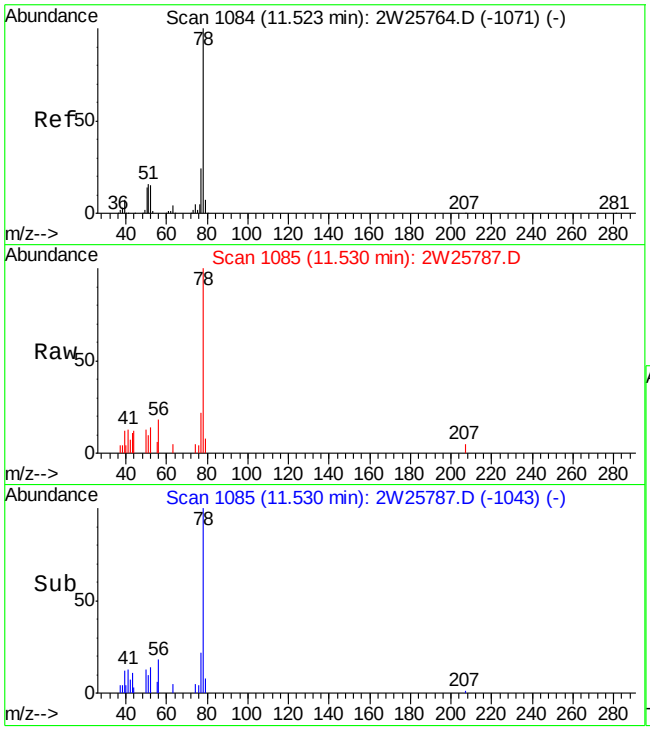


#38
METHYL ETHYL KETONE
Concen: 0.72 PPBV
RT: 9.30 min Scan# 719
Delta R.T. 0.02 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 72 Resp: 3051

Ion	Ratio	Lower	Upper
72	100		
57	32.2	8.3	48.3
43	295.5	294.9	334.9

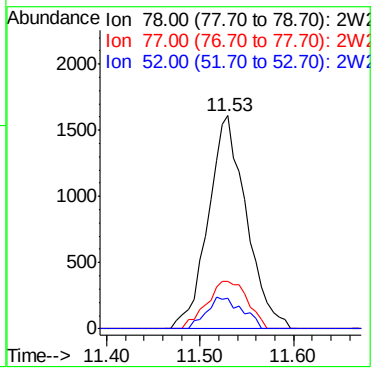


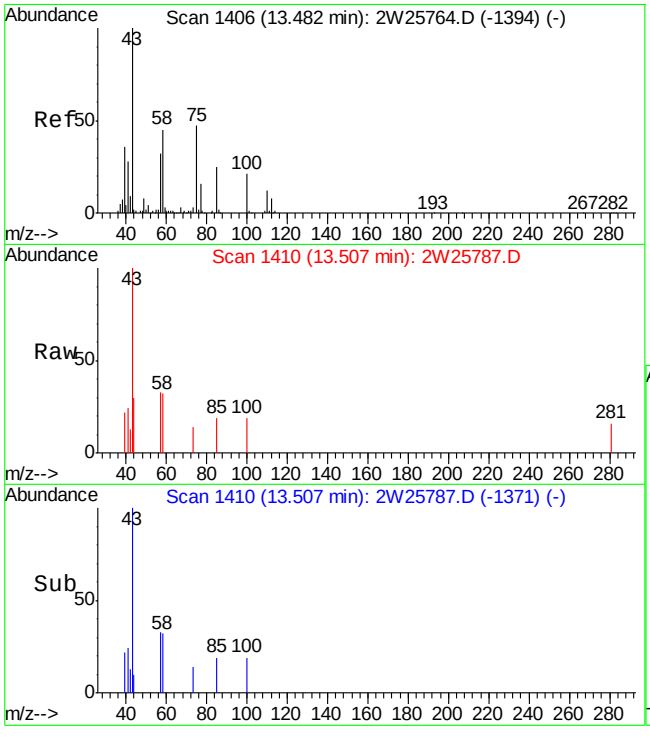


#47
BENZENE
Concen: 0.15 PPBV
RT: 11.53 min Scan# 1085
Delta R.T. 0.01 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 78 Resp: 4590

Ion	Ratio	Lower	Upper
78	100		
77	24.0	3.5	43.5
52	13.9	0.0	34.5

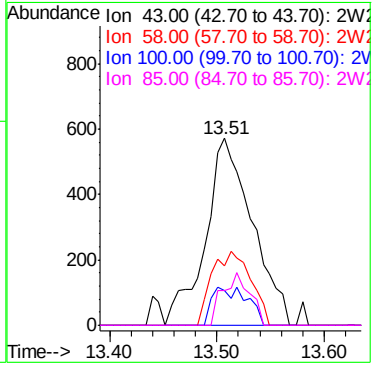


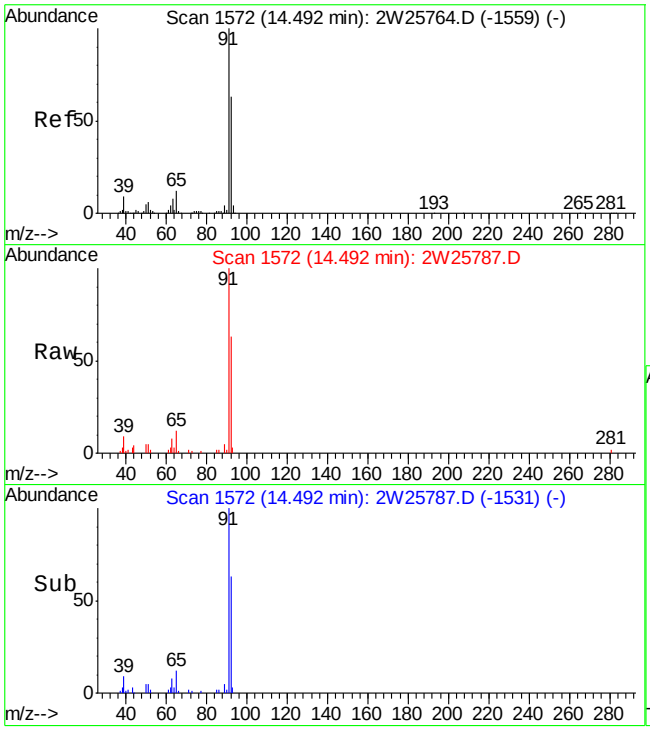


#58
METHYL ISOBUTYL KETONE
Concen: 0.12 PPBV
RT: 13.51 min Scan# 1410
Delta R.T. 0.02 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 43 Resp: 1734

Ion	Ratio	Lower	Upper
43	100		
58	32.7	25.2	65.2
100	15.2	0.2	40.2
85	16.3	5.0	45.0

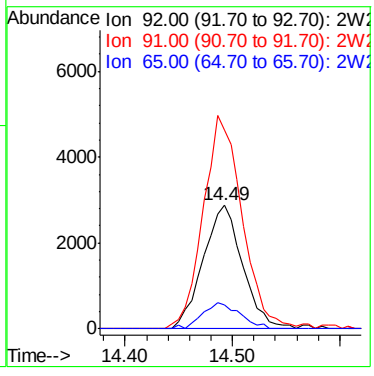


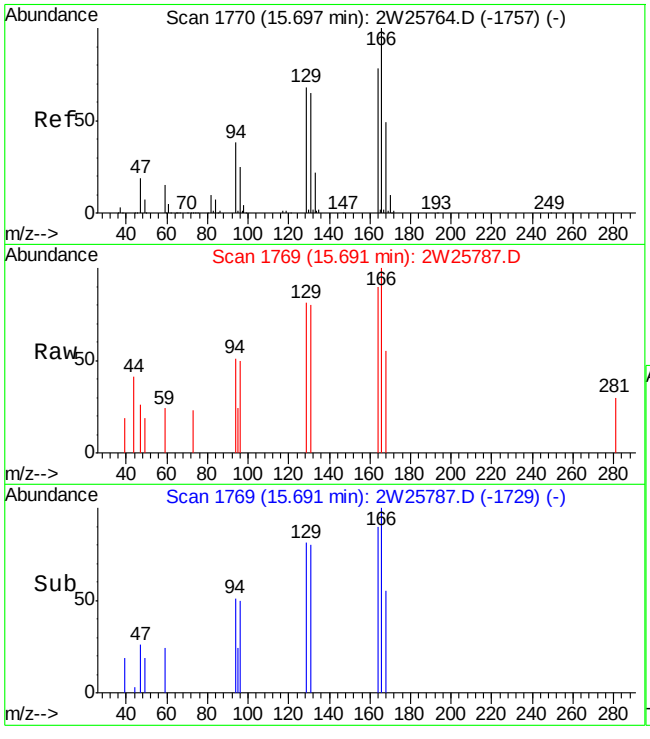


#60
TOLUENE
Concen: 0.36 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. -0.00 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion: 92 Resp: 7339

Ion	Ratio	Lower	Upper
92	100		
91	170.9	143.7	183.7
65	19.8	0.0	38.6

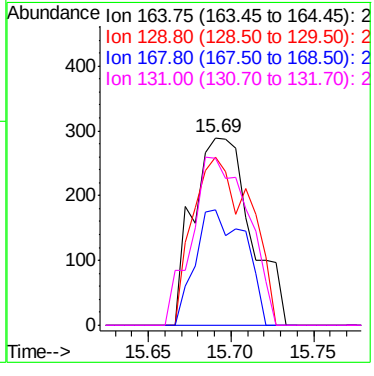


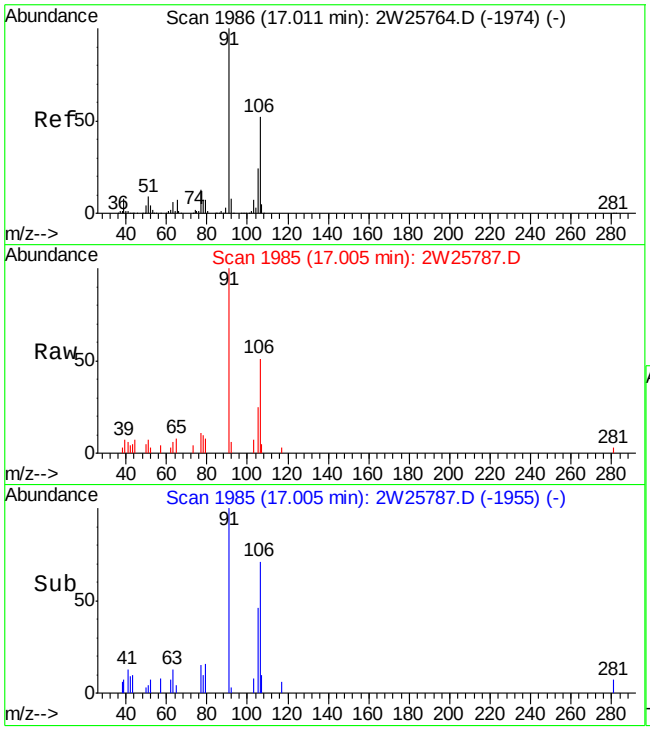


#65
TETRACHLOROETHYLENE
Concen: 0.05 PPBV
RT: 15.69 min Scan# 1769
Delta R.T. -0.01 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion:164 Resp: 702

Ion	Ratio	Lower	Upper
164	100		
129	88.5	67.5	107.5
168	52.7	42.6	82.6
131	87.5	64.8	104.8

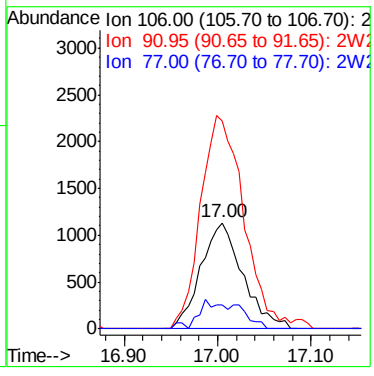


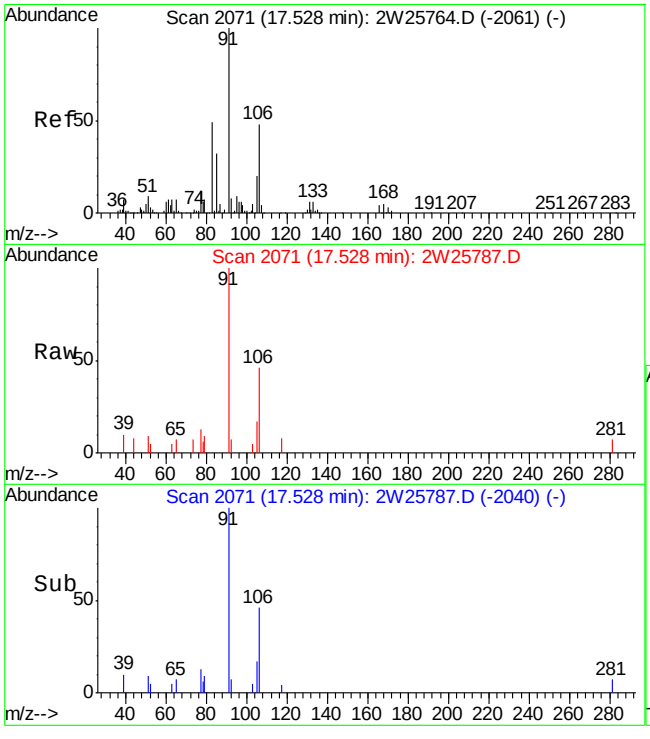


#72
m,p-XYLENE
Concen: 0.26 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.01 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion:106 Resp: 3554

Ion	Ratio	Lower	Upper
106	100		
91	195.7	155.5	233.3
77	22.1	20.4	30.6

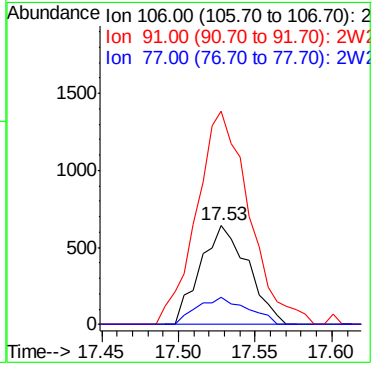


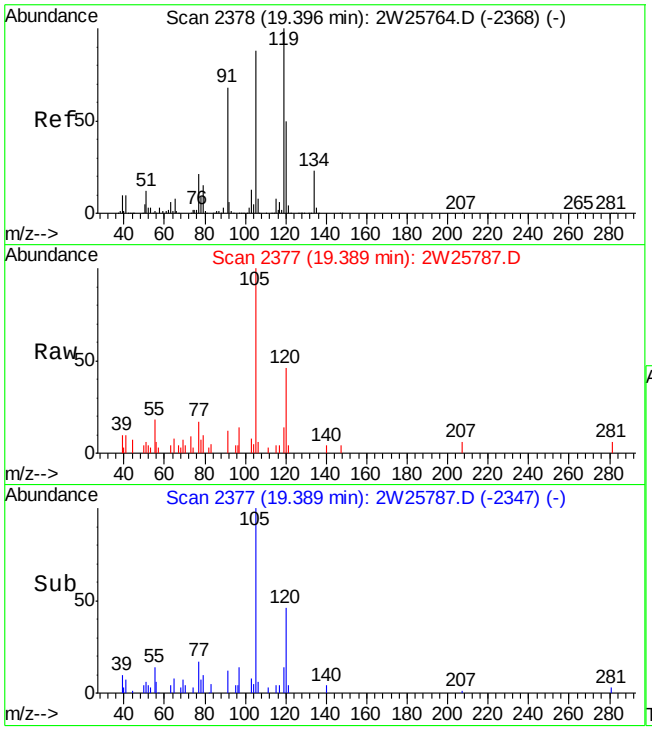


#73
o-XYLENE
Concen: 0.11 PPBV
RT: 17.53 min Scan# 2071
Delta R.T. -0.00 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion:106 Resp: 1385

Ion	Ratio	Lower	Upper
106	100		
91	238.6	189.0	229.0#
77	29.3	5.7	45.7

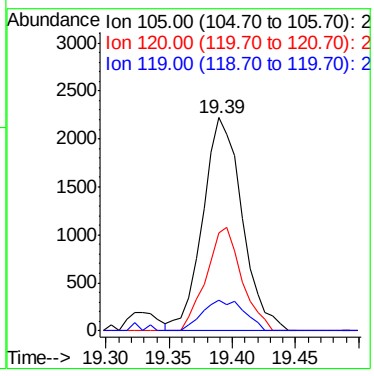




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.23 PPBV
RT: 19.39 min Scan# 2377
Delta R.T. -0.01 min
Lab File: 2W25787.D
Acq: 5 Oct 2009 12:30 pm

Tgt Ion:105 Resp: 4814

Ion	Ratio	Lower	Upper
105	100		
120	43.5	38.0	78.0
119	15.3	102.8	142.8#



6.1.7

6

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25788.D Vial: 7
Acq On : 5 Oct 2009 1:13 pm Operator: YOUMINH
Sample : JA28238-8 Inst : MS2W
Misc : MS86174,V2W1086,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:04 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	86372	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	391748	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	173573	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	173353	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	78894	4.63	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 92.60%

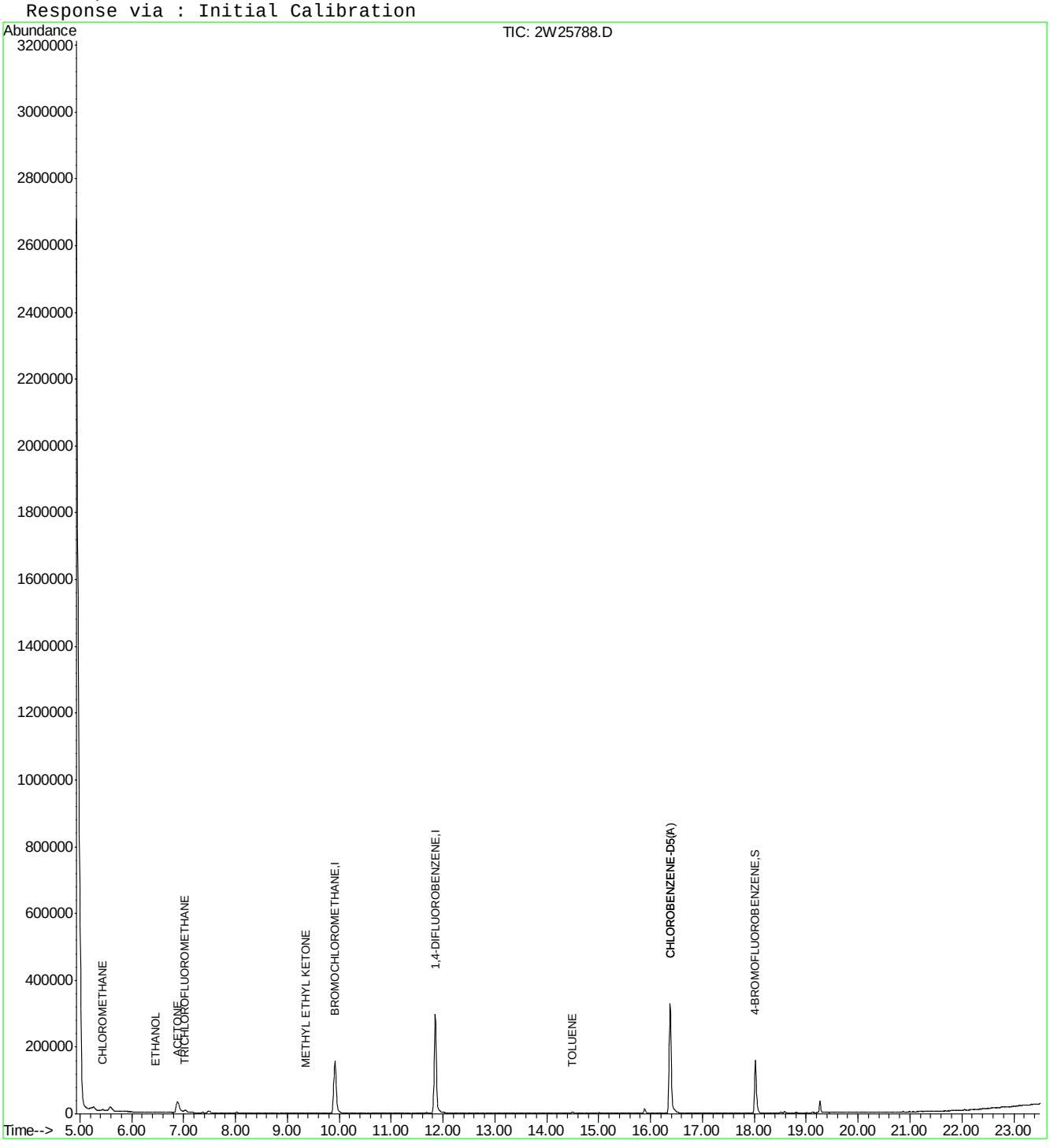
Target Compounds						Qvalue
9) CHLOROMETHANE	5.45	52	1675	0.51	PPBV	91
17) TRICHLOROFLUOROMETHANE	7.03	101	9806	0.24	PPBV	98
19) ACETONE	6.89	58	29004	5.11	PPBV #	89
26) ETHANOL	6.45	45	5845	1.66	PPBV #	45
38) METHYL ETHYL KETONE	9.36	72	974	0.22	PPBV #	61
60) TOLUENE	14.49	92	3060	0.13	PPBV	99

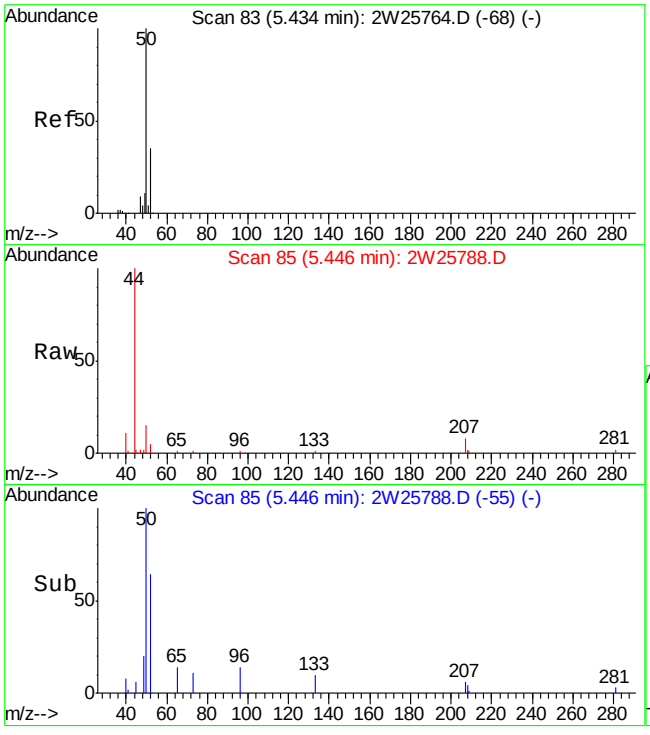
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25788.D Vial: 7
Acq On : 5 Oct 2009 1:13 pm Operator: YOUMINH
Sample : JA28238-8 Inst : MS2W
Misc : MS86174,V2W1086,400,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:31 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

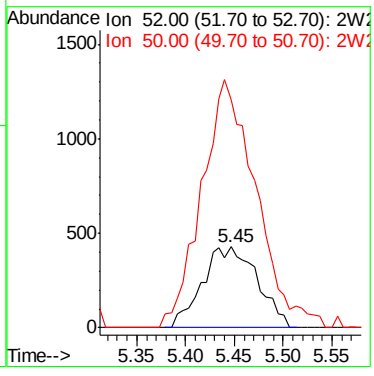


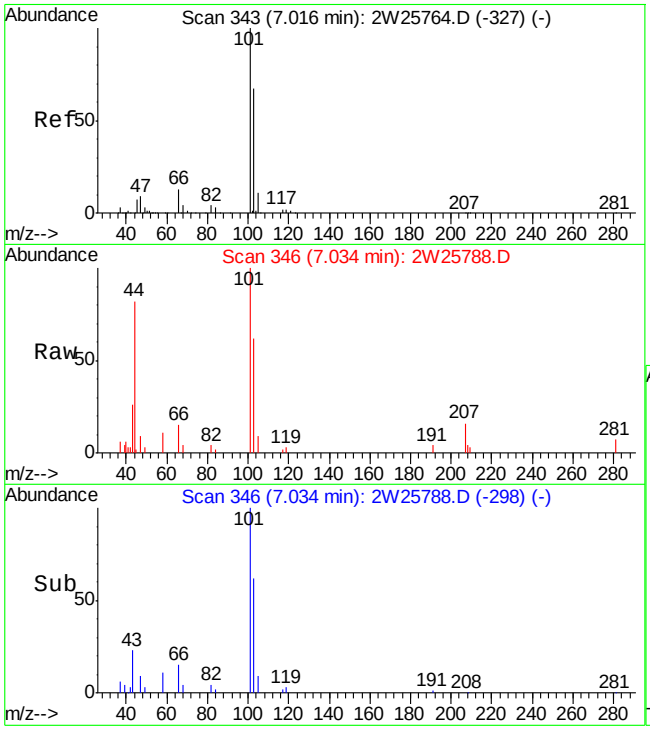


#9
CHLOROMETHANE
Concen: 0.51 PPBV
RT: 5.45 min Scan# 85
Delta R.T. 0.01 min
Lab File: 2W25788.D
Acq: 5 Oct 2009 1:13 pm

Tgt Ion: 52 Resp: 1675

Ion	Ratio	Lower	Upper
52	100		
50	260.4	256.7	296.7

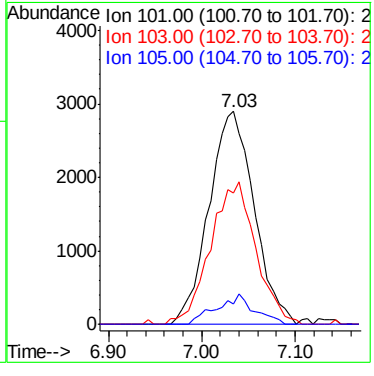


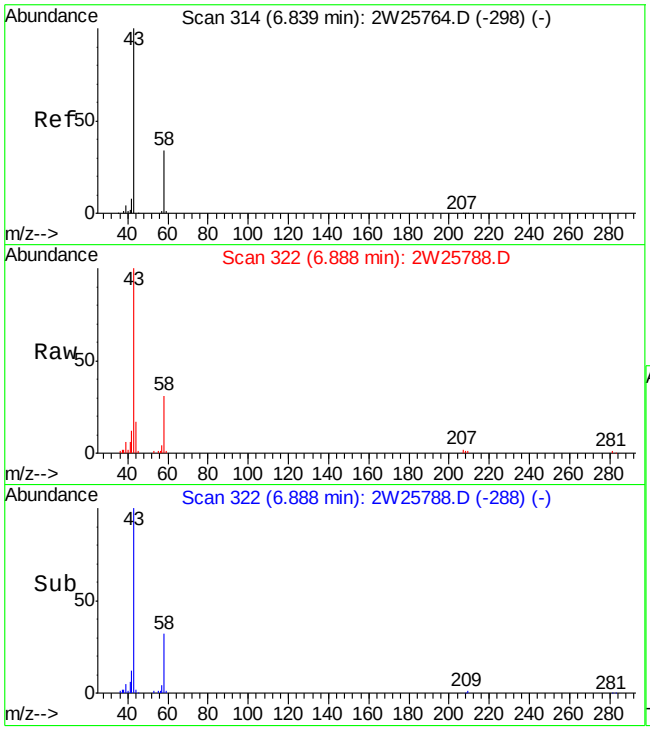


#17
TRICHLOROFLUOROMETHANE
Concen: 0.24 PPBV
RT: 7.03 min Scan# 346
Delta R.T. 0.02 min
Lab File: 2W25788.D
Acq: 5 Oct 2009 1:13 pm

Tgt Ion:101 Resp: 9806

Ion	Ratio	Lower	Upper
101	100		
103	67.2	46.0	86.0
105	11.8	0.0	31.0

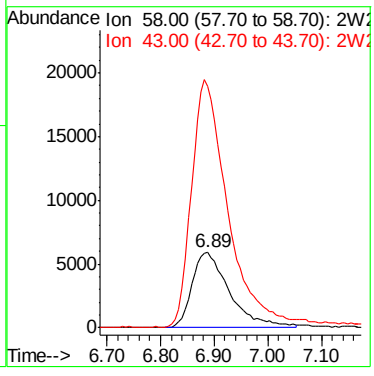


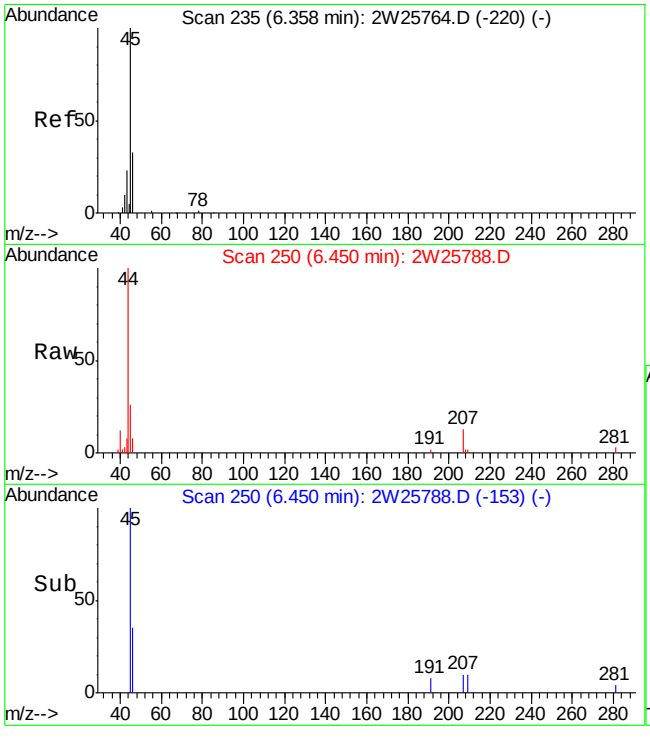


#19
ACETONE
Concen: 5.11 PPBV
RT: 6.89 min Scan# 322
Delta R.T. 0.05 min
Lab File: 2W25788.D
Acq: 5 Oct 2009 1:13 pm

Tgt Ion: 58 Resp: 29004

Ion	Ratio	Lower	Upper
58	100		
43	323.4	281.6	321.6#

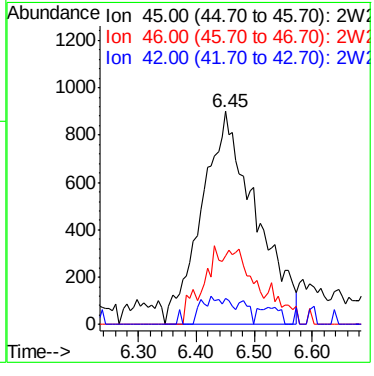


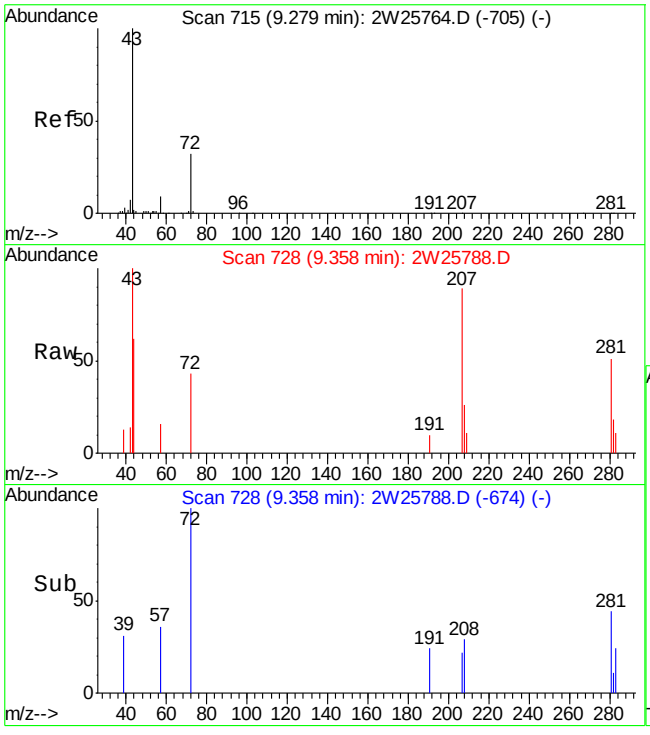


#26
ETHANOL
Concen: 1.66 PPBV
RT: 6.45 min Scan# 250
Delta R.T. 0.09 min
Lab File: 2W25788.D
Acq: 5 Oct 2009 1:13 pm

Tgt Ion: 45 Resp: 5845

Ion	Ratio	Lower	Upper
45	100		
46	0.0	17.8	57.8#
42	0.0	0.0	29.6

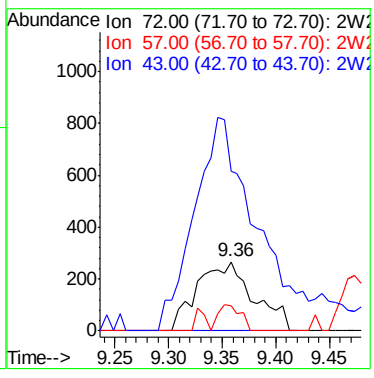


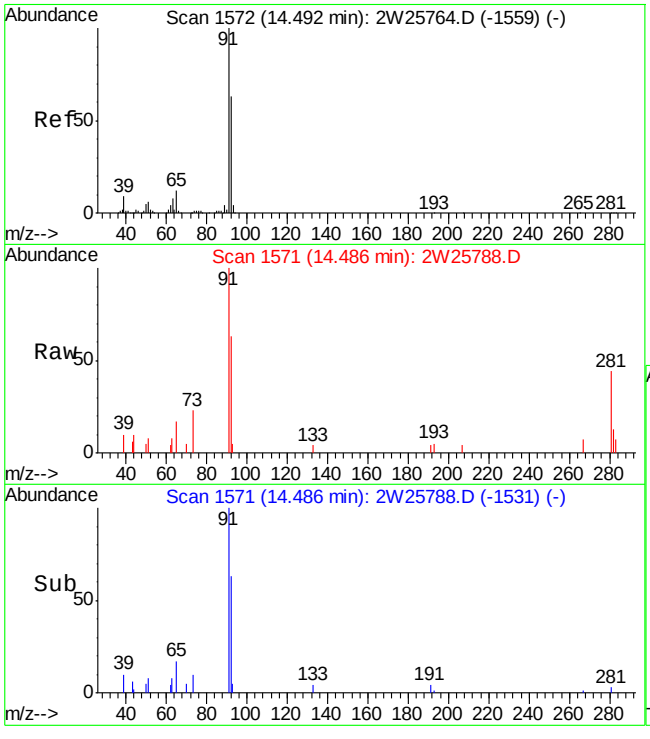


#38
METHYL ETHYL KETONE
Concen: 0.22 PPBV
RT: 9.36 min Scan# 728
Delta R.T. 0.08 min
Lab File: 2W25788.D
Acq: 5 Oct 2009 1:13 pm

Tgt Ion: 72 Resp: 974

Ion	Ratio	Lower	Upper
72	100		
57	36.5	8.3	48.3
43	232.0	294.9	334.9#

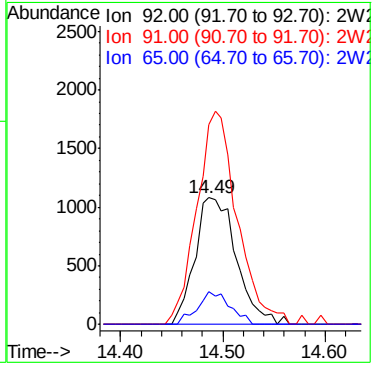




#60
TOLUENE
Concen: 0.13 PPBV
RT: 14.49 min Scan# 1571
Delta R.T. -0.01 min
Lab File: 2W25788.D
Acq: 5 Oct 2009 1:13 pm

Tgt Ion: 92 Resp: 3060

Ion	Ratio	Lower	Upper
92	100		
91	162.7	143.7	183.7
65	20.3	0.0	38.6



Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 10/08/09 13:06

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25789.D Vial: 8
Acq On : 5 Oct 2009 1:57 pm Operator: YOUMINH
Sample : JA28238-9 Inst : MS2W
Misc : MS86174,V2W1086,50,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

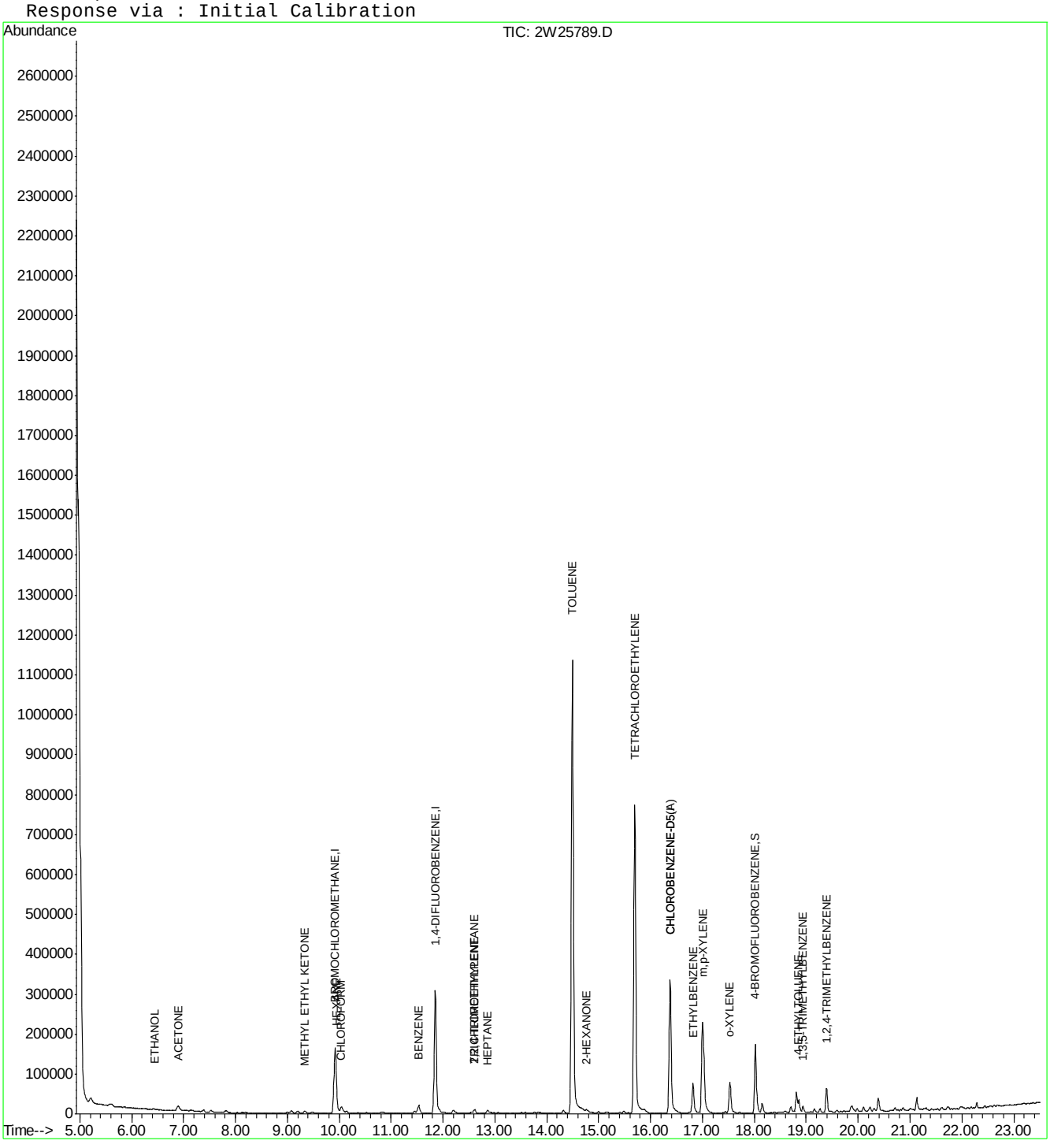
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	85220	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.85	114	394484	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	174261	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	174164	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	86693	5.07	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.40%			
Target Compounds						Qvalue
19) ACETONE	6.91	58	6581	1.17	PPBV #	63
26) ETHANOL	6.43	45	4587	1.32	PPBV	93
35) HEXANE	9.95	57	5171	0.36	PPBV	91
38) METHYL ETHYL KETONE	9.34	72	2982	0.67	PPBV	96
41) CHLOROFORM	10.04	83	17997	0.76	PPBV	99
47) BENZENE	11.53	78	28375	0.78	PPBV	99
50) TRICHLOROETHYLENE	12.60	95	1027	0.07	PPBV	92
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	10425	0.25	PPBV	90
56) HEPTANE	12.86	43	3685	0.26	PPBV	97
60) TOLUENE	14.49	92	817305m	34.33	PPBV	
64) 2-HEXANONE	14.77	58	1591	0.21	PPBV	99
65) TETRACHLOROETHYLENE	15.70	164	292630	17.28	PPBV	98
71) ETHYLBENZENE	16.82	91	88872	2.11	PPBV	98
72) m,p-XYLENE	17.00	106	140722	8.57	PPBV	92
73) o-XYLENE	17.53	106	32857	2.12	PPBV	94
82) 4-ETHYLTOLUENE	18.86	105	23492	0.74	PPBV	99
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	12126	0.42	PPBV	95
85) 1,2,4-TRIMETHYLBENZENE	19.39	105	45738	1.81	PPBV #	28

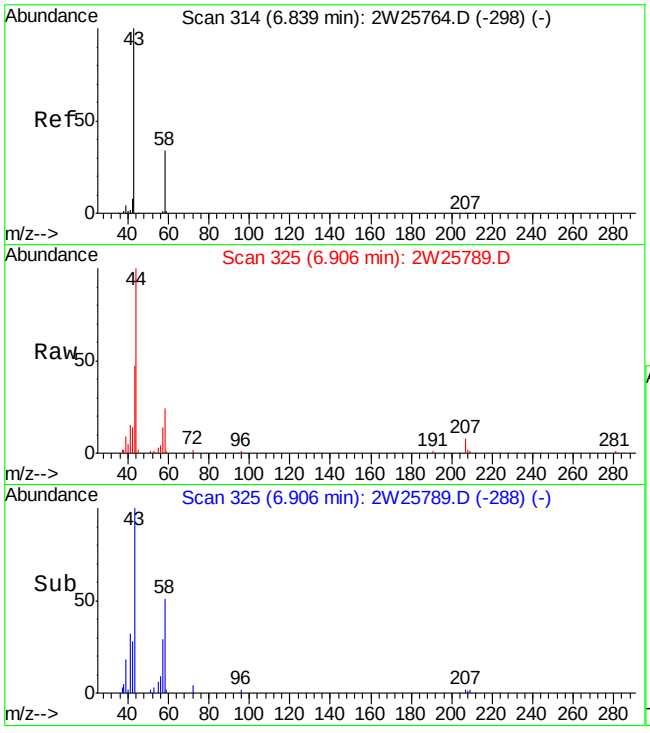
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25789.D Vial: 8
Acq On : 5 Oct 2009 1:57 pm Operator: YOUMINH
Sample : JA28238-9 Inst : MS2W
Misc : MS86174,V2W1086,50,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:32 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

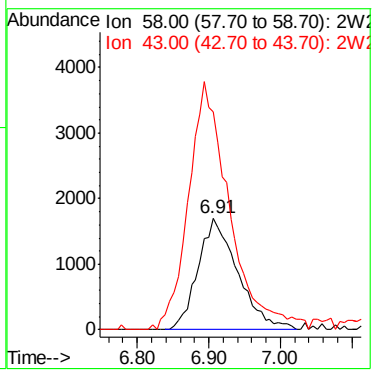


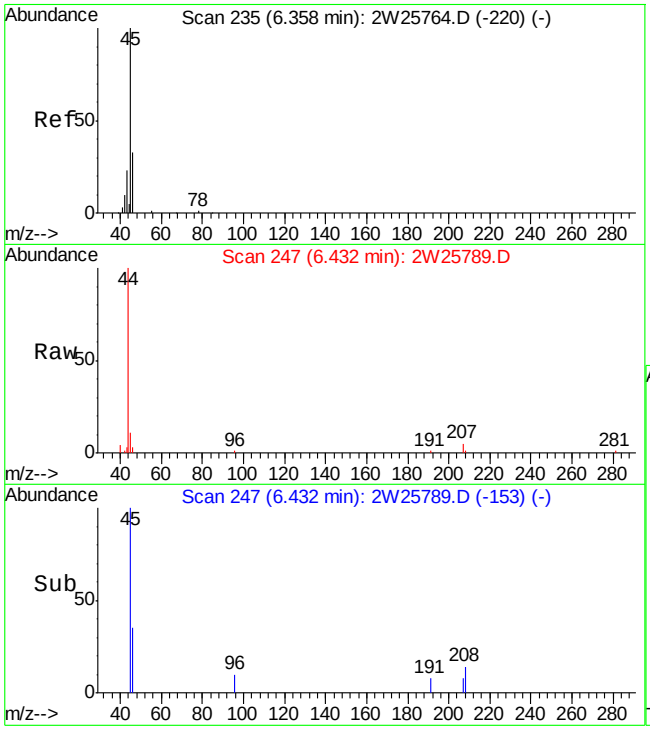


#19
ACETONE
Concen: 1.17 PPBV
RT: 6.91 min Scan# 325
Delta R.T. 0.07 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 58 Resp: 6581

Ion	Ratio	Lower	Upper
58	100		
43	228.4	281.6	321.6#

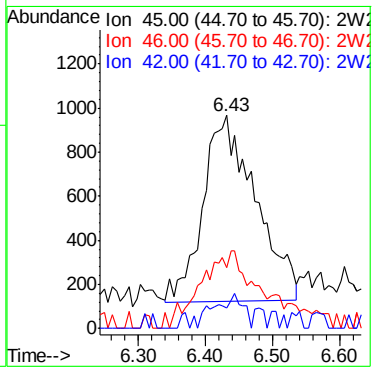


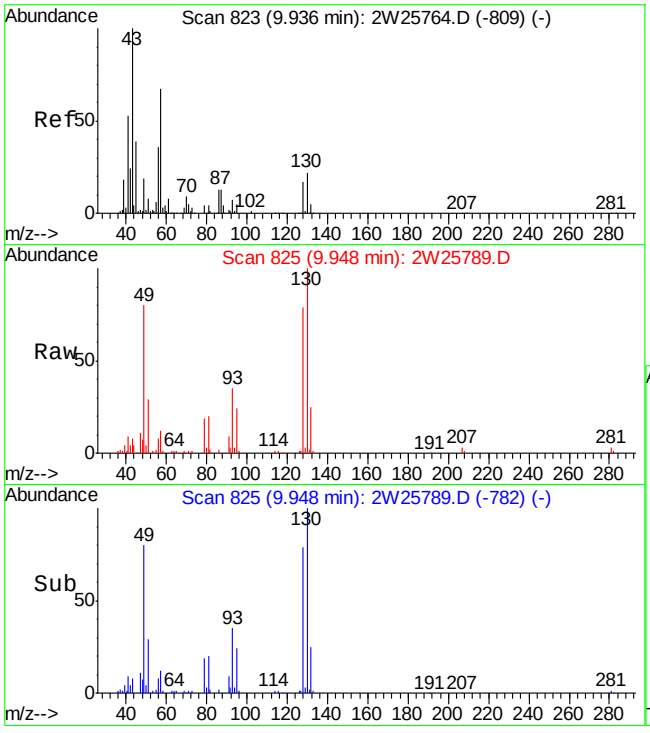


#26
ETHANOL
Concen: 1.32 PPBV
RT: 6.43 min Scan# 247
Delta R.T. 0.07 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 45 Resp: 4587

Ion	Ratio	Lower	Upper
45	100		
46	33.1	17.8	57.8
42	10.6	0.0	29.6

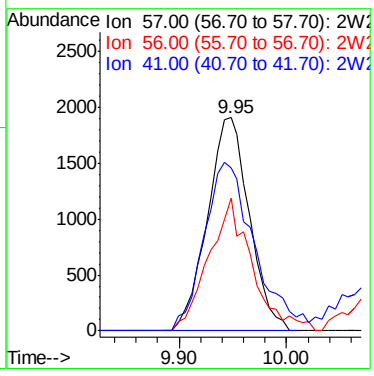


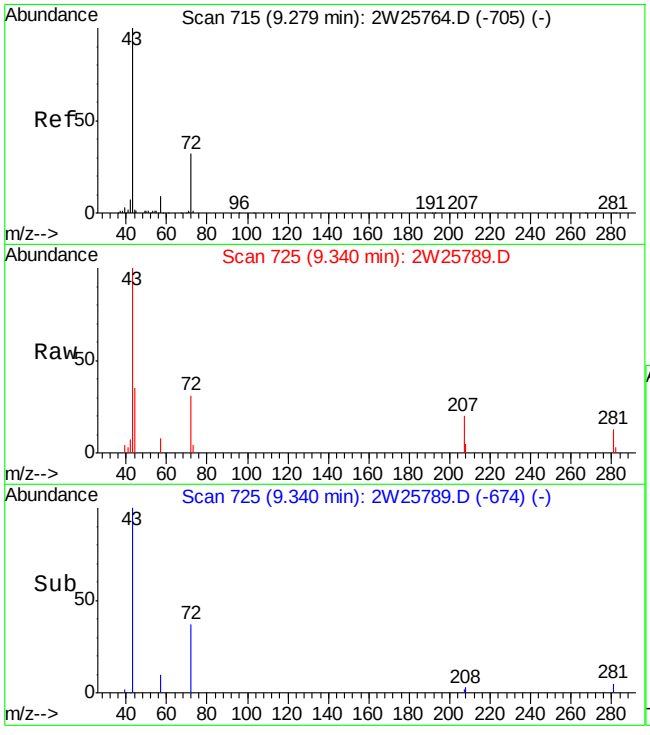


#35
HEXANE
Concen: 0.36 PPBV
RT: 9.95 min Scan# 825
Delta R.T. 0.01 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 57 Resp: 5171

Ion	Ratio	Lower	Upper
57	100		
56	64.2	32.6	72.6
41	94.7	80.6	120.6

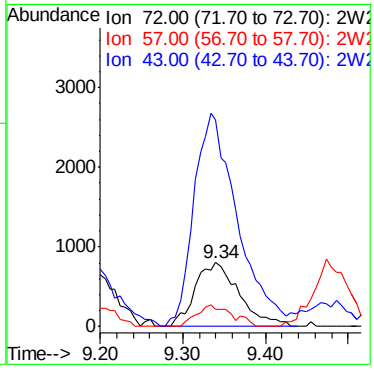


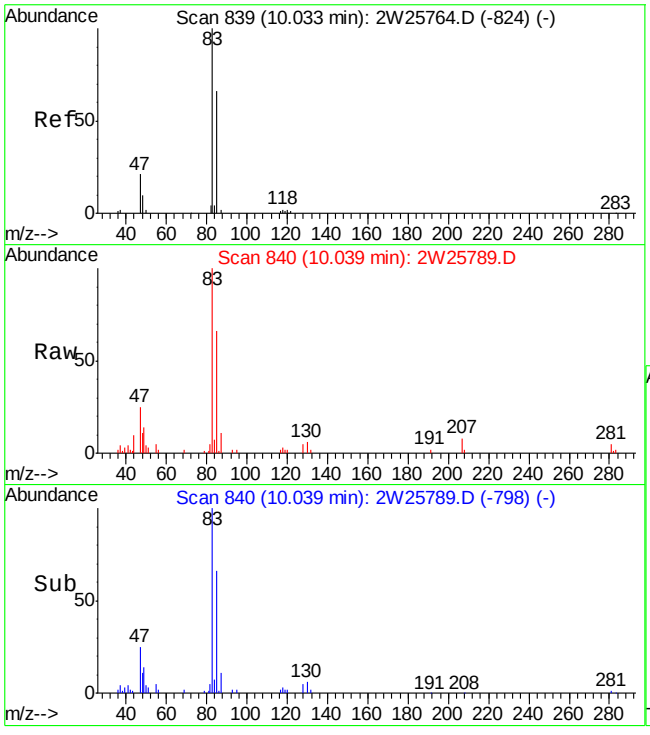


#38
METHYL ETHYL KETONE
Concen: 0.67 PPBV
RT: 9.34 min Scan# 725
Delta R.T. 0.06 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 72 Resp: 2982

Ion	Ratio	Lower	Upper
72	100		
57	27.4	8.3	48.3
43	323.5	294.9	334.9

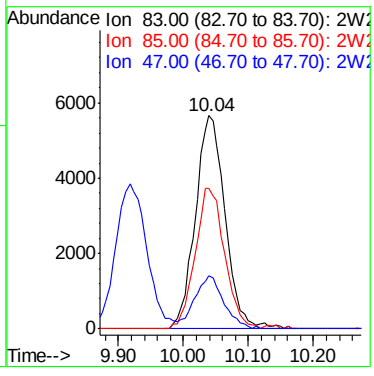


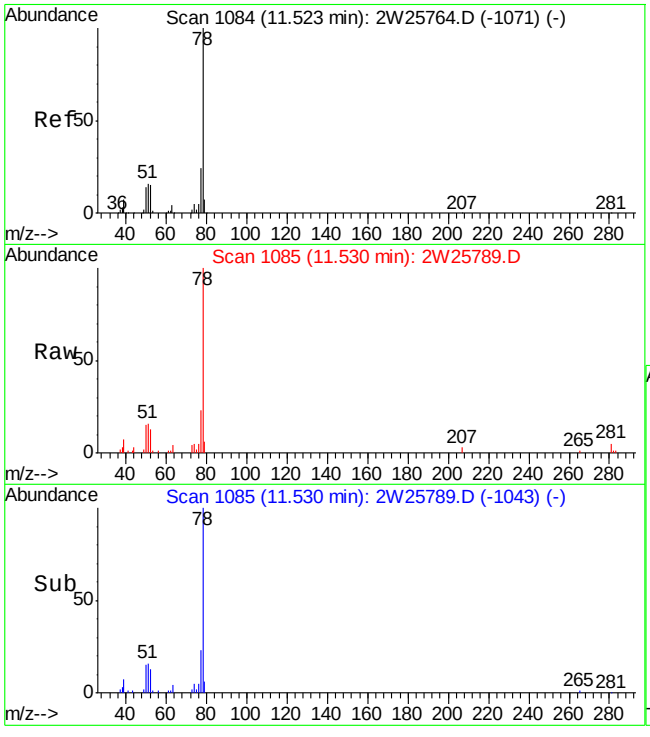


#41
CHLOROFORM
Concen: 0.76 PPBV
RT: 10.04 min Scan# 840
Delta R.T. 0.01 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 83 Resp: 17997

Ion	Ratio	Lower	Upper
83	100		
85	64.9	44.9	84.9
47	24.2	2.0	42.0

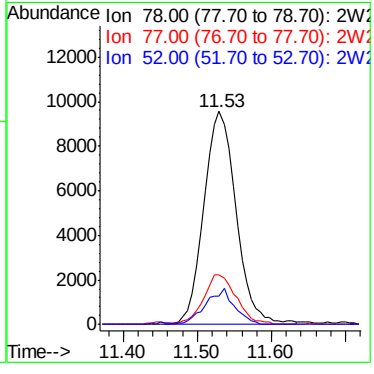


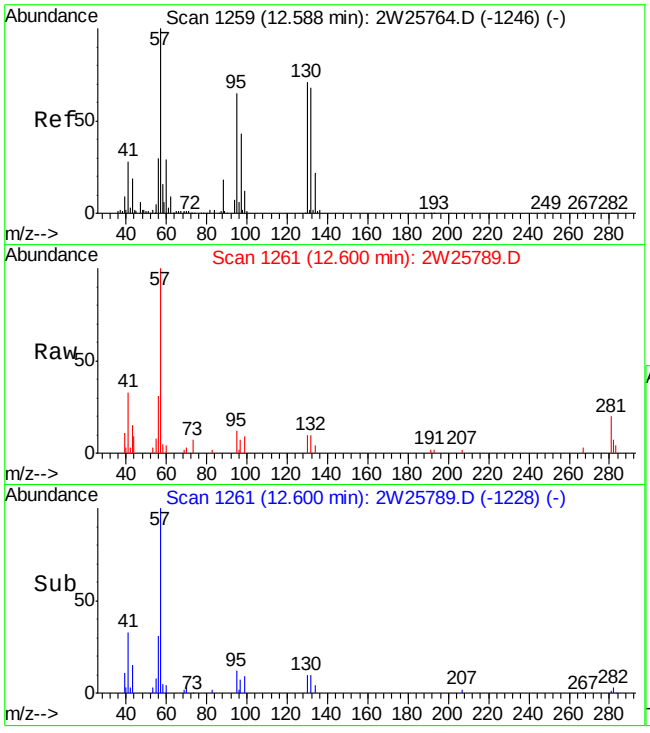


#47
BENZENE
Concen: 0.78 PPBV
RT: 11.53 min Scan# 1085
Delta R.T. 0.01 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 78 Resp: 28375

Ion	Ratio	Lower	Upper
78	100		
77	23.8	3.5	43.5
52	14.9	0.0	34.5

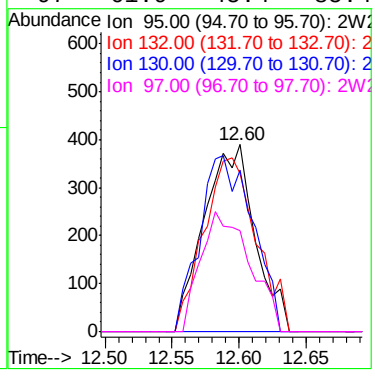


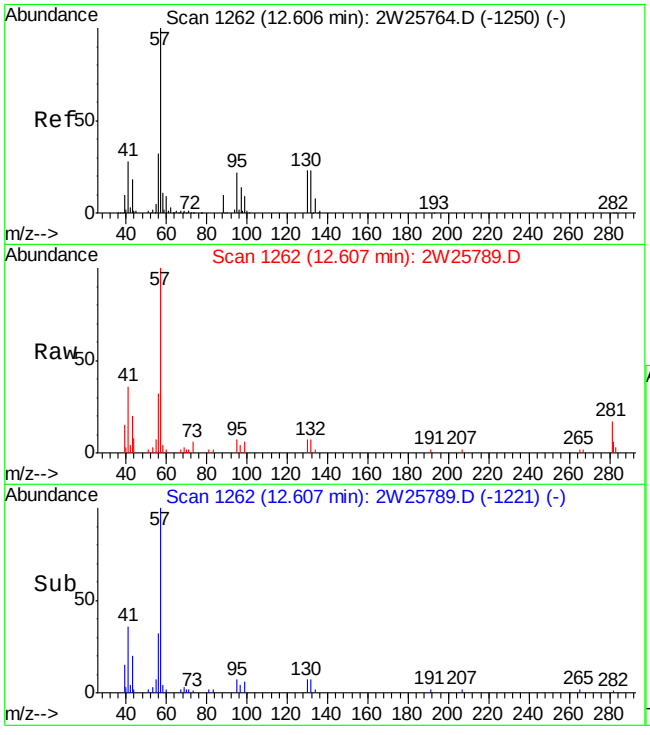


#50
TRICHLOROETHYLENE
Concen: 0.07 PPBV
RT: 12.60 min Scan# 1261
Delta R.T. 0.01 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 95 Resp: 1027

Ion	Ratio	Lower	Upper
95	100		
132	95.8	83.7	123.7
130	98.1	88.1	128.1
97	61.9	45.4	85.4

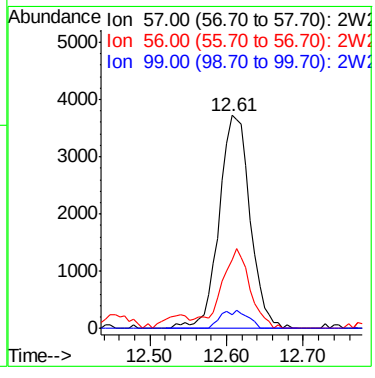


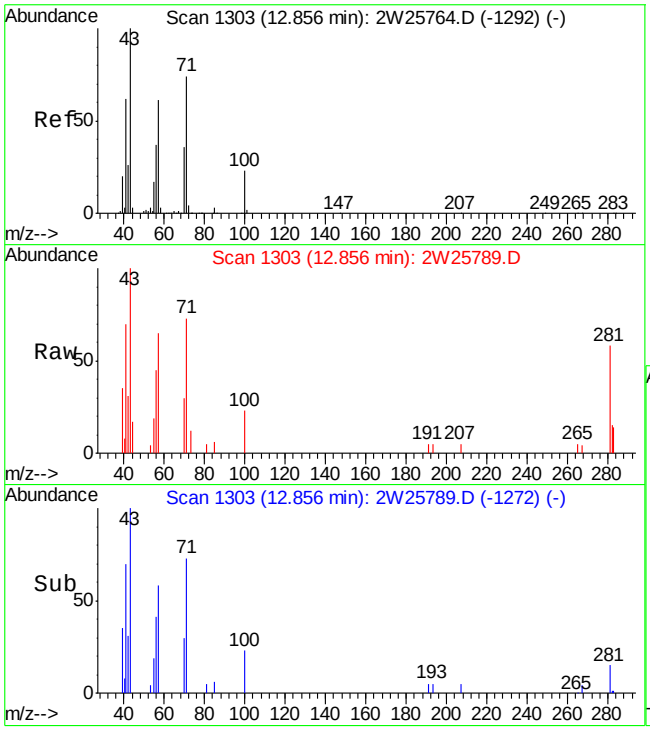


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.25 PPBV
RT: 12.61 min Scan# 1262
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 57 Resp: 10425

Ion	Ratio	Lower	Upper
57	100		
56	35.1	11.2	51.2
99	3.8	0.0	30.1

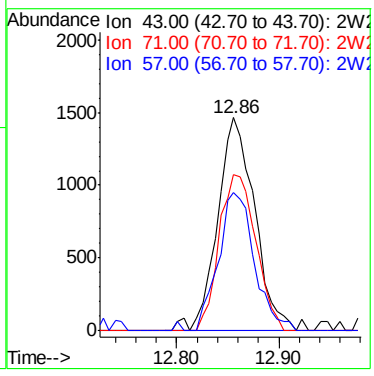


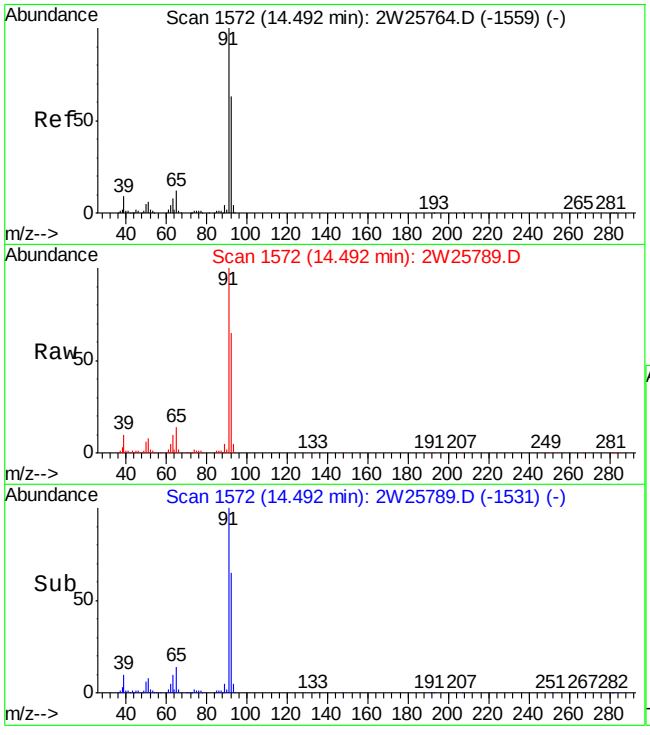


#56
HEPTANE
Concen: 0.26 PPBV
RT: 12.86 min Scan# 1303
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 43 Resp: 3685

Ion	Ratio	Lower	Upper
43	100		
71	72.6	54.6	94.6
57	63.4	40.6	80.6

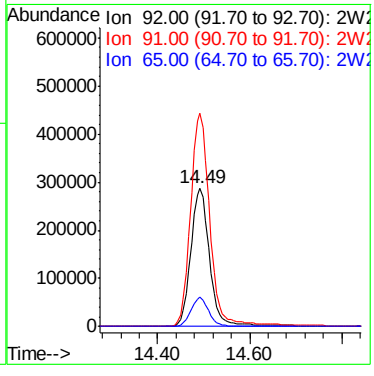


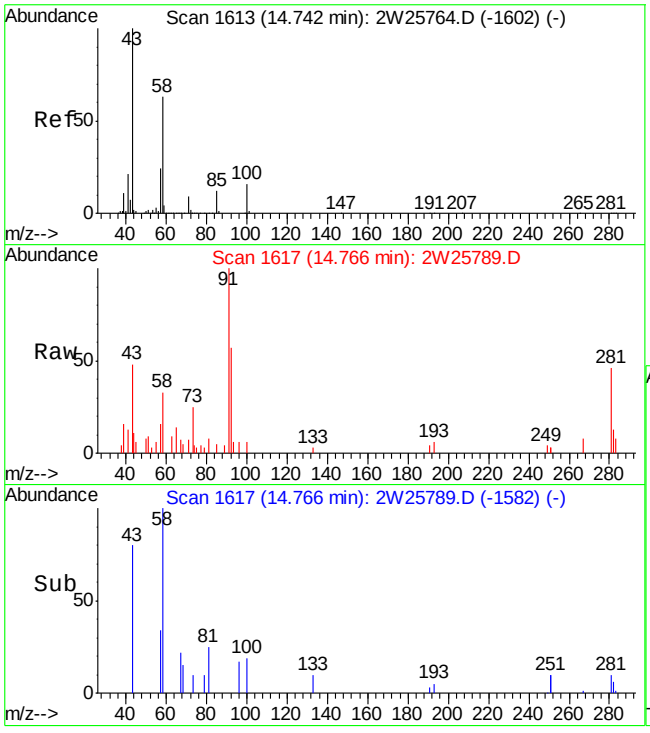


#60
TOLUENE
Concen: 34.33 PPBV m
RT: 14.49 min Scan# 1572
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 92 Resp: 817305

Ion	Ratio	Lower	Upper
92	100		
91	0.0	143.7	183.7#
65	0.0	0.0	38.6

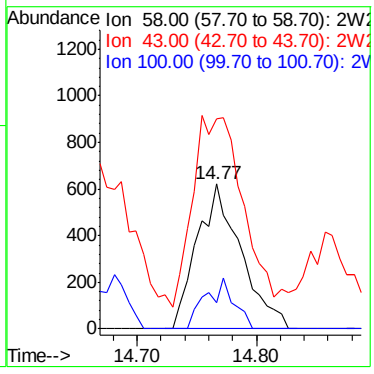


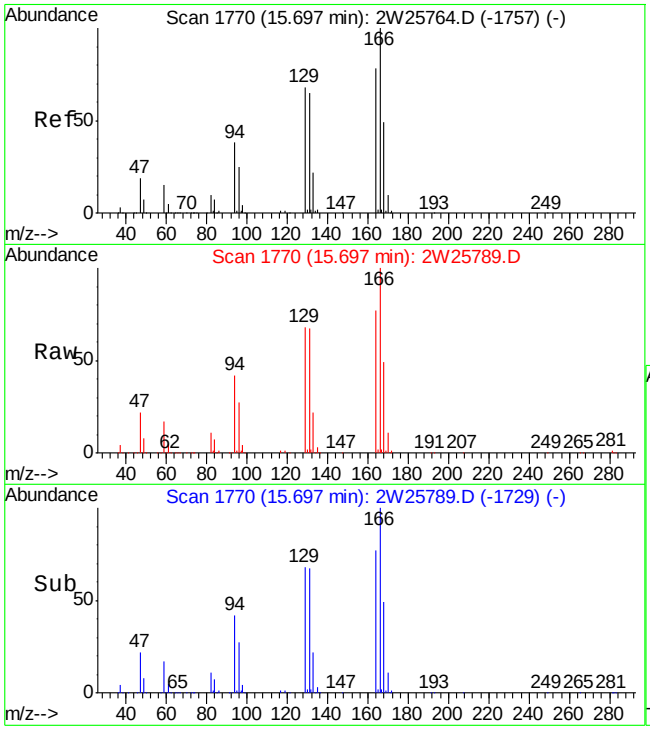


#64
2-HEXANONE
Concen: 0.21 PPBV
RT: 14.77 min Scan# 1617
Delta R.T. 0.02 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 58 Resp: 1591

Ion	Ratio	Lower	Upper
58	100		
43	162.0	141.7	181.7
100	22.6	5.5	45.5

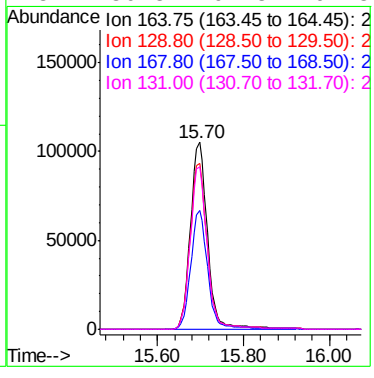


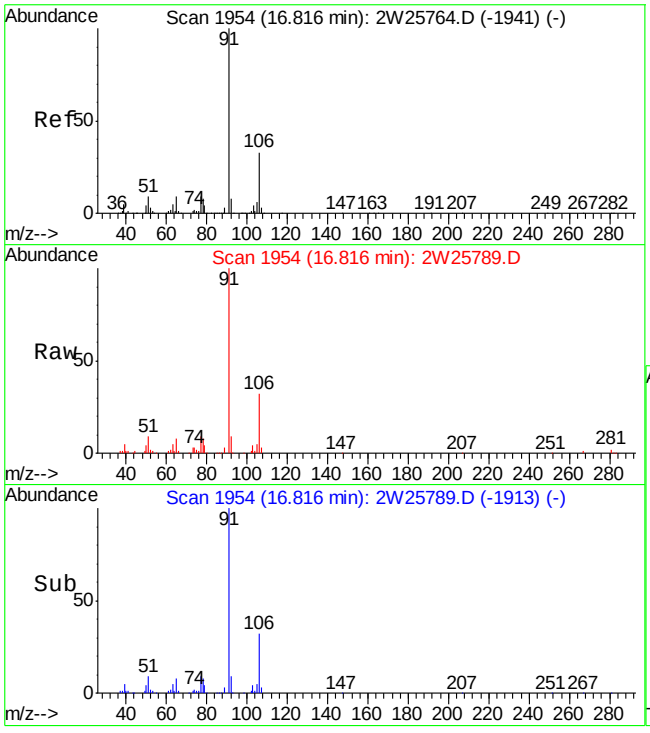


#65
TETRACHLOROETHYLENE
Concen: 17.28 PPBV
RT: 15.70 min Scan# 1770
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion:164 Resp: 292630

Ion	Ratio	Lower	Upper
164	100		
129	89.0	67.5	107.5
168	61.9	42.6	82.6
131	86.8	64.8	104.8

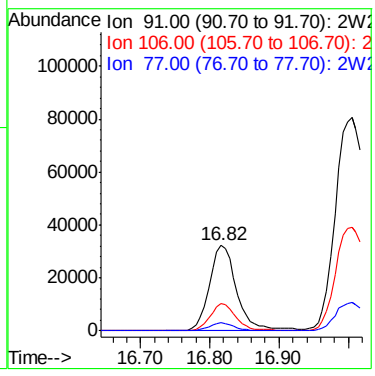


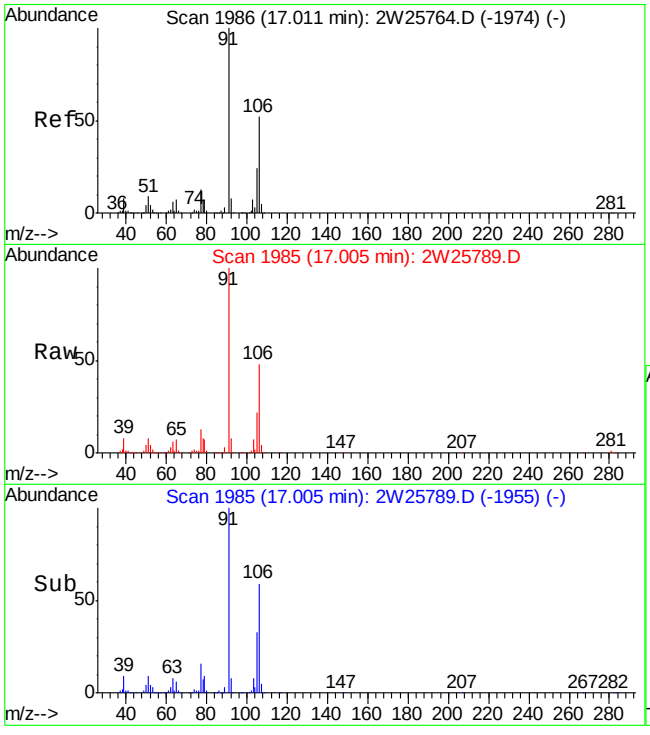


#71
ETHYLBENZENE
Concen: 2.11 PPBV
RT: 16.82 min Scan# 1954
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion: 91 Resp: 88872

Ion	Ratio	Lower	Upper
91	100		
106	30.7	12.4	52.4
77	8.7	0.0	28.6

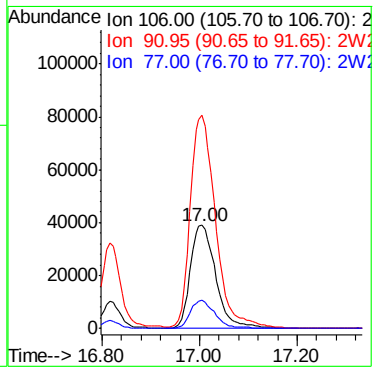


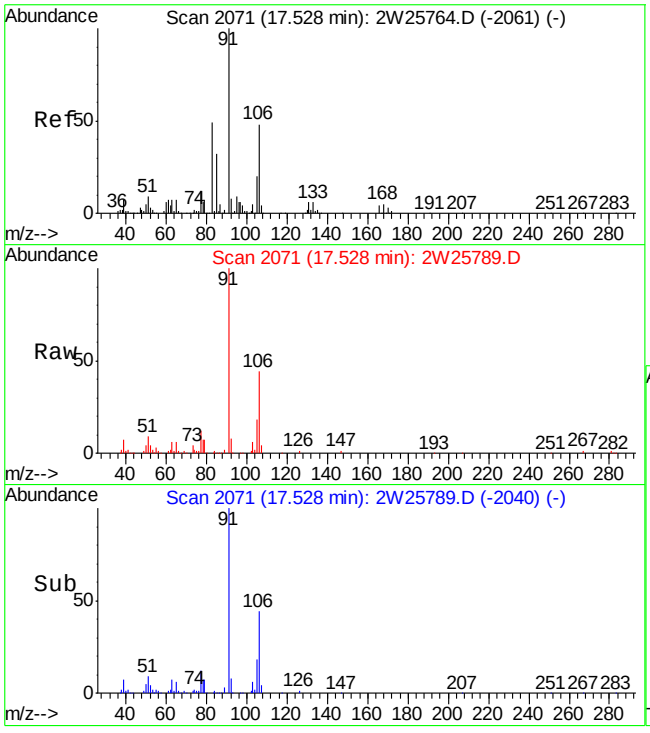


#72
m,p-XYLENE
Concen: 8.57 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.01 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion:106 Resp: 140722

Ion	Ratio	Lower	Upper
106	100		
91	207.0	155.5	233.3
77	27.6	20.4	30.6

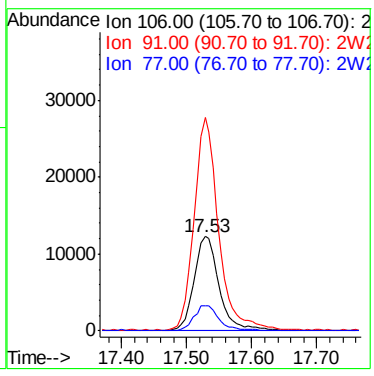


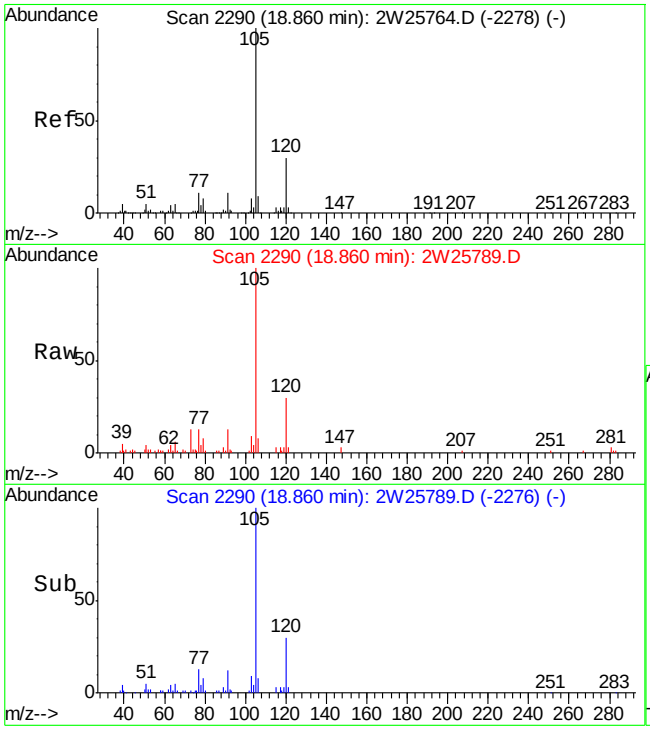


#73
o-XYLENE
Concen: 2.12 PPBV
RT: 17.53 min Scan# 2071
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion:106 Resp: 32857

Ion	Ratio	Lower	Upper
106	100		
91	218.9	189.0	229.0
77	26.4	5.7	45.7

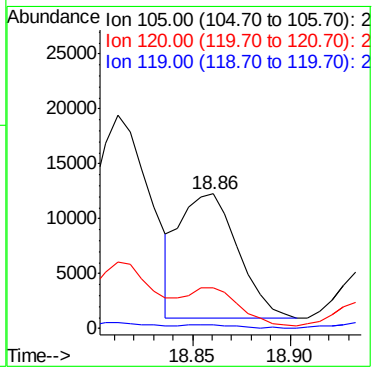


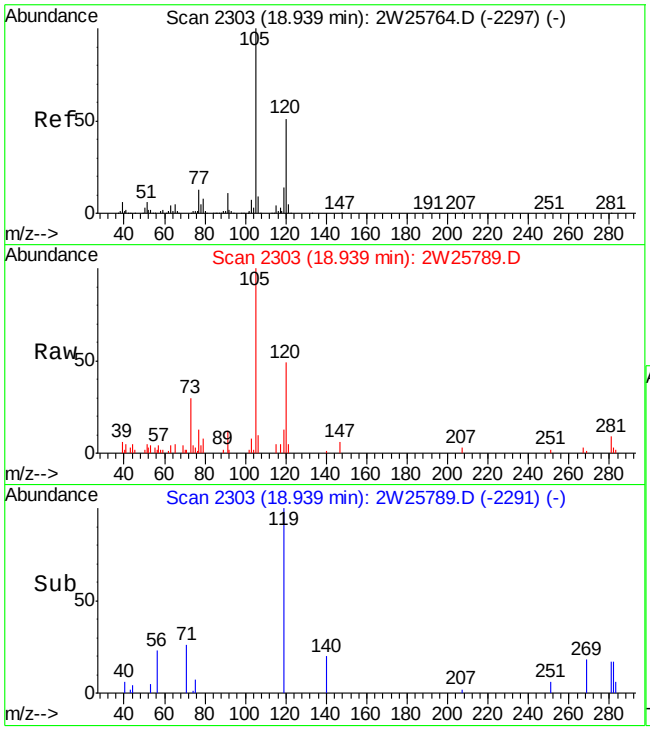


#82
4-ETHYLTOLUENE
Concen: 0.74 PPBV
RT: 18.86 min Scan# 2290
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion:105 Resp: 23492

Ion	Ratio	Lower	Upper
105	100		
120	29.6	10.4	50.4
119	2.8	0.0	22.6

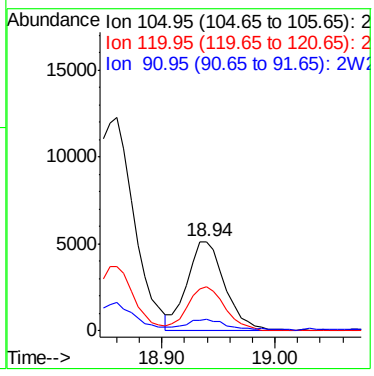


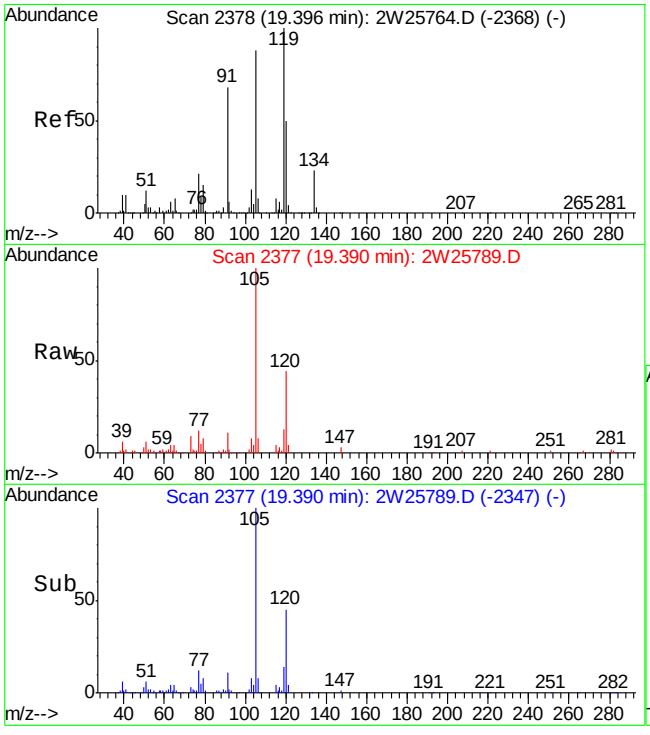


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.42 PPBV
RT: 18.94 min Scan# 2303
Delta R.T. 0.00 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion:105 Resp: 12126

Ion	Ratio	Lower	Upper
105	100		
120	48.1	30.1	70.1
91	15.3	0.0	30.6

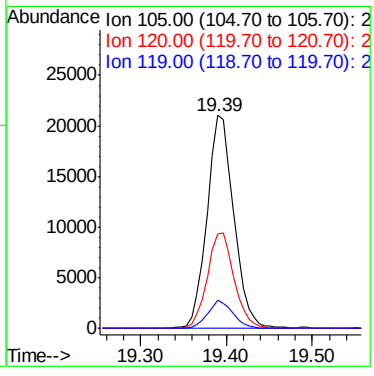




#85
1,2,4-TRIMETHYLBENZENE
Concen: 1.81 PPBV
RT: 19.39 min Scan# 2377
Delta R.T. -0.01 min
Lab File: 2W25789.D
Acq: 5 Oct 2009 1:57 pm

Tgt Ion:105 Resp: 45738

Ion	Ratio	Lower	Upper
105	100		
120	44.9	38.0	78.0
119	12.6	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25790.D Vial: 9
Acq On : 5 Oct 2009 2:41 pm Operator: YOUMINH
Sample : JA28238-10 Inst : MS2W
Misc : MS86174,V2W1086,50,,,,1.53 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:09 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

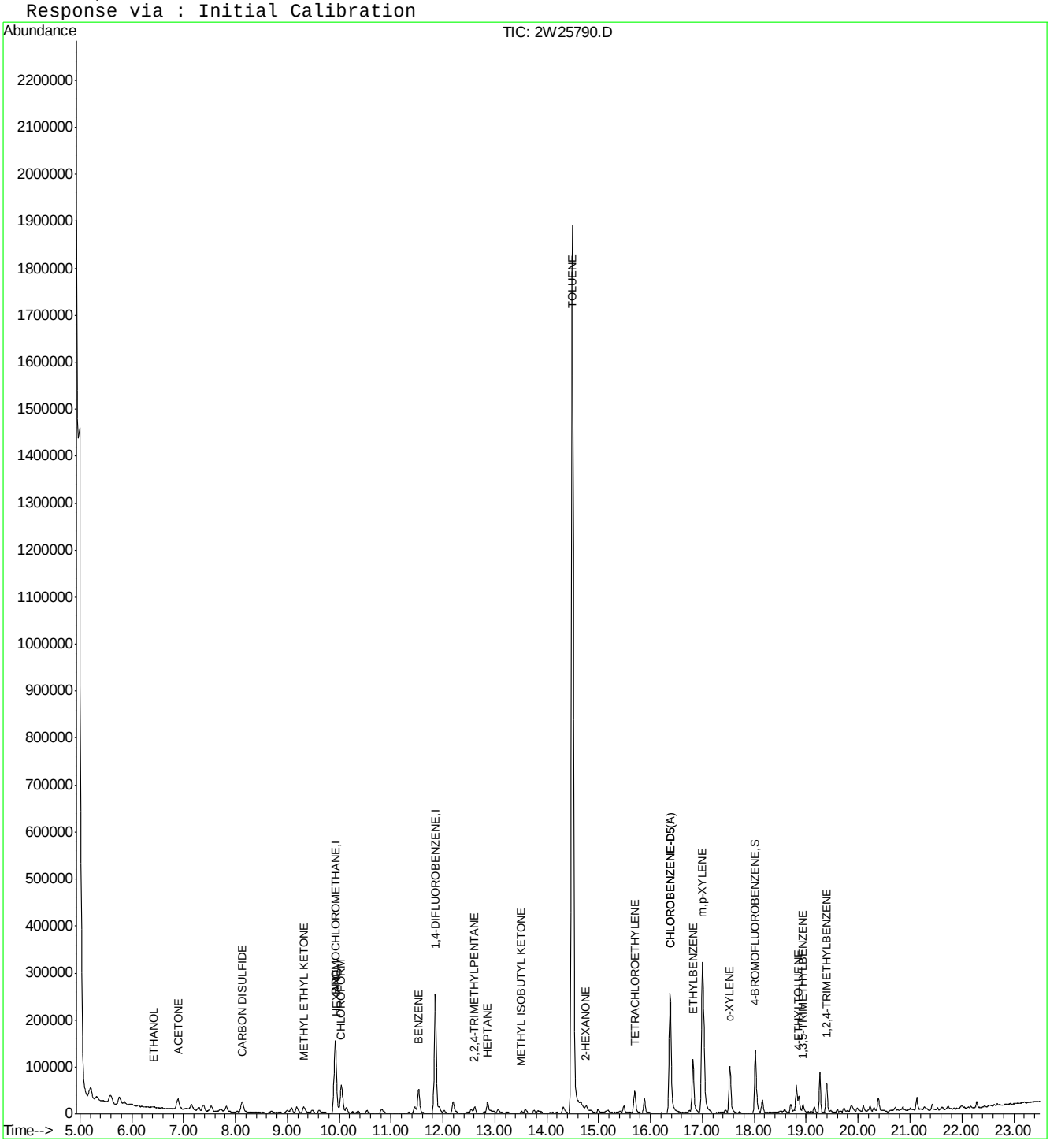
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	73146	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	310454	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	133435	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	133353	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	66790	5.10	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 102.00%			
Target Compounds						Qvalue
19) ACETONE	6.90	58	15440	3.21	PPBV #	32
25) CARBON DISULFIDE	8.13	76	59261	2.04	PPBV	95
26) ETHANOL	6.42	45	5567	1.87	PPBV	75
35) HEXANE	9.95	57	11764	0.96	PPBV	93
38) METHYL ETHYL KETONE	9.31	72	9278	2.43	PPBV #	89
41) CHLOROFORM	10.04	83	68913	3.38	PPBV	99
47) BENZENE	11.53	78	68664	2.40	PPBV	100
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	13961	0.42	PPBV	91
56) HEPTANE	12.86	43	10745	0.95	PPBV	99
58) METHYL ISOBUTYL KETONE	13.51	43	2718	0.21	PPBV	96
60) TOLUENE	14.49	92	1370119	73.14	PPBV	92
64) 2-HEXANONE	14.75	58	3369	0.58	PPBV	93
65) TETRACHLOROETHYLENE	15.70	164	16287	1.26	PPBV	98
71) ETHYLBENZENE	16.82	91	134321	4.16	PPBV	99
72) m,p-XYLENE	17.00	106	189861	15.10	PPBV	93
73) o-XYLENE	17.53	106	41280	3.48	PPBV	94
82) 4-ETHYLTOLUENE	18.85	105	27014	1.11	PPBV	92
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	12885	0.58	PPBV	96
85) 1,2,4-TRIMETHYLBENZENE	19.39	105	48997	2.53	PPBV #	28

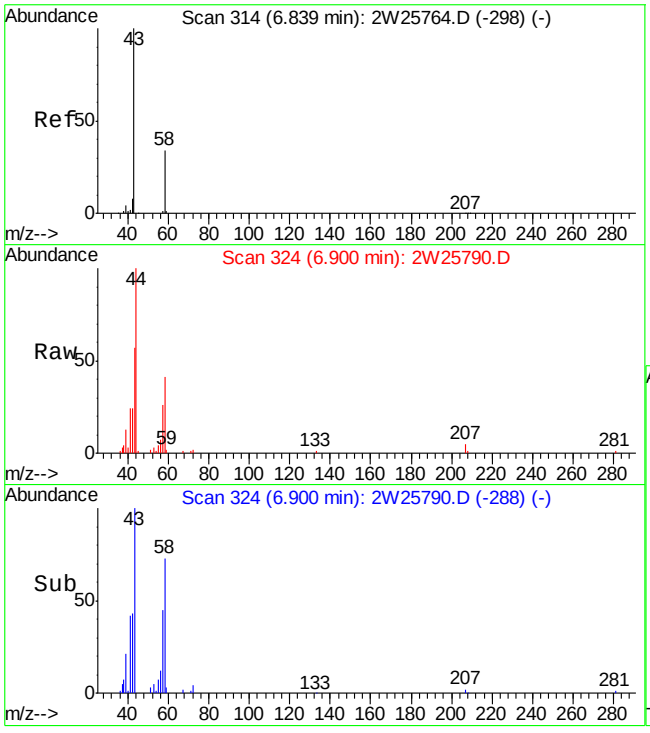
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25790.D Vial: 9
Acq On : 5 Oct 2009 2:41 pm Operator: YOUMINH
Sample : JA28238-10 Inst : MS2W
Misc : MS86174,V2W1086,50,,,,1.53 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:33 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

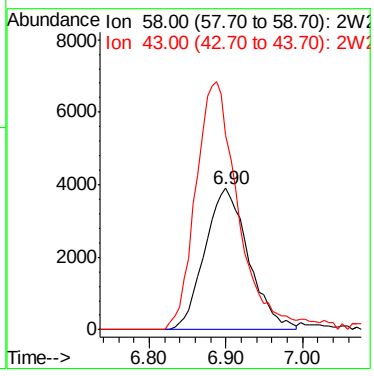


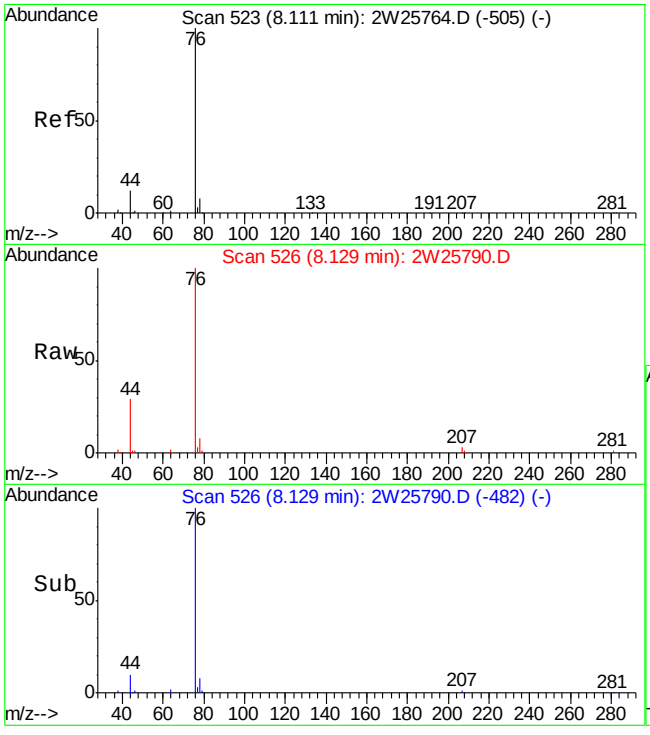


#19
ACETONE
Concen: 3.21 PPBV
RT: 6.90 min Scan# 324
Delta R.T. 0.06 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 58 Resp: 15440

Ion	Ratio	Lower	Upper
58	100		
43	167.9	281.6	321.6#

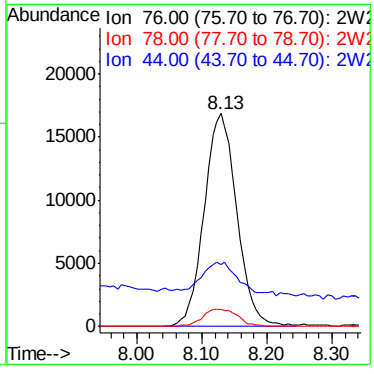


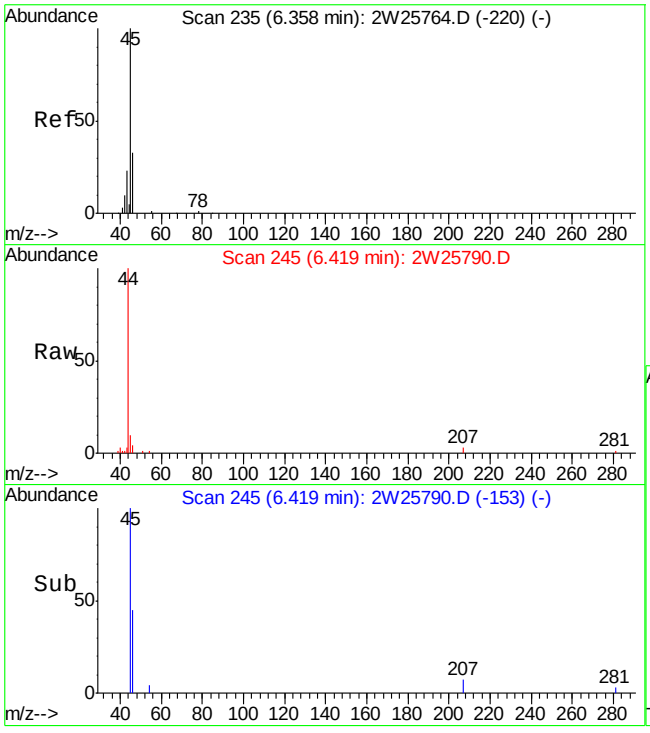


#25
CARBON DISULFIDE
Concen: 2.04 PPBV
RT: 8.13 min Scan# 526
Delta R.T. 0.02 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 76 Resp: 59261

Ion	Ratio	Lower	Upper
76	100		
78	8.7	0.0	29.3
44	14.8	0.0	32.1

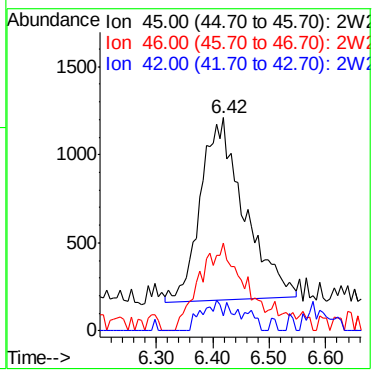


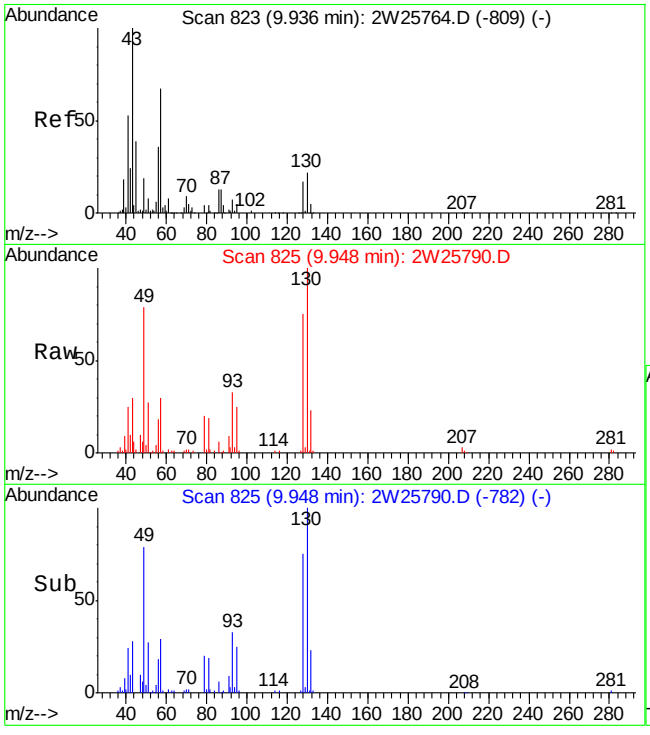


#26
ETHANOL
Concen: 1.87 PPBV
RT: 6.42 min Scan# 245
Delta R.T. 0.06 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 45 Resp: 5567

Ion	Ratio	Lower	Upper
45	100		
46	19.6	17.8	57.8
42	7.6	0.0	29.6

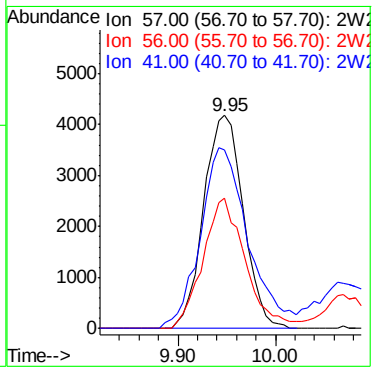


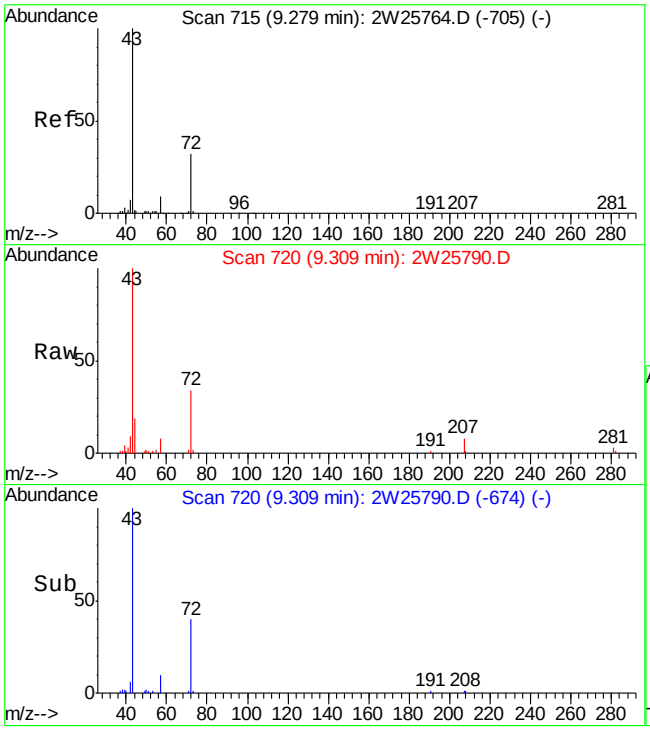


#35
HEXANE
Concen: 0.96 PPBV
RT: 9.95 min Scan# 825
Delta R.T. 0.01 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 57 Resp: 11764

Ion	Ratio	Lower	Upper
57	100		
56	65.5	32.6	72.6
41	102.5	80.6	120.6

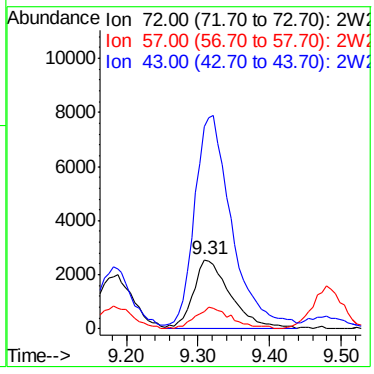


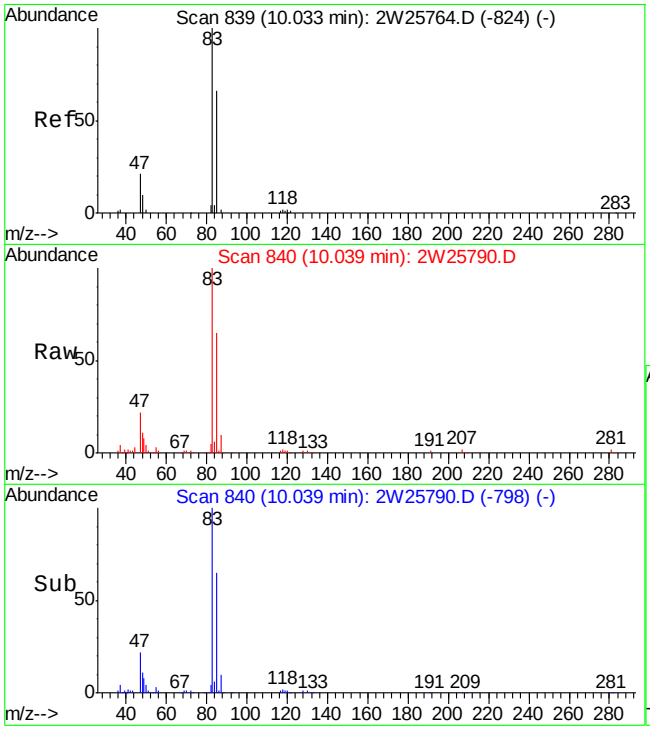


#38
METHYL ETHYL KETONE
Concen: 2.43 PPBV
RT: 9.31 min Scan# 720
Delta R.T. 0.03 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 72 Resp: 9278

Ion	Ratio	Lower	Upper
72	100		
57	24.7	8.3	48.3
43	292.7	294.9	334.9#

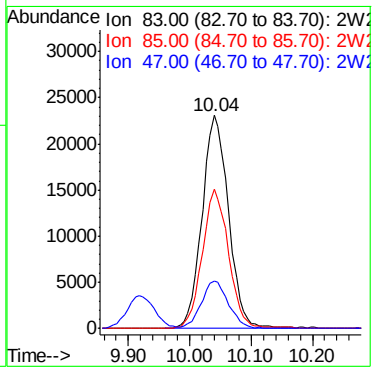


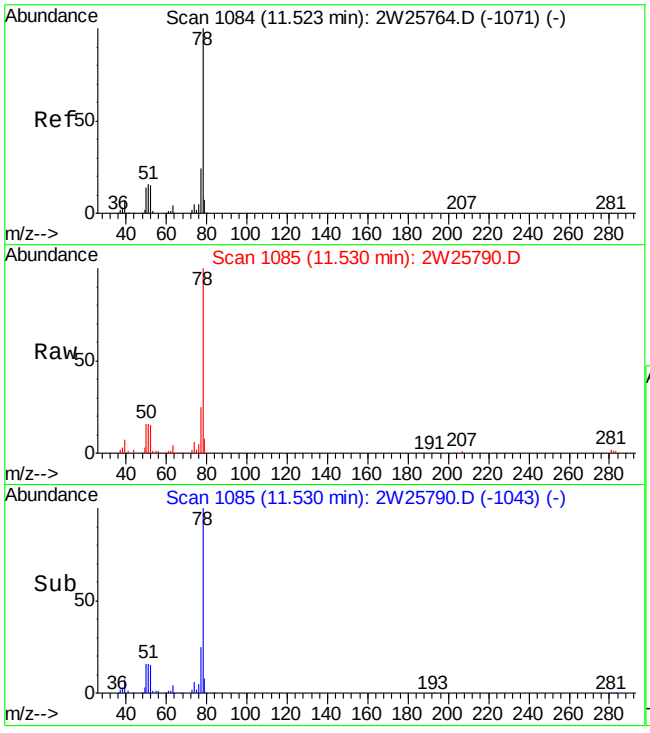


#41
CHLOROFORM
Concen: 3.38 PPBV
RT: 10.04 min Scan# 840
Delta R.T. 0.01 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 83 Resp: 68913

Ion	Ratio	Lower	Upper
83	100		
85	65.0	44.9	84.9
47	22.8	2.0	42.0

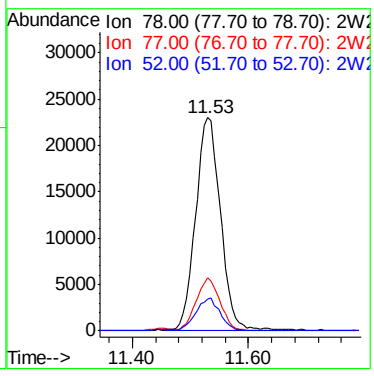


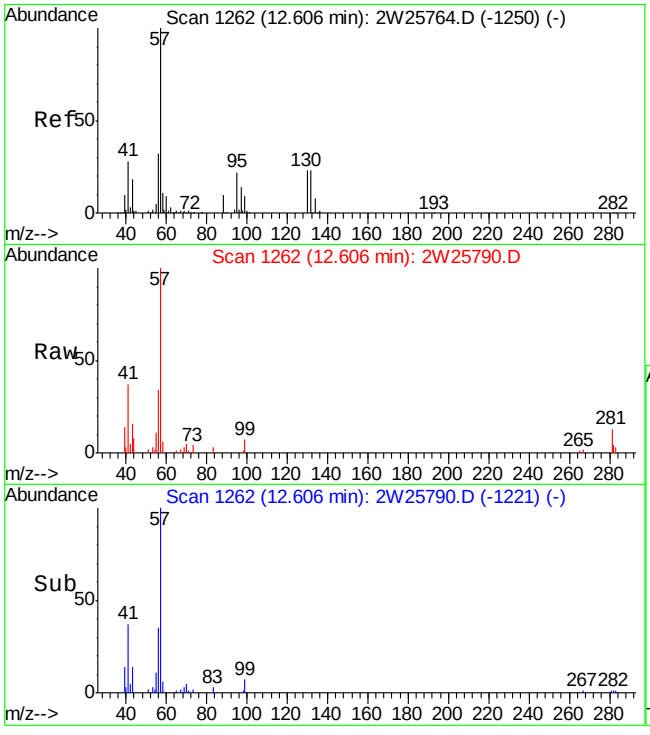


#47
BENZENE
Concen: 2.40 PPBV
RT: 11.53 min Scan# 1085
Delta R.T. 0.01 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 78 Resp: 68664

Ion	Ratio	Lower	Upper
78	100		
77	23.3	3.5	43.5
52	14.7	0.0	34.5

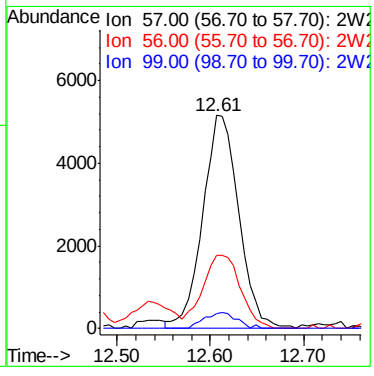


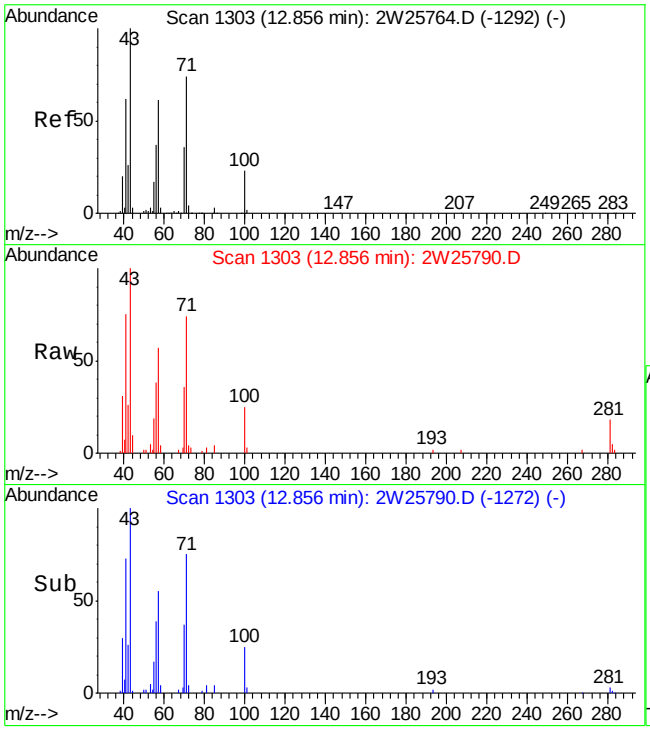


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.42 PPBV
RT: 12.61 min Scan# 1262
Delta R.T. 0.00 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 57 Resp: 13961

Ion	Ratio	Lower	Upper
57	100		
56	36.2	11.2	51.2
99	6.8	0.0	30.1

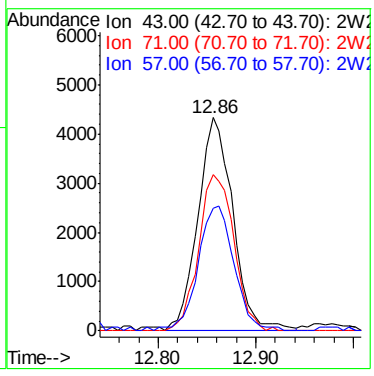


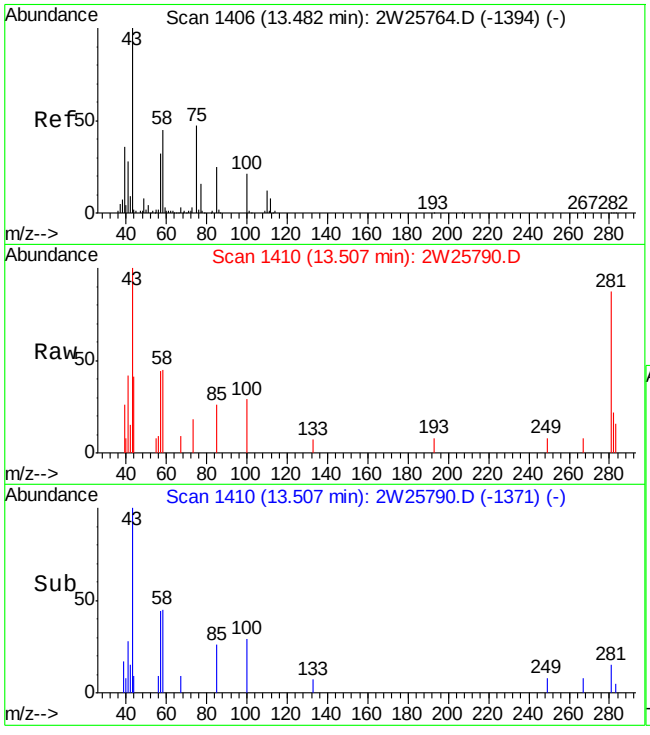


#56
HEPTANE
Concen: 0.95 PPBV
RT: 12.86 min Scan# 1303
Delta R.T. 0.00 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 43 Resp: 10745

Ion	Ratio	Lower	Upper
43	100		
71	74.0	54.6	94.6
57	60.3	40.6	80.6

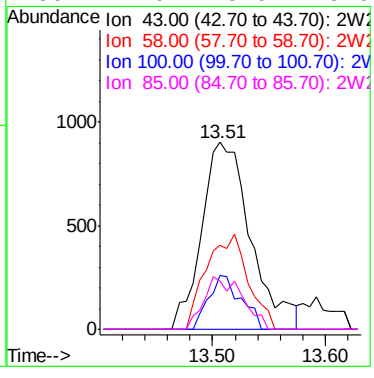


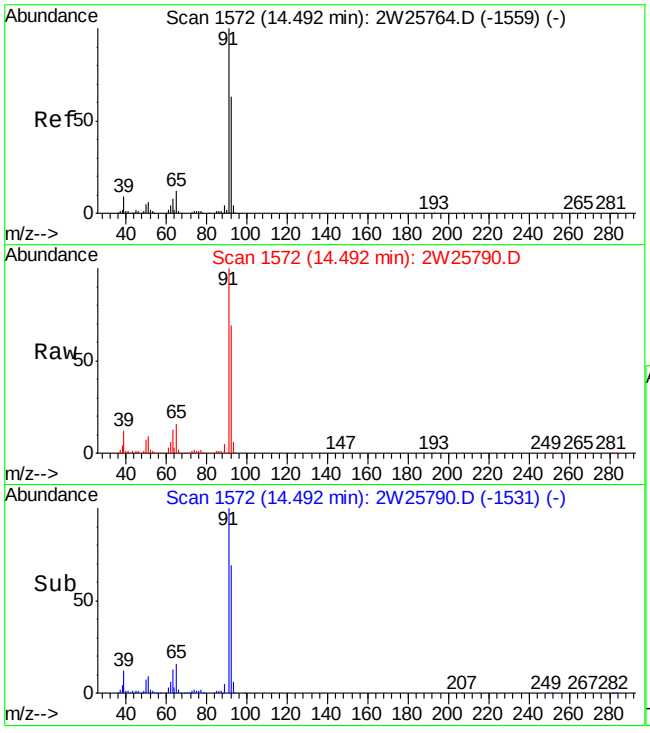


#58
METHYL ISOBUTYL KETONE
Concen: 0.21 PPBV
RT: 13.51 min Scan# 1410
Delta R.T. 0.02 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 43 Resp: 2718

Ion	Ratio	Lower	Upper
43	100		
58	43.5	25.2	65.2
100	19.1	0.2	40.2
85	22.0	5.0	45.0

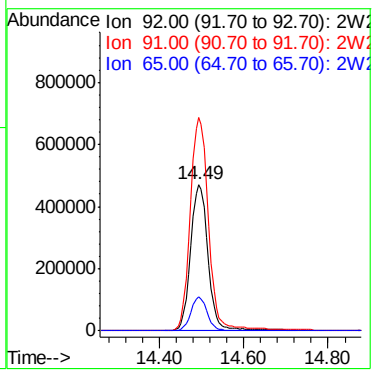


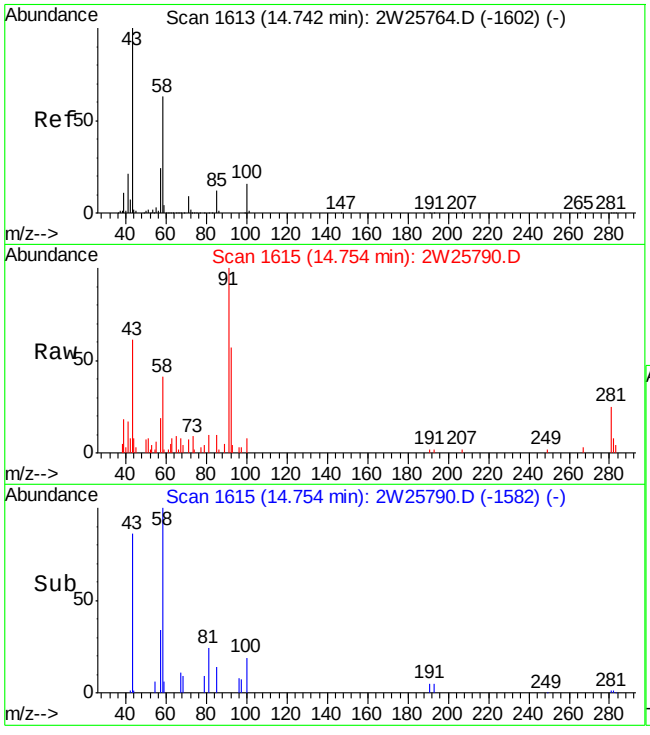


#60
TOLUENE
Concen: 73.14 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. 0.00 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 92 Resp: 1370119

Ion	Ratio	Lower	Upper
92	100		
91	152.2	143.7	183.7
65	21.6	0.0	38.6

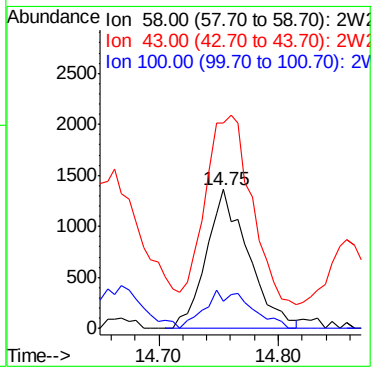


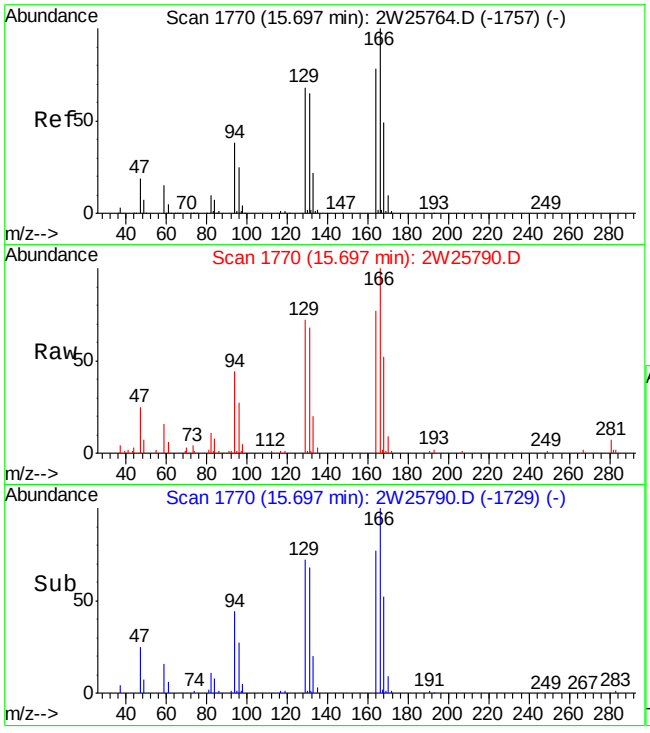


#64
2-HEXANONE
Concen: 0.58 PPBV
RT: 14.75 min Scan# 1615
Delta R.T. 0.01 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 58 Resp: 3369

Ion	Ratio	Lower	Upper
58	100		
43	170.1	141.7	181.7
100	29.8	5.5	45.5

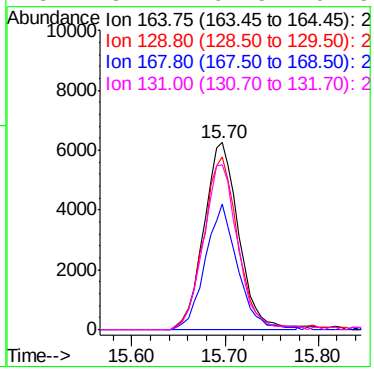


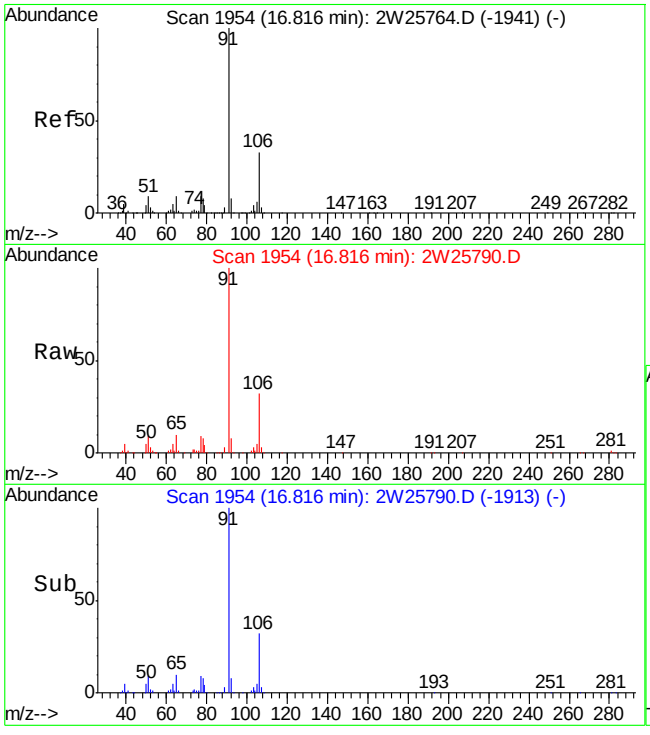


#65
TETRACHLOROETHYLENE
Concen: 1.26 PPBV
RT: 15.70 min Scan# 1770
Delta R.T. 0.00 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion:164 Resp: 16287

Ion	Ratio	Lower	Upper
164	100		
129	90.3	67.5	107.5
168	62.9	42.6	82.6
131	87.4	64.8	104.8

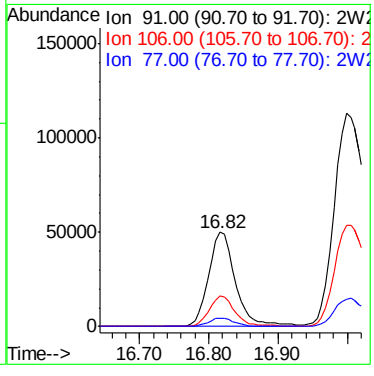


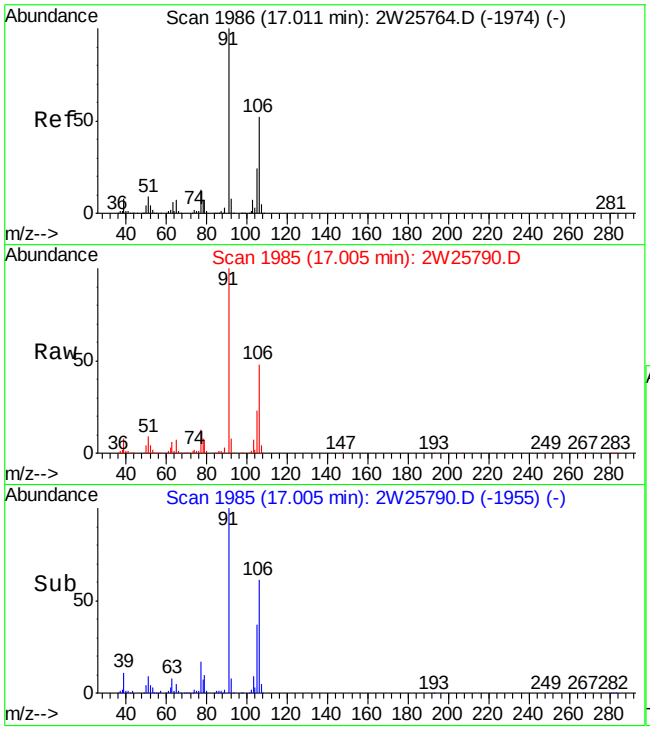


#71
ETHYLBENZENE
Concen: 4.16 PPBV
RT: 16.82 min Scan# 1954
Delta R.T. 0.00 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion: 91 Resp: 134321

Ion	Ratio	Lower	Upper
91	100		
106	31.6	12.4	52.4
77	8.7	0.0	28.6

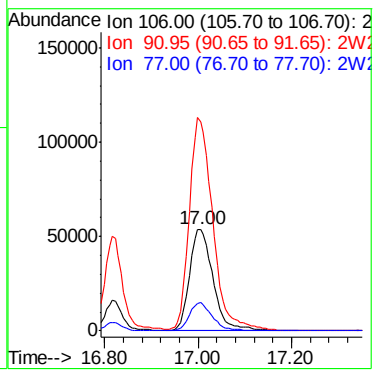


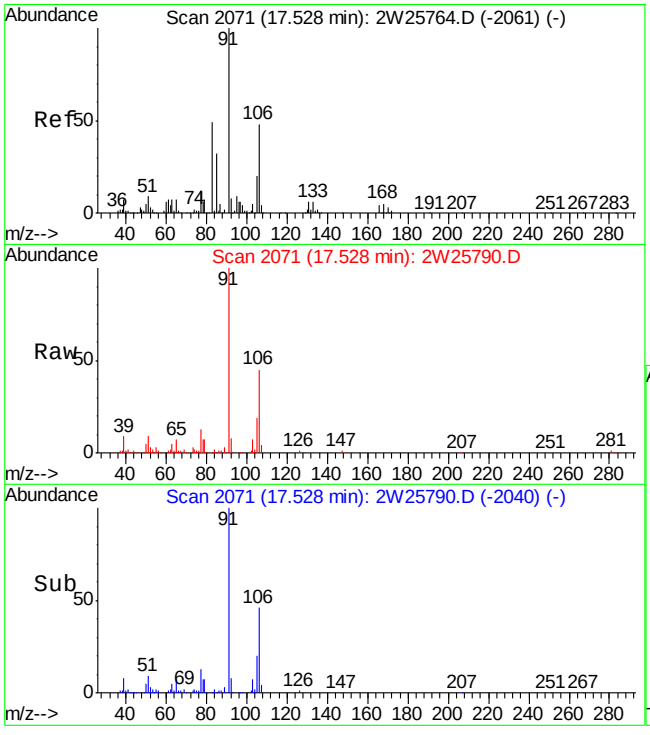


#72
m,p-XYLENE
Concen: 15.10 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.01 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion:106 Resp: 189861

Ion	Ratio	Lower	Upper
106	100		
91	206.2	155.5	233.3
77	27.5	20.4	30.6

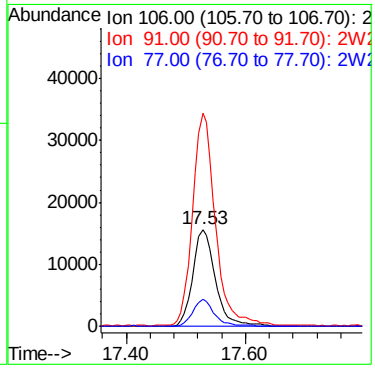


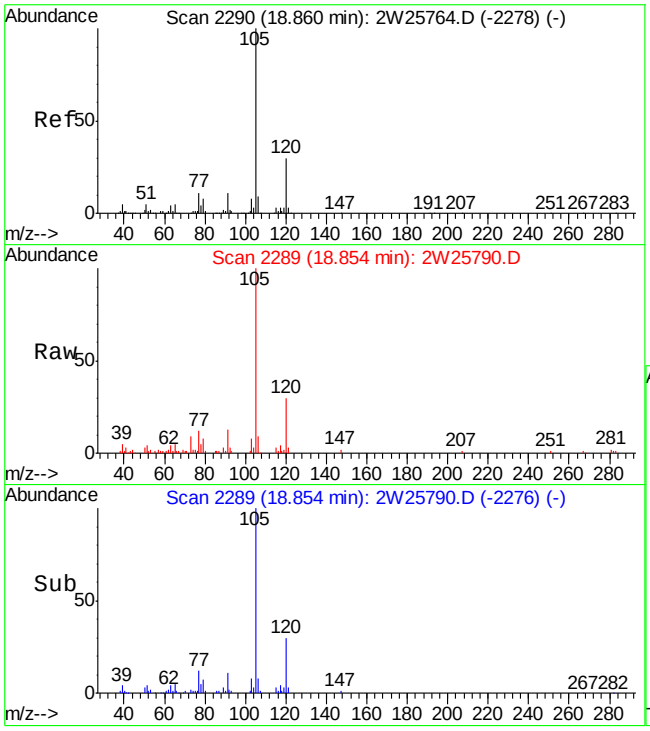


#73
o-XYLENE
Concen: 3.48 PPBV
RT: 17.53 min Scan# 2071
Delta R.T. 0.00 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion:106 Resp: 41280

Ion	Ratio	Lower	Upper
106	100		
91	218.0	189.0	229.0
77	27.3	5.7	45.7

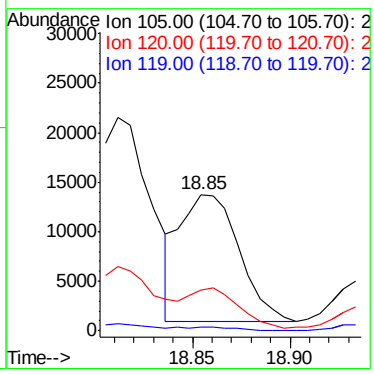


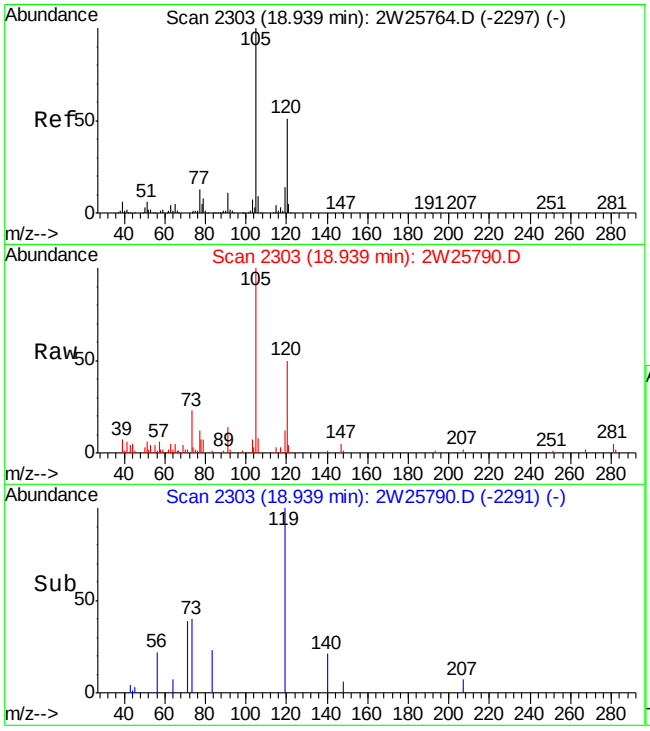


#82
4-ETHYLTOLUENE
Concen: 1.11 PPBV
RT: 18.85 min Scan# 2289
Delta R.T. -0.01 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion:105 Resp: 27014

Ion	Ratio	Lower	Upper
105	100		
120	25.6	10.4	50.4
119	2.1	0.0	22.6

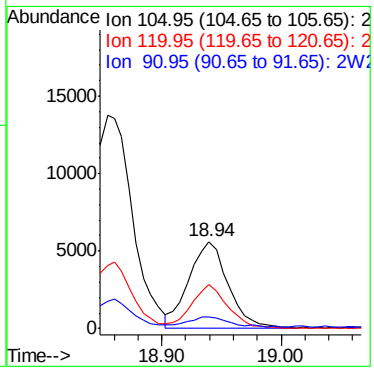




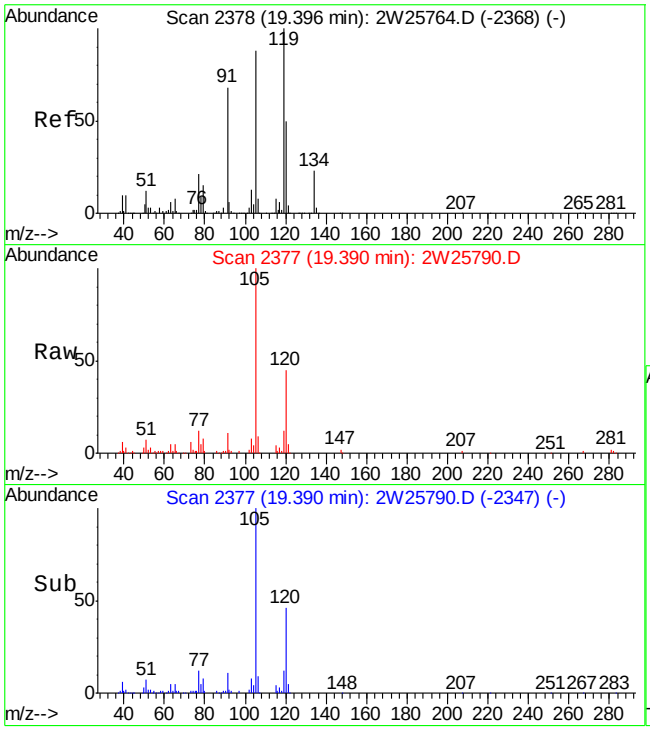
#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.58 PPBV
RT: 18.94 min Scan# 2303
Delta R.T. 0.00 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion:105 Resp: 12885

Ion	Ratio	Lower	Upper
105	100		
120	46.5	30.1	70.1
91	10.9	0.0	30.6



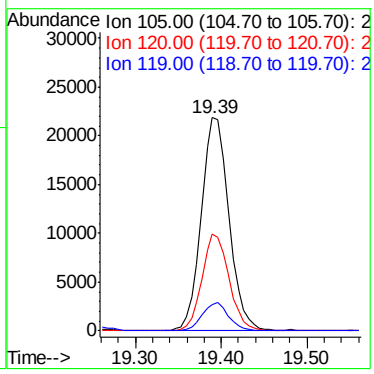
ACCUTEST Laboratories JA28238



#85
1,2,4-TRIMETHYLBENZENE
Concen: 2.53 PPBV
RT: 19.39 min Scan# 2377
Delta R.T. -0.01 min
Lab File: 2W25790.D
Acq: 5 Oct 2009 2:41 pm

Tgt Ion:105 Resp: 48997

Ion	Ratio	Lower	Upper
105	100		
120	44.3	38.0	78.0
119	12.6	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25799.D Vial: 1
Acq On : 5 Oct 2009 10:47 pm Operator: YOUMINH
Sample : JA28238-10(A400,A425) Inst : MS2W
Misc : MS86174,V2W1086,200,,,,43 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:29 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	59255	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	248353	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	113036	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	112853	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	55836	5.03	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 100.60%

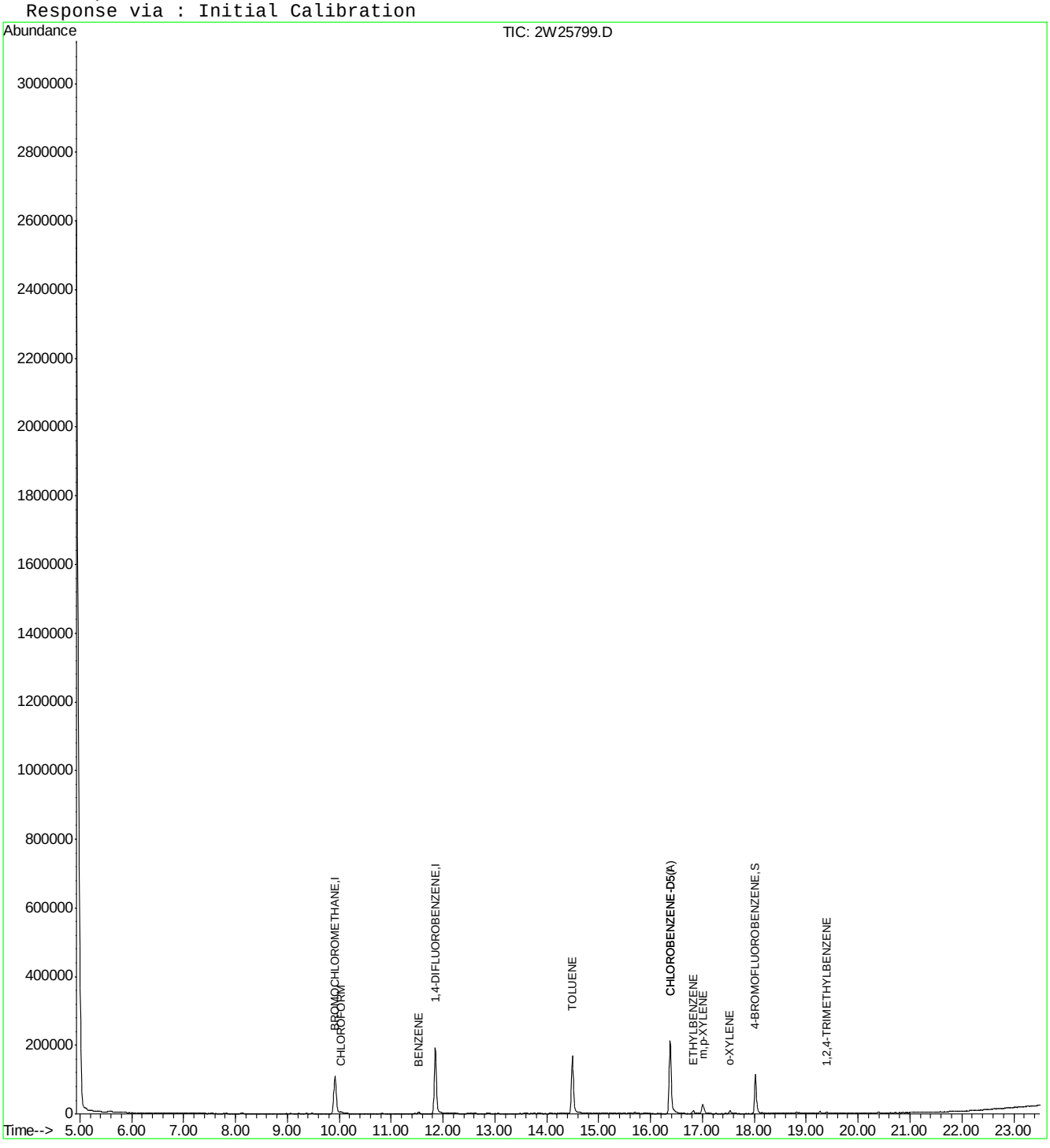
Target Compounds						Qvalue
41) CHLOROFORM	10.04	83	5250	0.32	PPBV	96
47) BENZENE	11.53	78	4933	0.22	PPBV	100
60) TOLUENE	14.49	92	122351	8.16	PPBV	99
71) ETHYLBENZENE	16.82	91	10358	0.38	PPBV	98
72) m,p-XYLENE	17.00	106	15201	1.43	PPBV	99
73) o-XYLENE	17.52	106	3331	0.33	PPBV #	83
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	2983	0.18	PPBV #	27

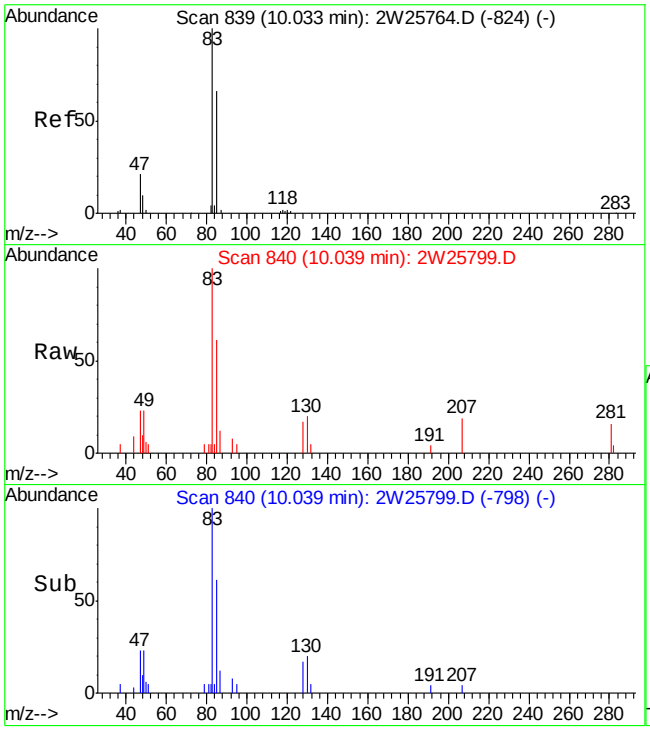
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25799.D Vial: 1
Acq On : 5 Oct 2009 10:47 pm Operator: YOUMINH
Sample : JA28238-10(A400,A425) Inst : MS2W
Misc : MS86174,V2W1086,200,,,,43 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:44 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

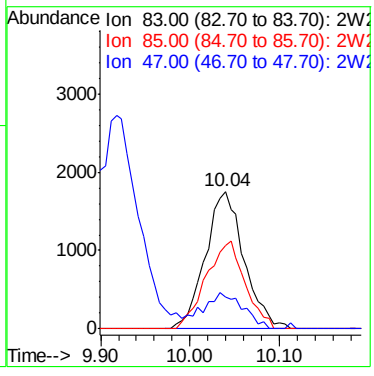


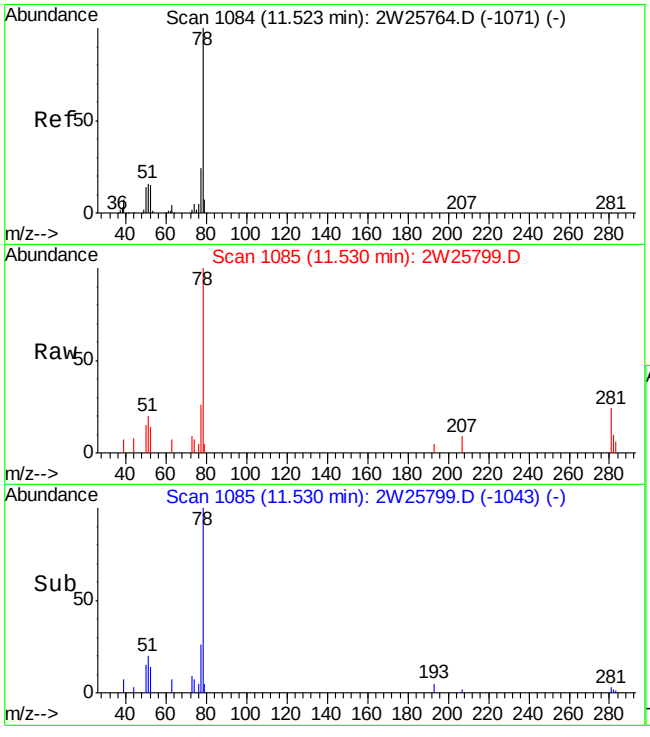


#41
CHLOROFORM
Concen: 0.32 PPBV
RT: 10.04 min Scan# 840
Delta R.T. 0.01 min
Lab File: 2W25799.D
Acq: 5 Oct 2009 10:47 pm

Tgt Ion: 83 Resp: 5250

Ion	Ratio	Lower	Upper
83	100		
85	64.3	44.9	84.9
47	27.7	2.0	42.0

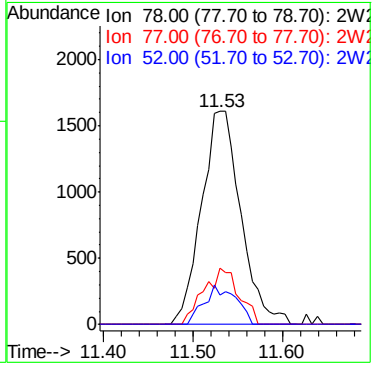


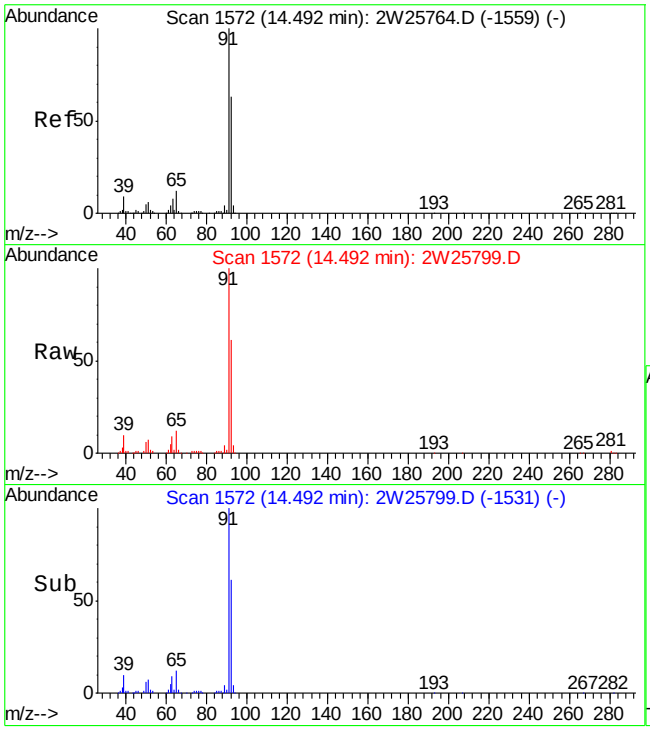


#47
BENZENE
Concen: 0.22 PPBV
RT: 11.53 min Scan# 1085
Delta R.T. 0.01 min
Lab File: 2W25799.D
Acq: 5 Oct 2009 10:47 pm

Tgt Ion: 78 Resp: 4933

Ion	Ratio	Lower	Upper
78	100		
77	23.5	3.5	43.5
52	14.8	0.0	34.5

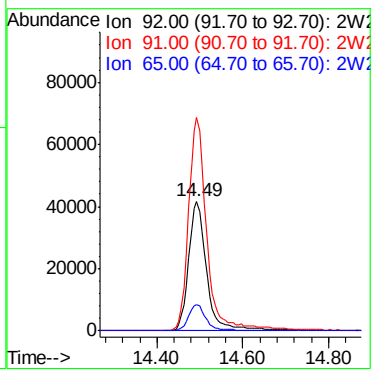


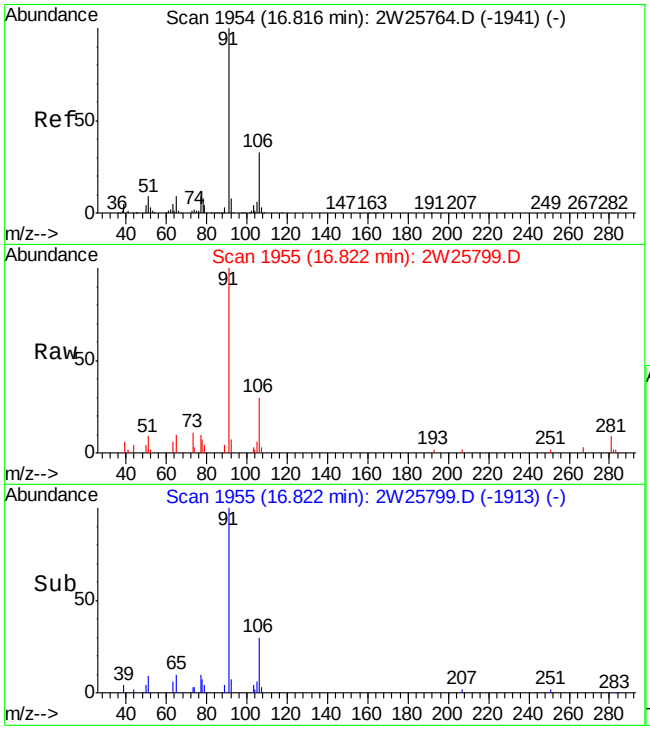


#60
TOLUENE
Concen: 8.16 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. 0.00 min
Lab File: 2W25799.D
Acq: 5 Oct 2009 10:47 pm

Tgt Ion: 92 Resp: 122351

Ion	Ratio	Lower	Upper
92	100		
91	165.6	143.7	183.7
65	19.6	0.0	38.6

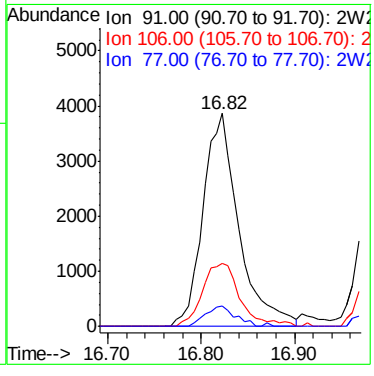


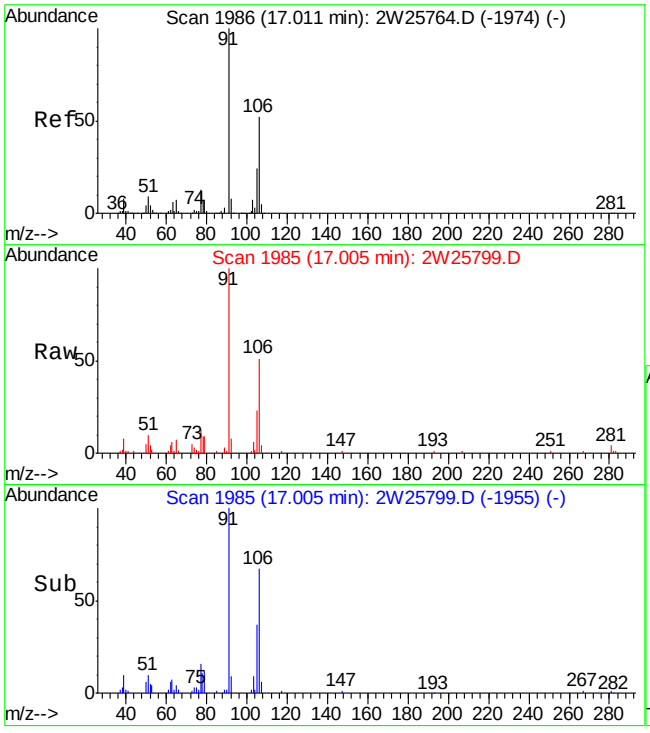


#71
ETHYLBENZENE
Concen: 0.38 PPBV
RT: 16.82 min Scan# 1955
Delta R.T. 0.01 min
Lab File: 2W25799.D
Acq: 5 Oct 2009 10:47 pm

Tgt Ion: 91 Resp: 10358

Ion	Ratio	Lower	Upper
91	100		
106	31.2	12.4	52.4
77	8.1	0.0	28.6

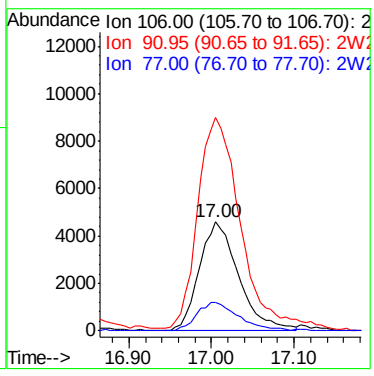


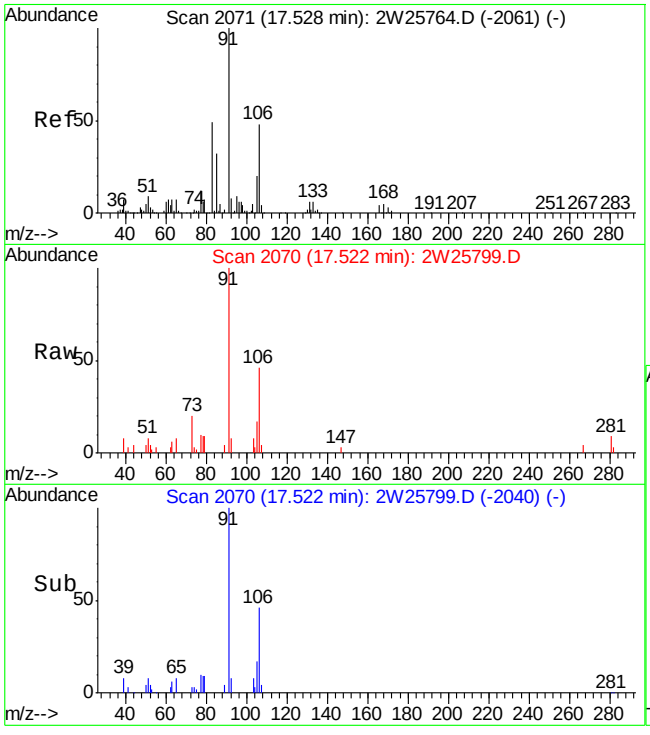


#72
m,p-XYLENE
Concen: 1.43 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.01 min
Lab File: 2W25799.D
Acq: 5 Oct 2009 10:47 pm

Tgt Ion:106 Resp: 15201

Ion	Ratio	Lower	Upper
106	100		
91	196.2	155.5	233.3
77	25.9	20.4	30.6

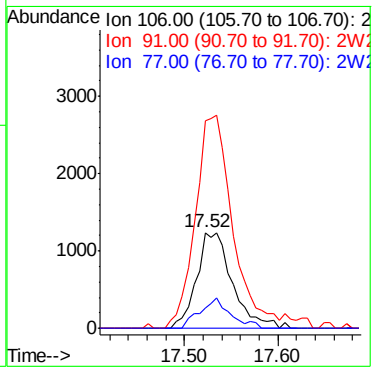


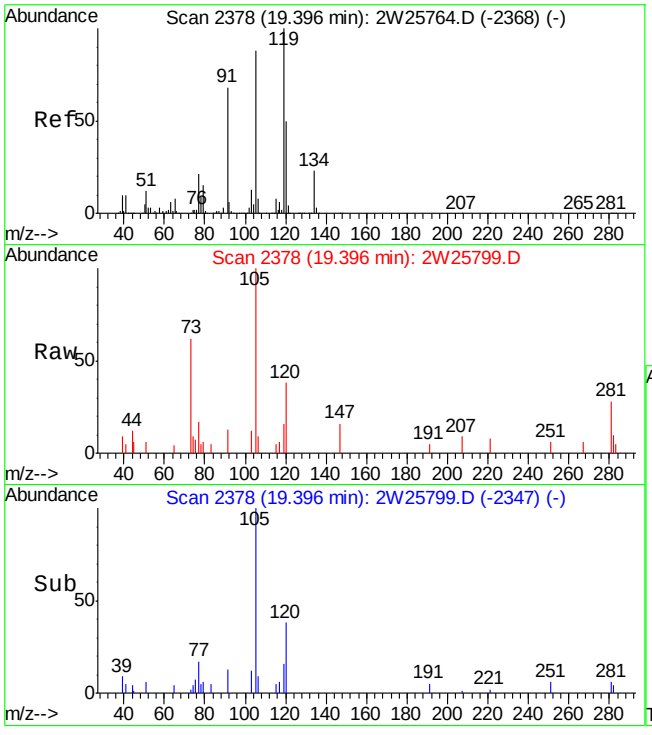


#73
o-XYLENE
Concen: 0.33 PPBV
RT: 17.52 min Scan# 2070
Delta R.T. -0.01 min
Lab File: 2W25799.D
Acq: 5 Oct 2009 10:47 pm

Tgt Ion:106 Resp: 3331

Ion	Ratio	Lower	Upper
106	100		
91	238.1	189.0	229.0#
77	27.0	5.7	45.7

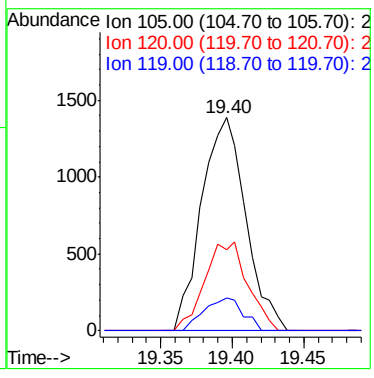




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.18 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. 0.00 min
Lab File: 2W25799.D
Acq: 5 Oct 2009 10:47 pm

Tgt Ion:105 Resp: 2983

Ion	Ratio	Lower	Upper
105	100		
120	40.3	38.0	78.0
119	13.6	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25791.D Vial: 10
Acq On : 5 Oct 2009 3:25 pm Operator: YOUMINH
Sample : JA28238-11 Inst : MS2W
Misc : MS86174,V2W1086,100,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:11 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

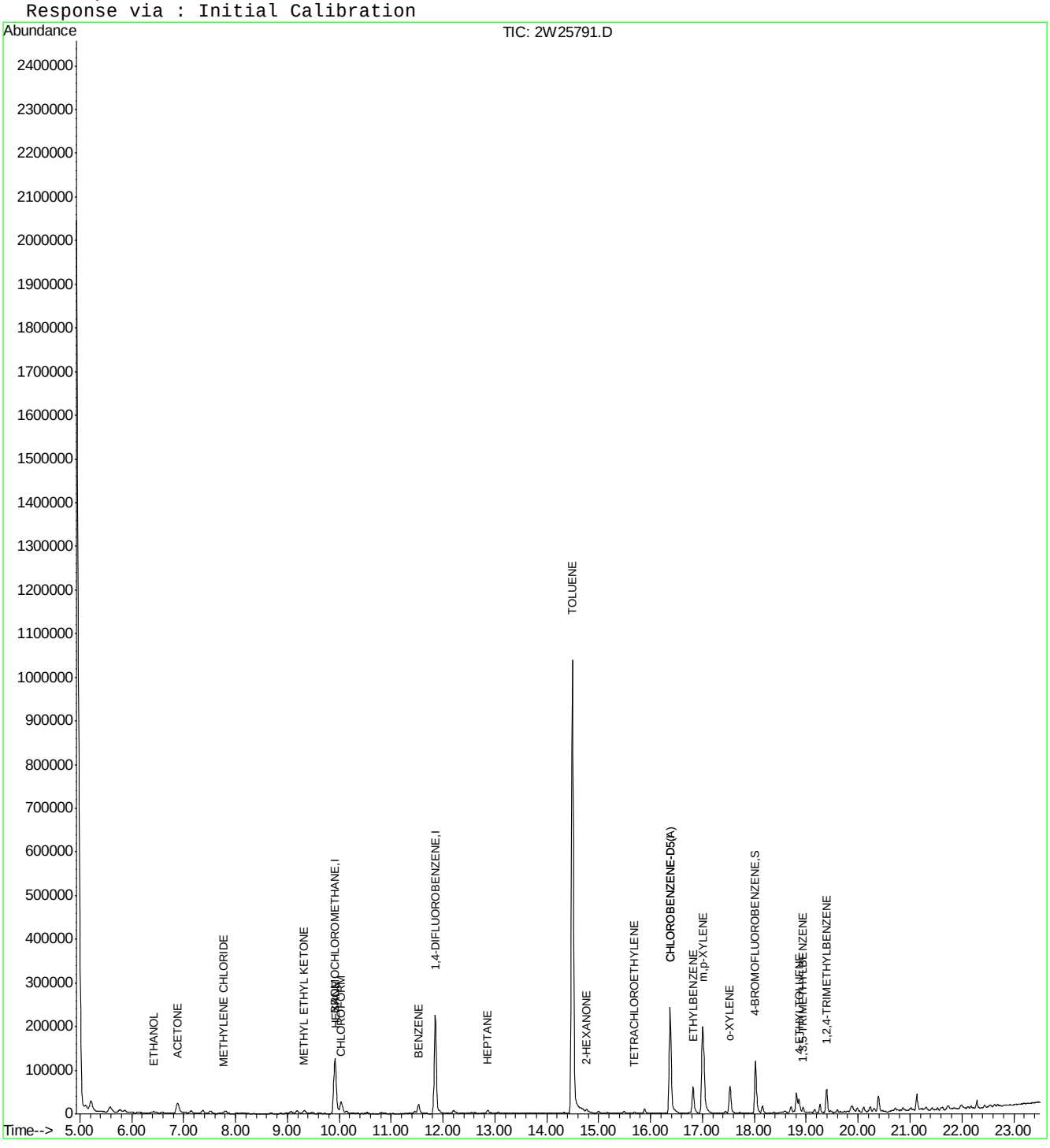
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	66825	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	287611	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	126014	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	125932	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	61188	4.95	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 99.00%			
Target Compounds						Qvalue
19) ACETONE	6.89	58	18317	4.17	PPBV #	70
26) ETHANOL	6.43	45	8393	3.09	PPBV #	68
28) METHYLENE CHLORIDE	7.77	84	1715	0.21	PPBV	94
35) HEXANE	9.94	57	5610	0.50	PPBV	91
38) METHYL ETHYL KETONE	9.32	72	5318	1.53	PPBV	93
41) CHLOROFORM	10.03	83	32251	1.73	PPBV	98
47) BENZENE	11.53	78	29988	1.13	PPBV	100
56) HEPTANE	12.86	43	3736	0.35	PPBV	97
60) TOLUENE	14.49	92	754602	43.48	PPBV	97
64) 2-HEXANONE	14.77	58	1730	0.31	PPBV #	86
65) TETRACHLOROETHYLENE	15.69	164	681	0.06	PPBV	93
71) ETHYLBENZENE	16.82	91	74298	2.43	PPBV	99
72) m,p-XYLENE	17.00	106	121835	10.26	PPBV	90
73) o-XYLENE	17.53	106	25905	2.32	PPBV	91
82) 4-ETHYLTOLUENE	18.86	105	21699	0.95	PPBV	97
83) 1,3,5-TRIMETHYLBENZENE	18.93	105	9444	0.45	PPBV	99
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	40394	2.21	PPBV #	28

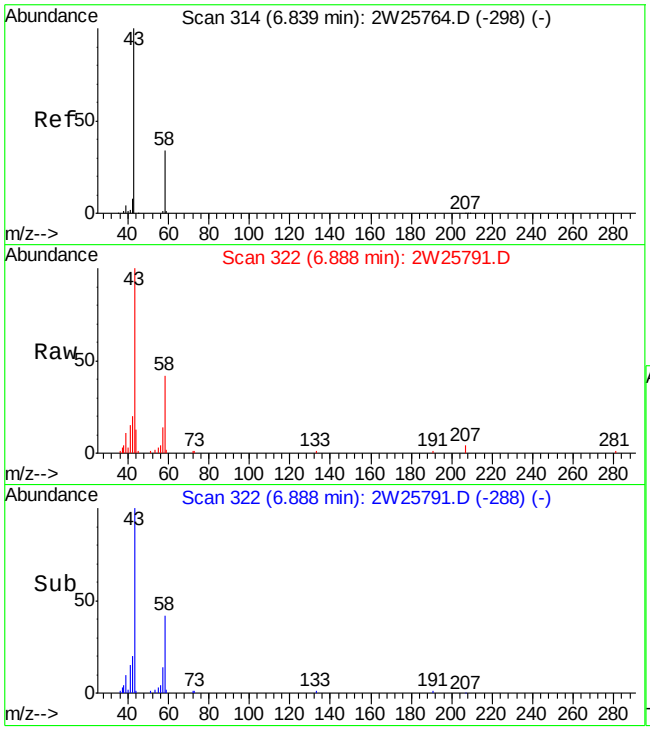
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25791.D Vial: 10
Acq On : 5 Oct 2009 3:25 pm Operator: YOUMINH
Sample : JA28238-11 Inst : MS2W
Misc : MS86174,V2W1086,100,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:35 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

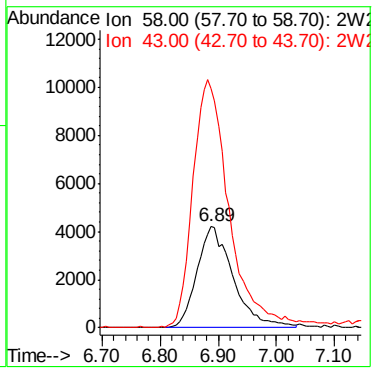


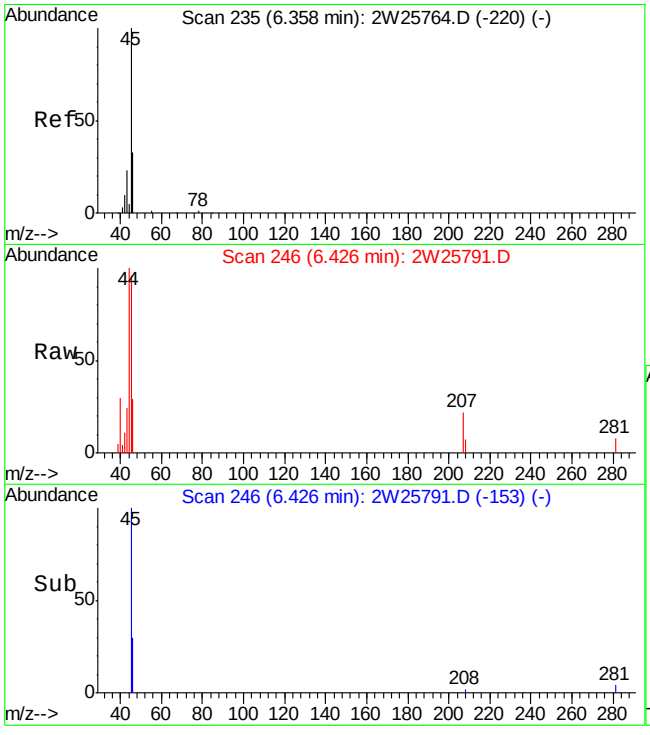


#19
ACETONE
Concen: 4.17 PPBV
RT: 6.89 min Scan# 322
Delta R.T. 0.05 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 58 Resp: 18317

Ion	Ratio	Lower	Upper
58	100		
43	242.4	281.6	321.6#

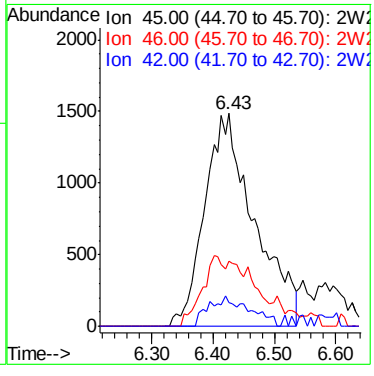


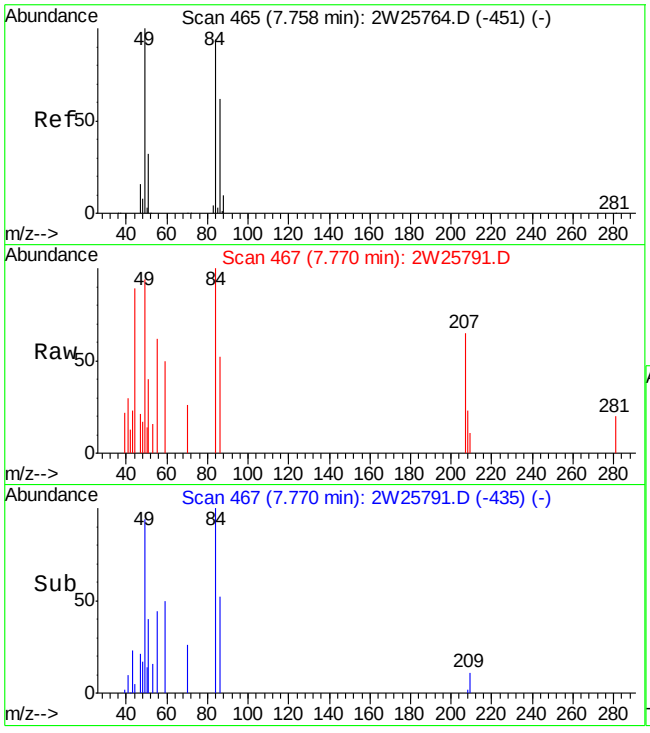


#26
ETHANOL
Concen: 3.09 PPBV
RT: 6.43 min Scan# 246
Delta R.T. 0.07 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 45 Resp: 8393

Ion	Ratio	Lower	Upper
45	100		
46	14.8	17.8	57.8#
42	7.0	0.0	29.6

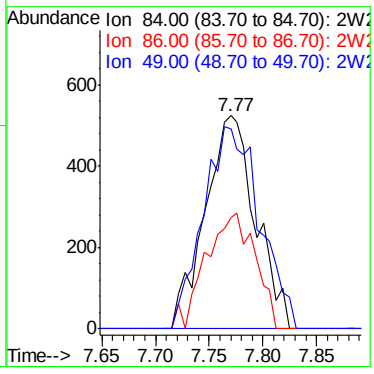


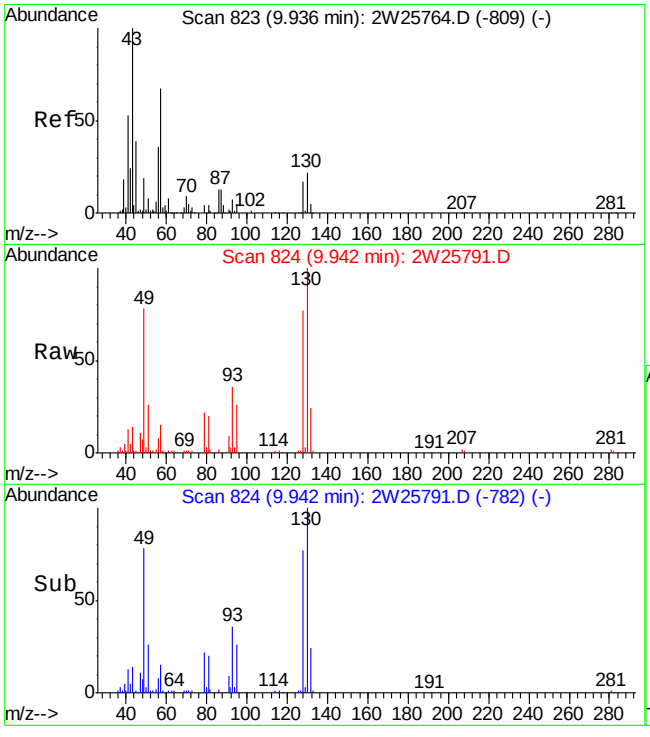


#28
METHYLENE CHLORIDE
Concen: 0.21 PPBV
RT: 7.77 min Scan# 467
Delta R.T. 0.01 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 84 Resp: 1715

Ion	Ratio	Lower	Upper
84	100		
86	52.9	45.3	85.3
49	105.7	0.0	305.8

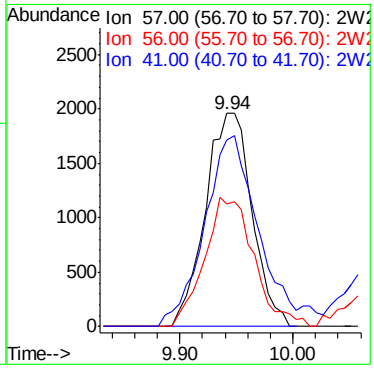


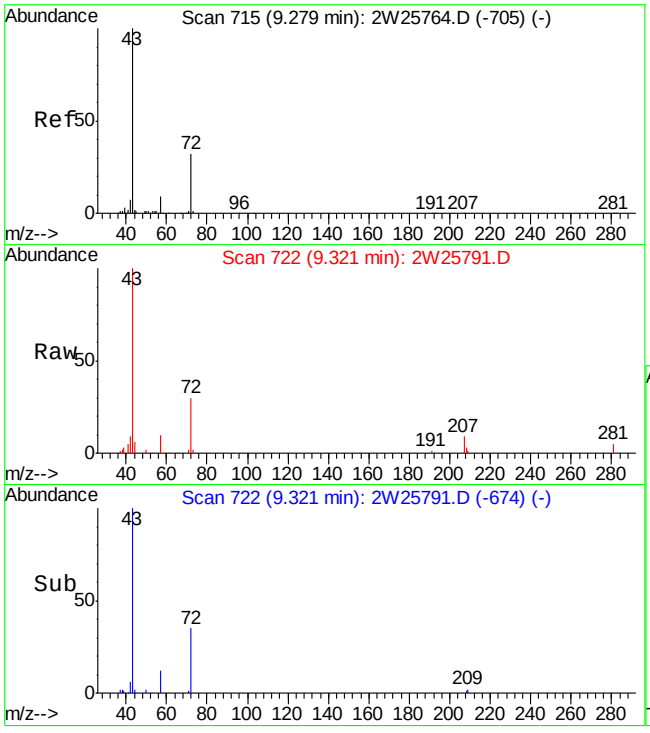


#35
HEXANE
Concen: 0.50 PPBV
RT: 9.94 min Scan# 824
Delta R.T. 0.01 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 57 Resp: 5610

Ion	Ratio	Lower	Upper
57	100		
56	63.9	32.6	72.6
41	105.6	80.6	120.6

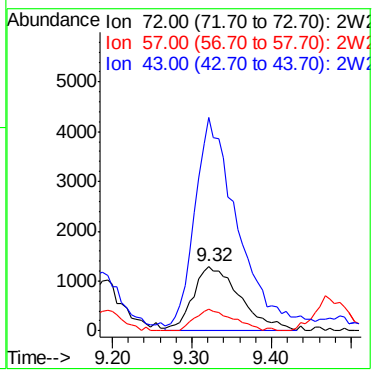


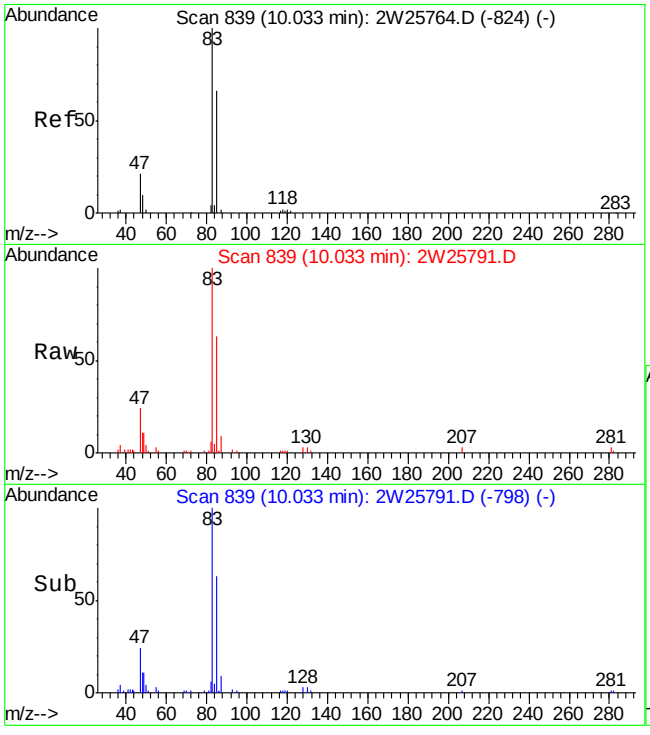


#38
METHYL ETHYL KETONE
Concen: 1.53 PPBV
RT: 9.32 min Scan# 722
Delta R.T. 0.04 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 72 Resp: 5318

Ion	Ratio	Lower	Upper
72	100		
57	33.7	8.3	48.3
43	329.5	294.9	334.9

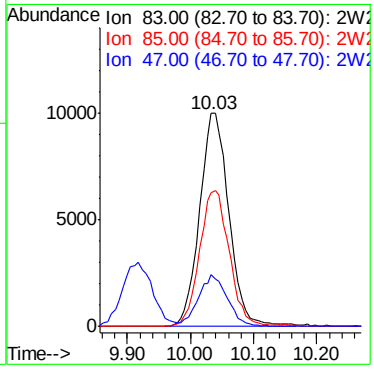


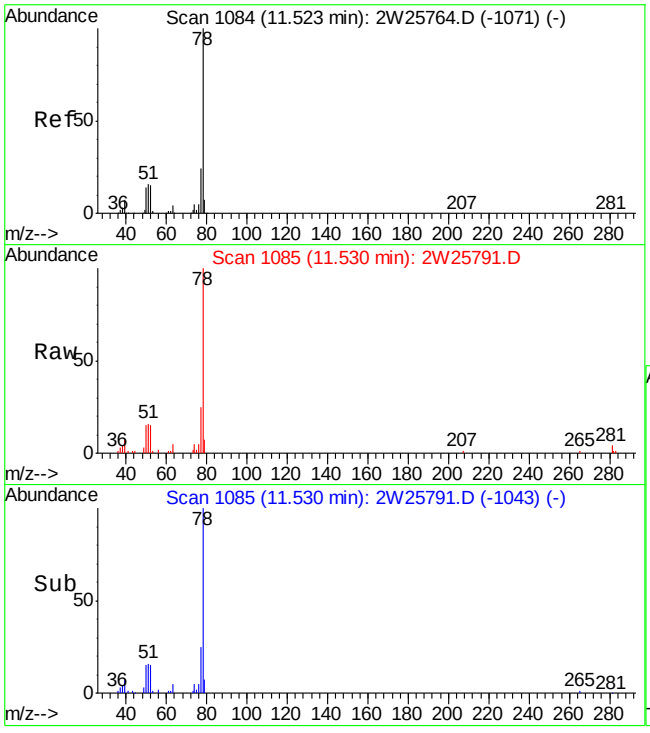


#41
CHLOROFORM
Concen: 1.73 PPBV
RT: 10.03 min Scan# 839
Delta R.T. 0.00 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 83 Resp: 32251

Ion	Ratio	Lower	Upper
83	100		
85	64.3	44.9	84.9
47	24.0	2.0	42.0

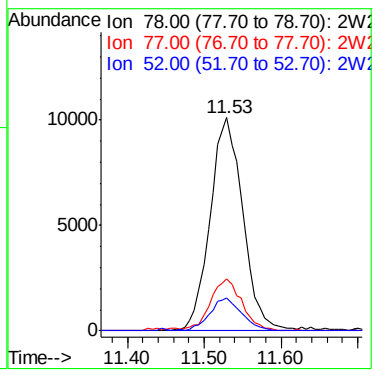


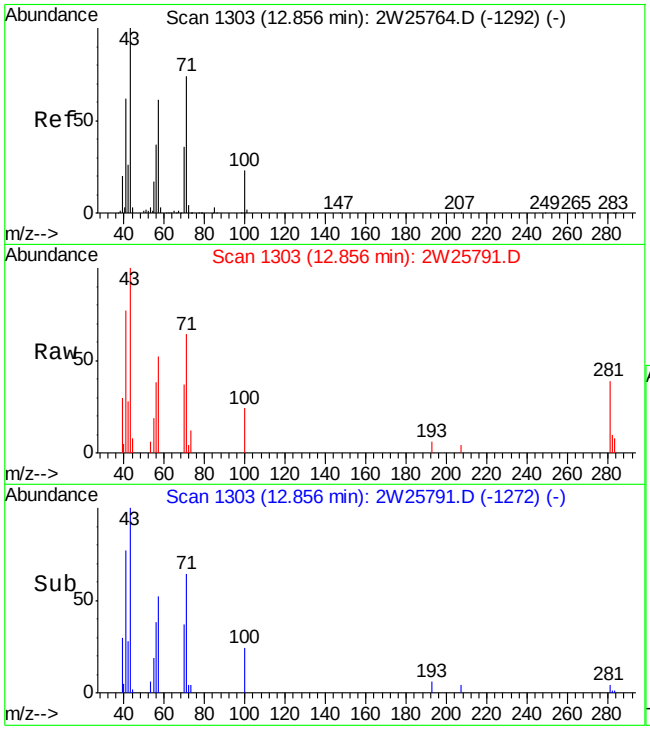


#47
BENZENE
Concen: 1.13 PPBV
RT: 11.53 min Scan# 1085
Delta R.T. 0.01 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 78 Resp: 29988

Ion	Ratio	Lower	Upper
78	100		
77	23.5	3.5	43.5
52	15.0	0.0	34.5

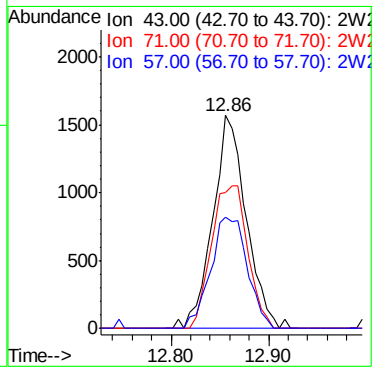


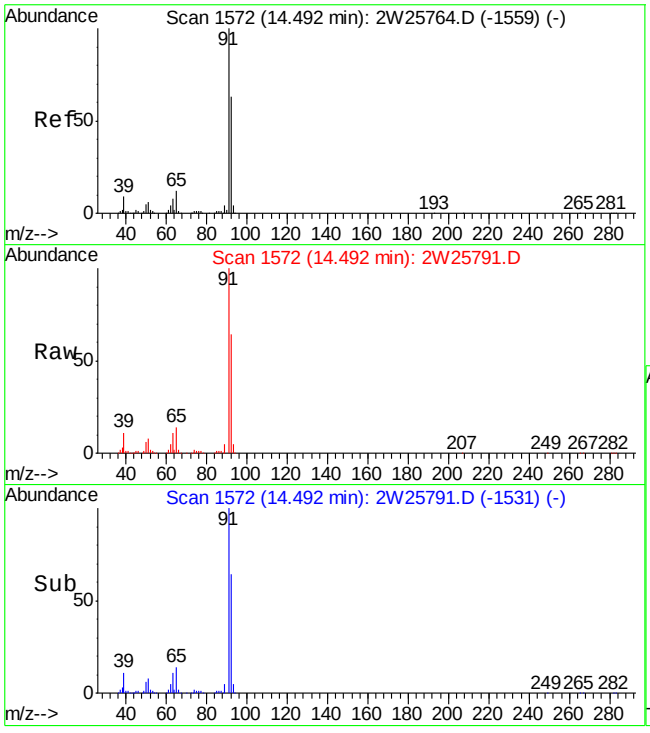


#56
HEPTANE
Concen: 0.35 PPBV
RT: 12.86 min Scan# 1303
Delta R.T. 0.00 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 43 Resp: 3736

Ion	Ratio	Lower	Upper
43	100		
71	72.9	54.6	94.6
57	57.6	40.6	80.6

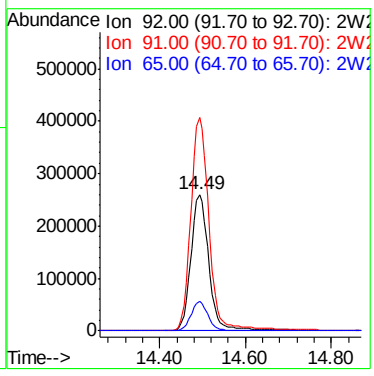


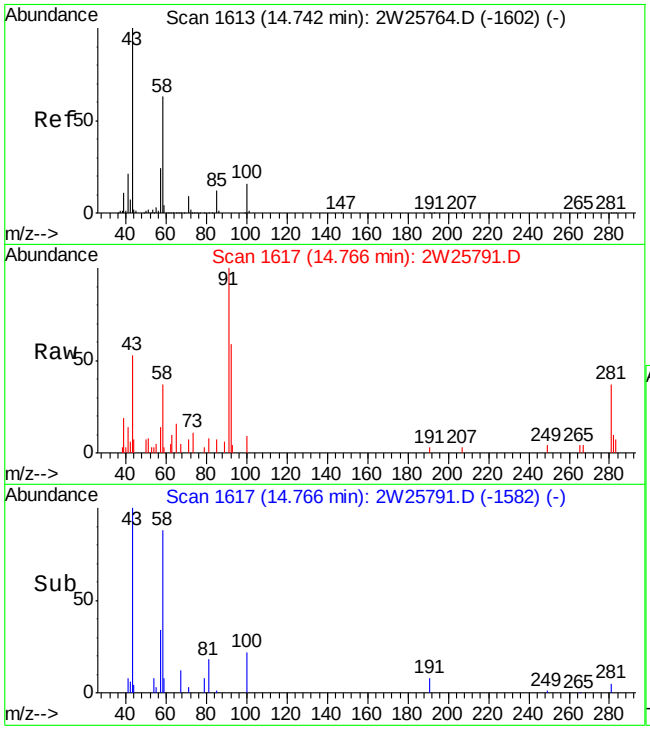


#60
TOLUENE
Concen: 43.48 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. 0.00 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 92 Resp: 754602

Ion	Ratio	Lower	Upper
92	100		
91	159.9	143.7	183.7
65	20.7	0.0	38.6

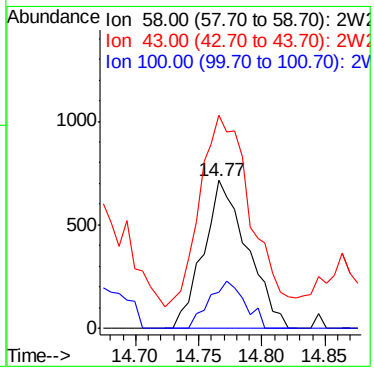


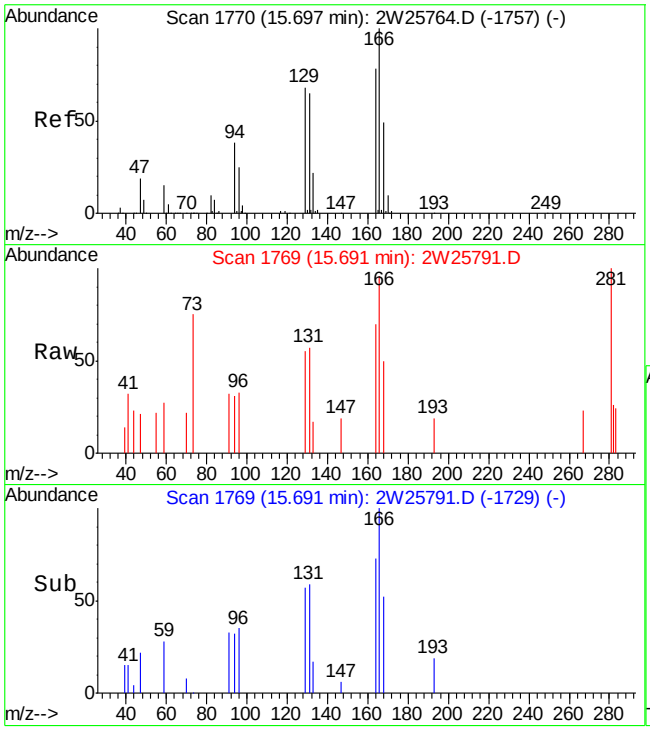


#64
2-HEXANONE
Concen: 0.31 PPBV
RT: 14.77 min Scan# 1617
Delta R.T. 0.02 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 58 Resp: 1730

Ion	Ratio	Lower	Upper
58	100		
43	183.7	141.7	181.7#
100	26.2	5.5	45.5

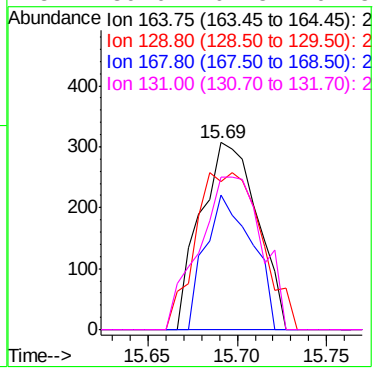


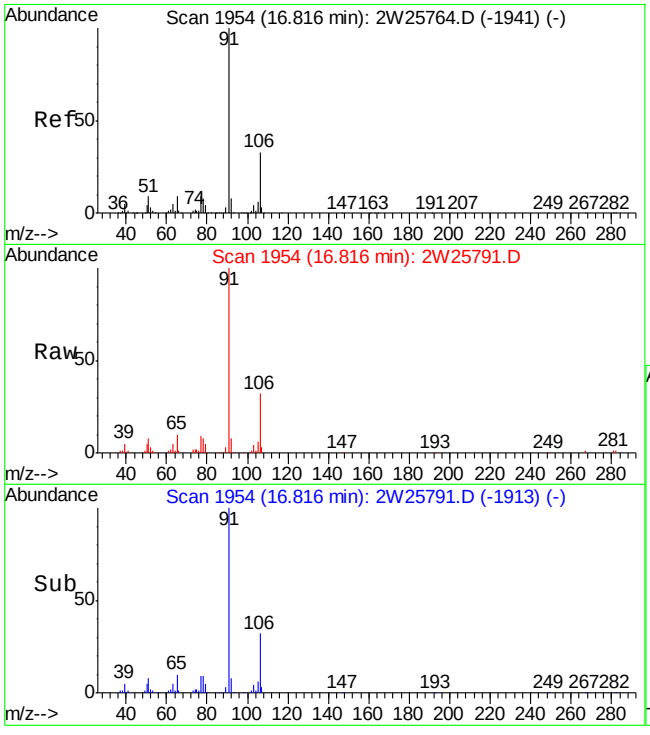


#65
TETRACHLOROETHYLENE
Concen: 0.06 PPBV
RT: 15.69 min Scan# 1769
Delta R.T. -0.01 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion:164 Resp: 681

Ion	Ratio	Lower	Upper
164	100		
129	96.3	67.5	107.5
168	58.7	42.6	82.6
131	89.6	64.8	104.8

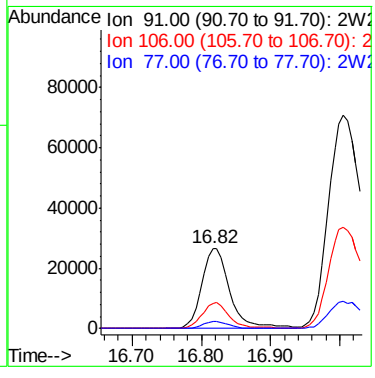


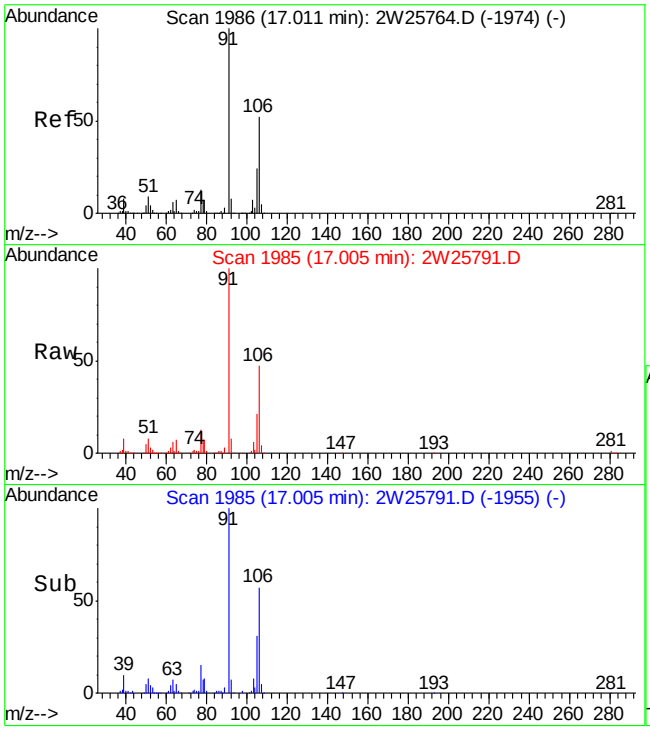


#71
ETHYLBENZENE
Concen: 2.43 PPBV
RT: 16.82 min Scan# 1954
Delta R.T. 0.00 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion: 91 Resp: 74298

Ion	Ratio	Lower	Upper
91	100		
106	31.6	12.4	52.4
77	8.6	0.0	28.6

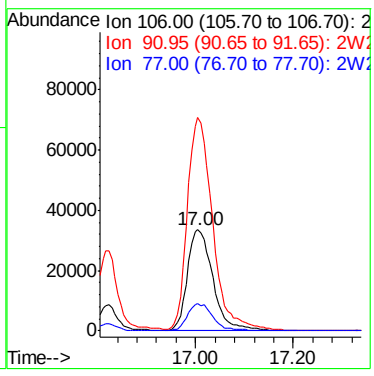


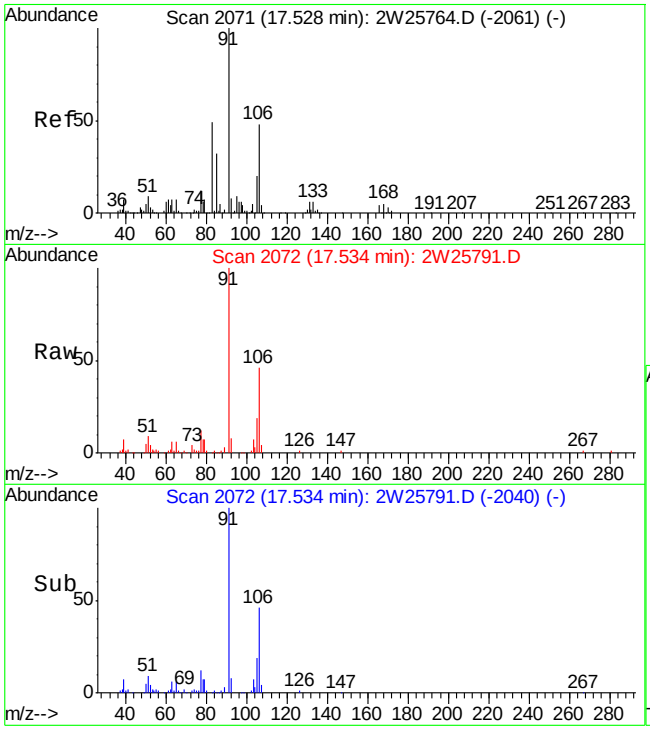


#72
m,p-XYLENE
Concen: 10.26 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.01 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion:106 Resp: 121835

Ion	Ratio	Lower	Upper
106	100		
91	211.3	155.5	233.3
77	26.9	20.4	30.6

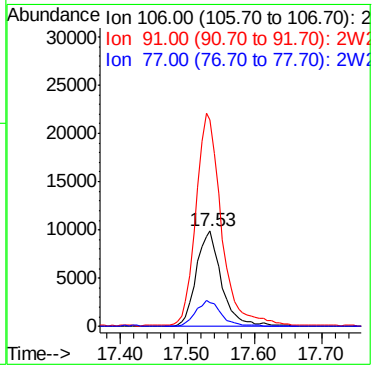


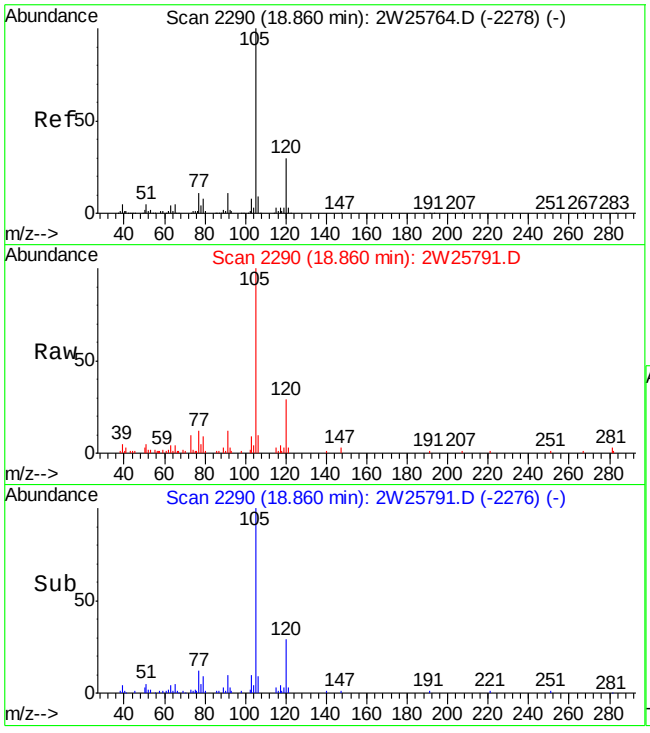


#73
o-XYLENE
Concen: 2.32 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. 0.01 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion:106 Resp: 25905

Ion	Ratio	Lower	Upper
106	100		
91	224.8	189.0	229.0
77	27.8	5.7	45.7

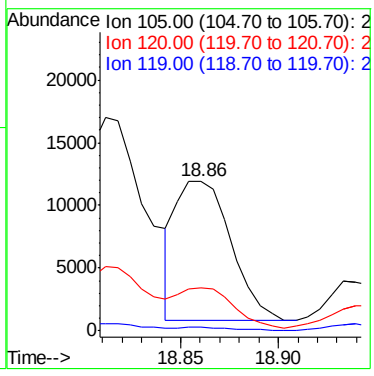


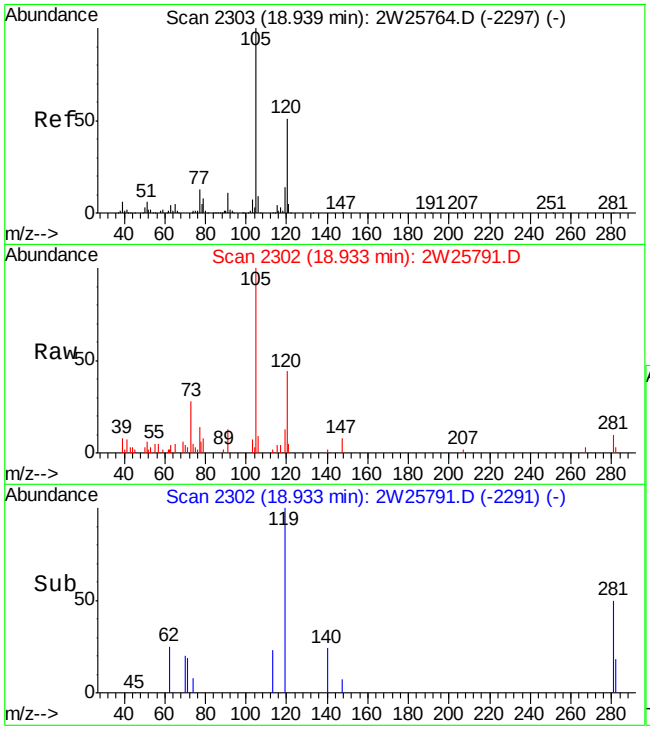


#82
4-ETHYLTOLUENE
Concen: 0.95 PPBV
RT: 18.86 min Scan# 2290
Delta R.T. 0.00 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion:105 Resp: 21699

Ion	Ratio	Lower	Upper
105	100		
120	28.9	10.4	50.4
119	2.2	0.0	22.6

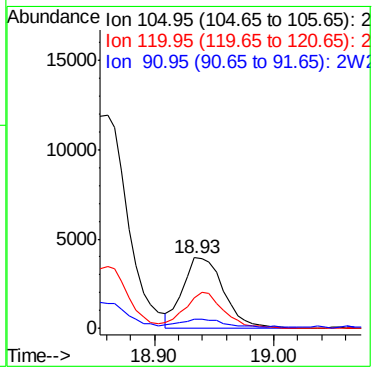


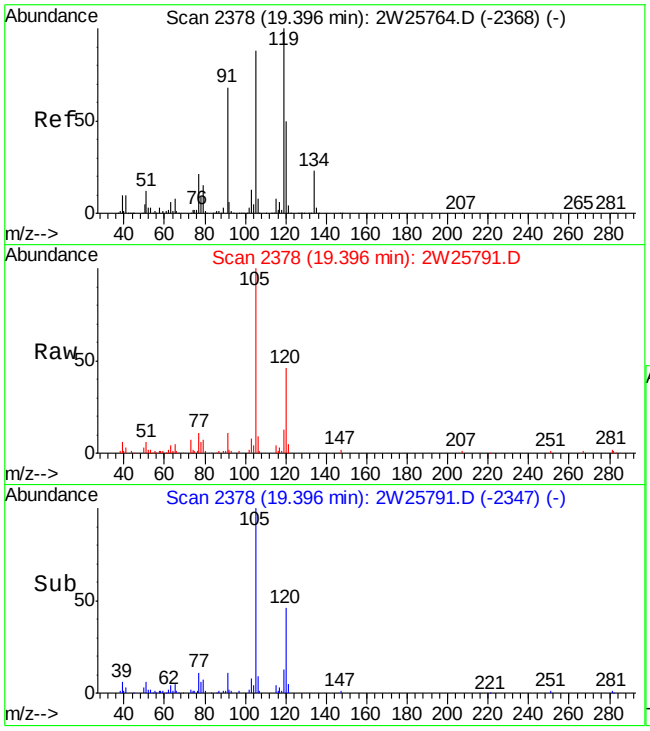


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.45 PPBV
RT: 18.93 min Scan# 2302
Delta R.T. -0.01 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion:105 Resp: 9444

Ion	Ratio	Lower	Upper
105	100		
120	49.8	30.1	70.1
91	12.1	0.0	30.6

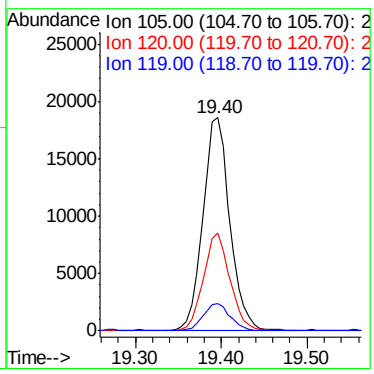




#85
1,2,4-TRIMETHYLBENZENE
Concen: 2.21 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. 0.00 min
Lab File: 2W25791.D
Acq: 5 Oct 2009 3:25 pm

Tgt Ion:105 Resp: 40394

Ion	Ratio	Lower	Upper
105	100		
120	45.2	38.0	78.0
119	12.6	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25800.D Vial: 3
Acq On : 5 Oct 2009 11:31 pm Operator: YOUMINH
Sample : JA28238-11 Inst : MS2W
Misc : MS86174,V2W1086,40,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:31 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	68794	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.86	114	279722	10.00	PPBV	0.01
63) CHLOROBENZENE-D5	16.38	82	124983	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	124798	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	63356	5.16	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 103.20%

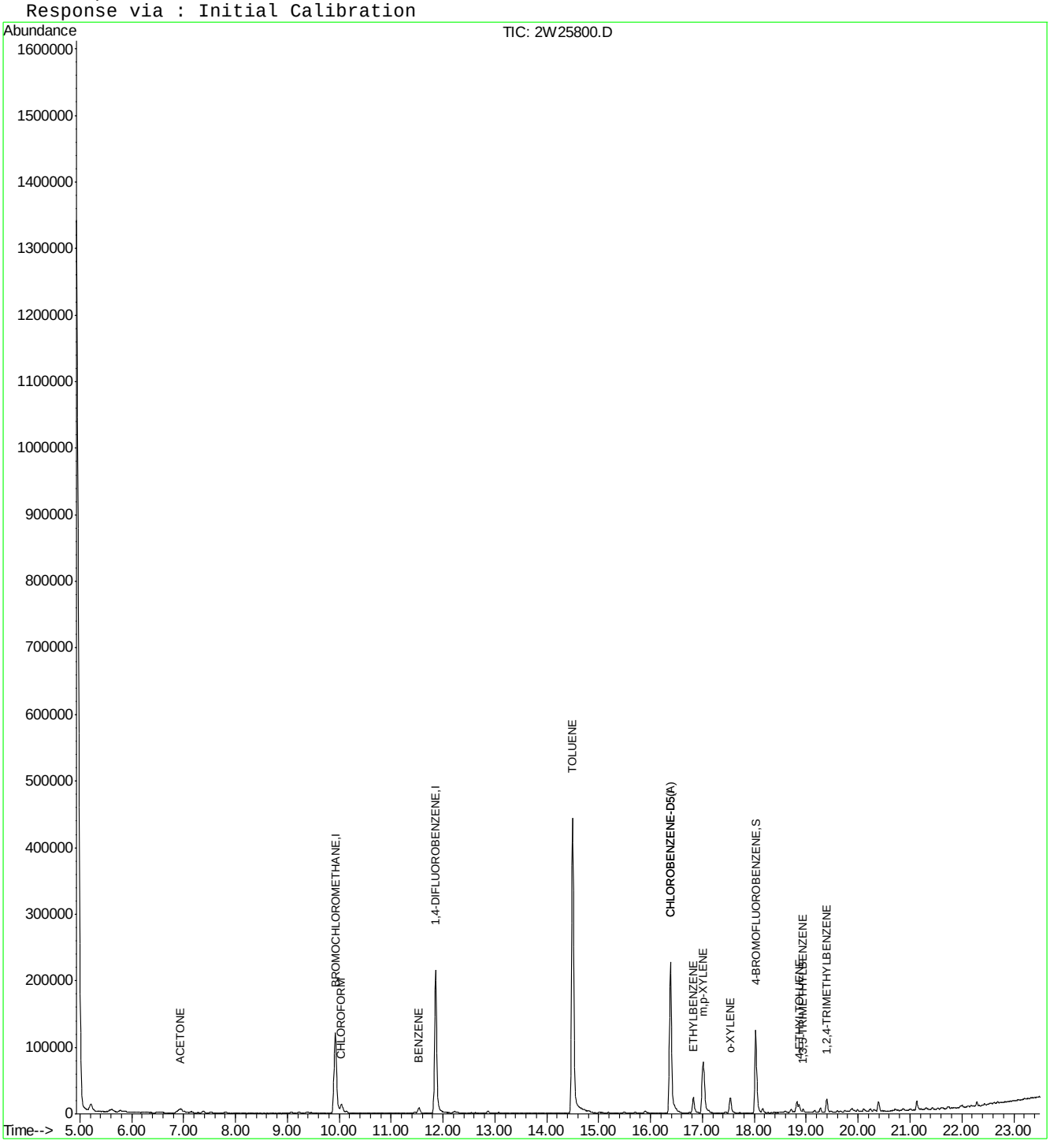
Target Compounds						Qvalue
19) ACETONE	6.93	58	7404	1.64	PPBV #	66
41) CHLOROFORM	10.05	83	13853	0.72	PPBV	99
47) BENZENE	11.54	78	12673	0.49	PPBV	100
60) TOLUENE	14.50	92	322425	19.10	PPBV	97
71) ETHYLBENZENE	16.82	91	29301	0.97	PPBV	96
72) m,p-XYLENE	17.02	106	48502	4.12	PPBV	99
73) o-XYLENE	17.54	106	10109	0.91	PPBV	90
82) 4-ETHYLTOLUENE	18.86	105	8534	0.38	PPBV	97
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	3911	0.19	PPBV	92
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	15023	0.83	PPBV #	28

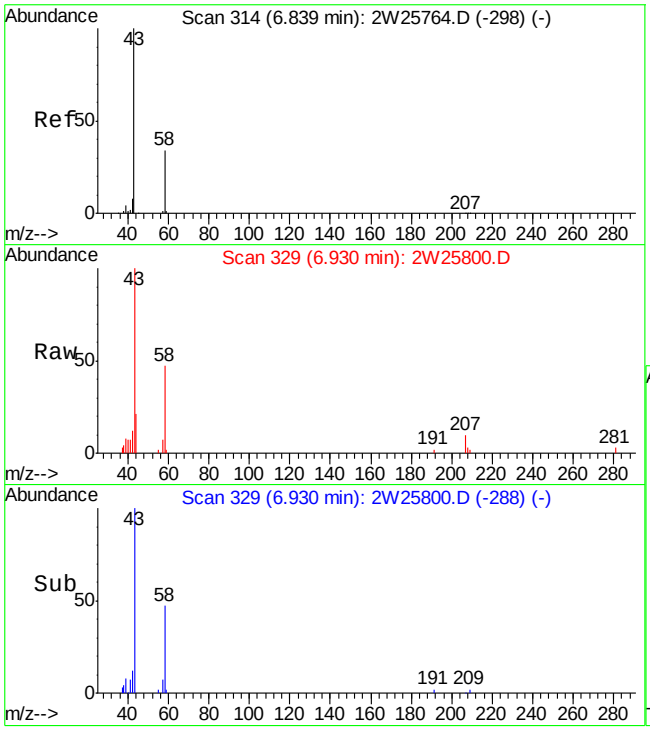
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25800.D Vial: 3
Acq On : 5 Oct 2009 11:31 pm Operator: YOUMINH
Sample : JA28238-11 Inst : MS2W
Misc : MS86174,V2W1086,40,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:47 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

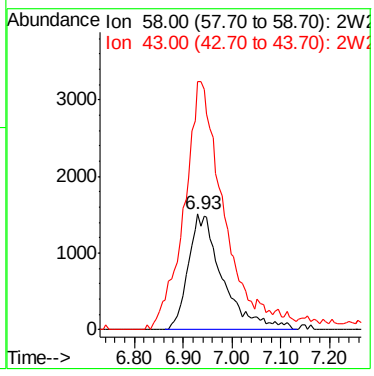


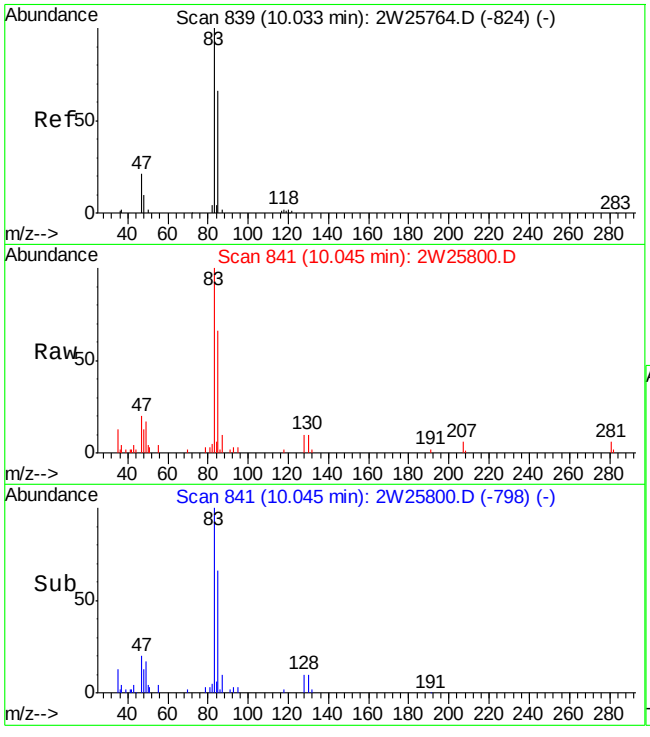


#19
ACETONE
Concen: 1.64 PPBV
RT: 6.93 min Scan# 329
Delta R.T. 0.09 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion: 58 Resp: 7404

Ion	Ratio	Lower	Upper
58	100		
43	234.1	281.6	321.6#

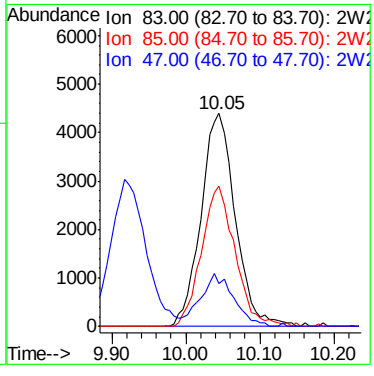


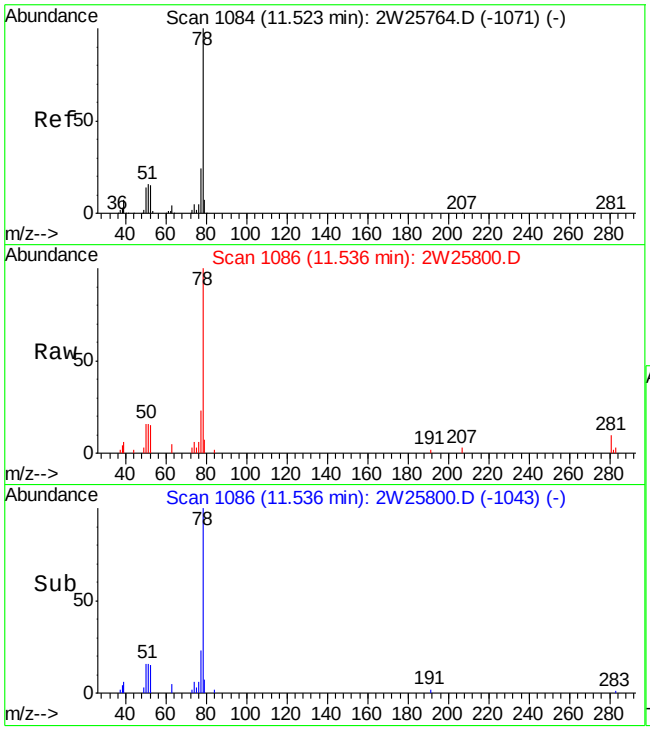


#41
CHLOROFORM
Concen: 0.72 PPBV
RT: 10.05 min Scan# 841
Delta R.T. 0.01 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion: 83 Resp: 13853

Ion	Ratio	Lower	Upper
83	100		
85	64.7	44.9	84.9
47	24.4	2.0	42.0

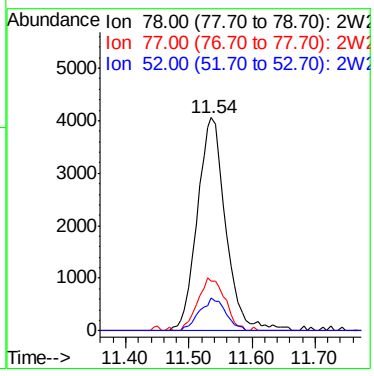


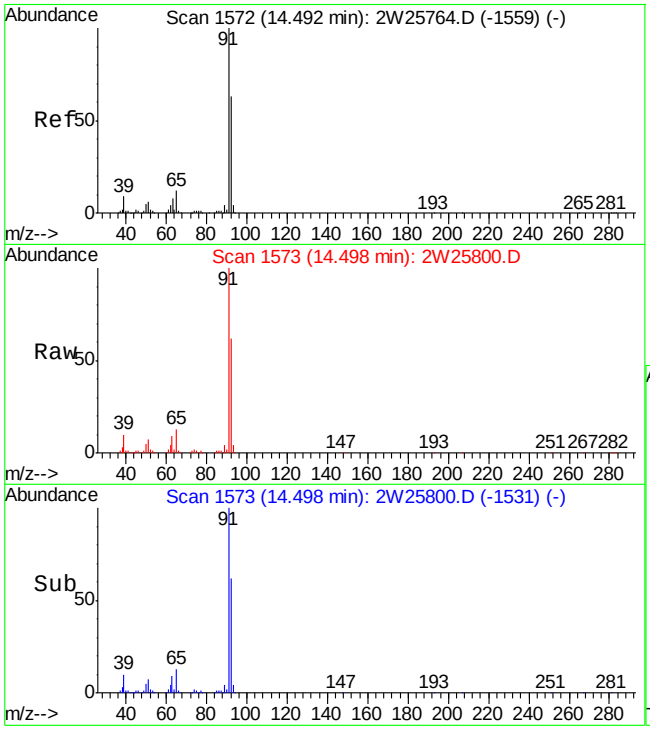


#47
BENZENE
Concen: 0.49 PPBV
RT: 11.54 min Scan# 1086
Delta R.T. 0.01 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion: 78 Resp: 12673

Ion	Ratio	Lower	Upper
78	100		
77	23.5	3.5	43.5
52	14.2	0.0	34.5

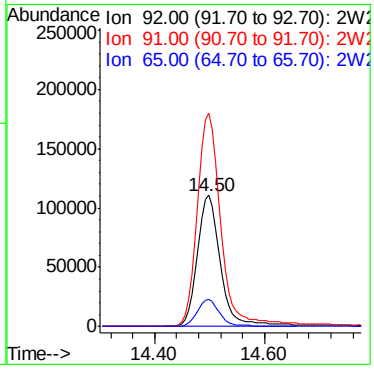


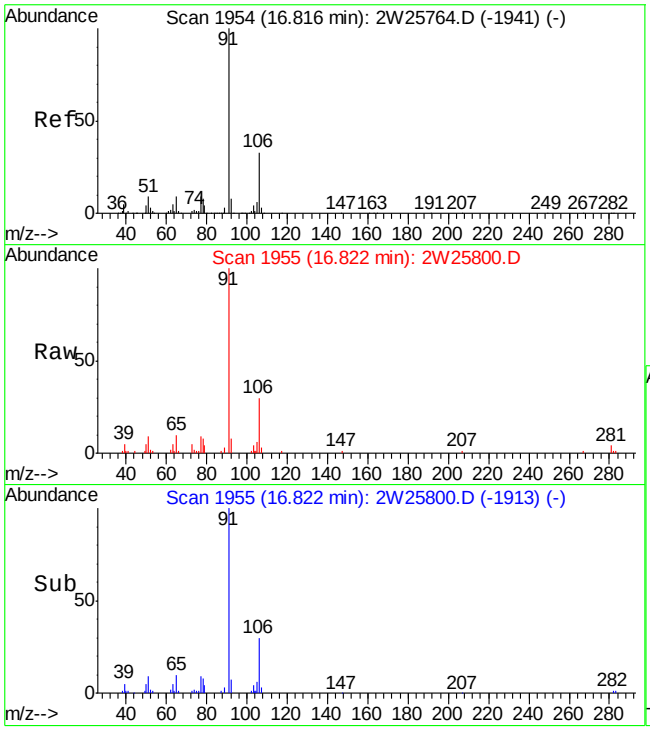


#60
TOLUENE
Concen: 19.10 PPBV
RT: 14.50 min Scan# 1573
Delta R.T. 0.01 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion: 92 Resp: 322425

Ion	Ratio	Lower	Upper
92	100		
91	168.1	143.7	183.7
65	20.3	0.0	38.6

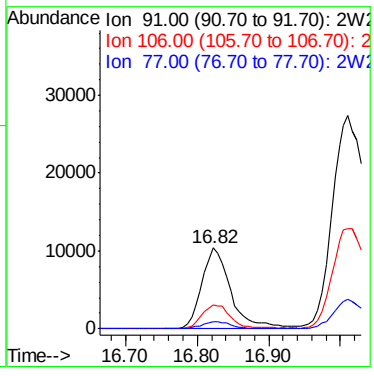


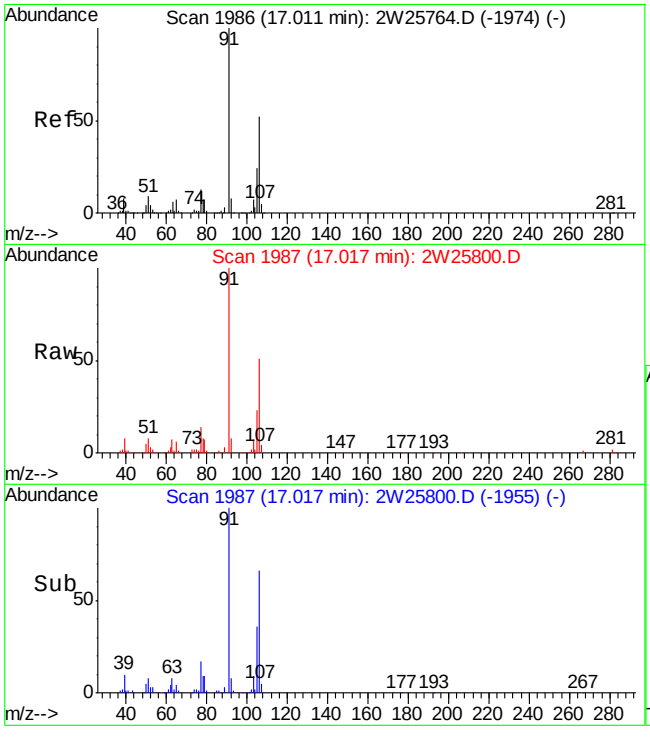


#71
ETHYLBENZENE
Concen: 0.97 PPBV
RT: 16.82 min Scan# 1955
Delta R.T. 0.01 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion: 91 Resp: 29301

Ion	Ratio	Lower	Upper
91	100		
106	29.7	12.4	52.4
77	9.1	0.0	28.6

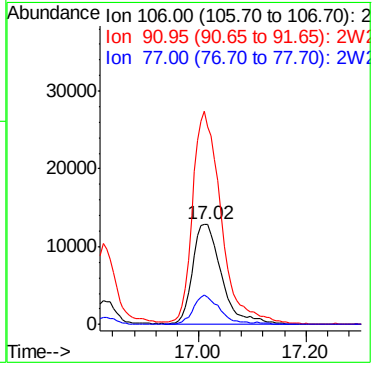


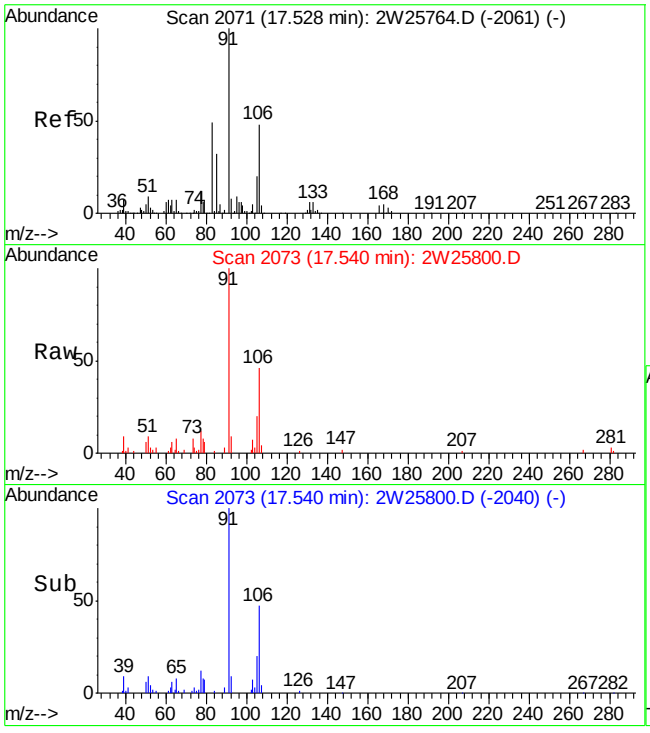


#72
m,p-XYLENE
Concen: 4.12 PPBV
RT: 17.02 min Scan# 1987
Delta R.T. 0.01 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion:106 Resp: 48502

Ion	Ratio	Lower	Upper
106	100		
91	196.5	155.5	233.3
77	26.6	20.4	30.6

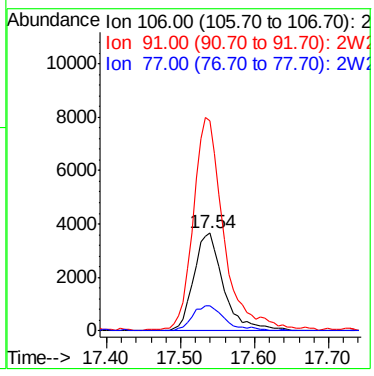


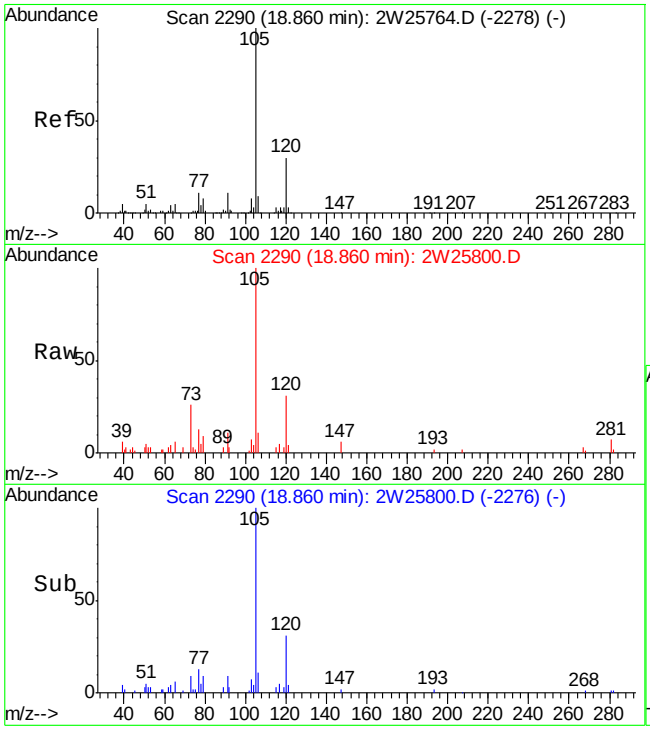


#73
o-XYLENE
Concen: 0.91 PPBV
RT: 17.54 min Scan# 2073
Delta R.T. 0.01 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion:106 Resp: 10109

Ion	Ratio	Lower	Upper
106	100		
91	225.0	189.0	229.0
77	28.3	5.7	45.7

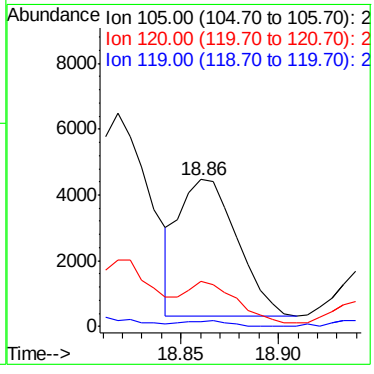


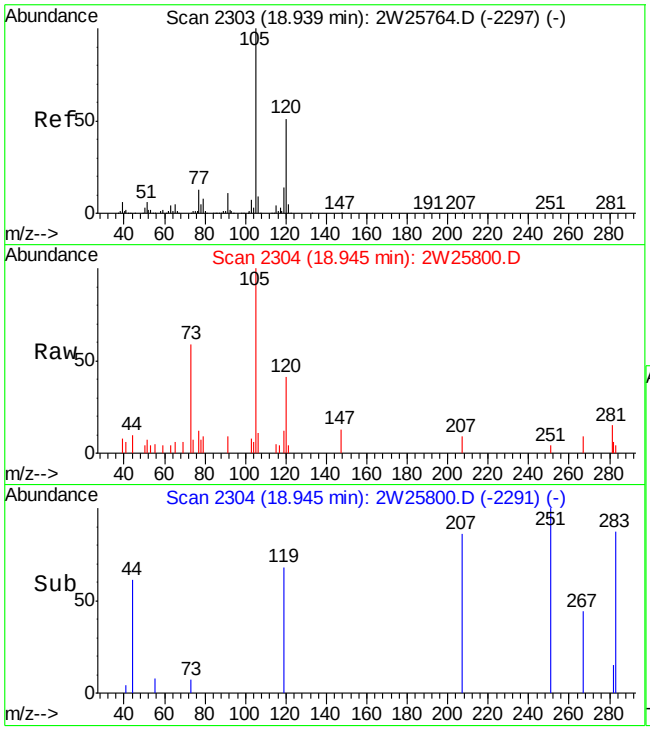


#82
4-ETHYLTOLUENE
Concen: 0.38 PPBV
RT: 18.86 min Scan# 2290
Delta R.T. 0.00 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion:105 Resp: 8534

Ion	Ratio	Lower	Upper
105	100		
120	28.9	10.4	50.4
119	3.1	0.0	22.6

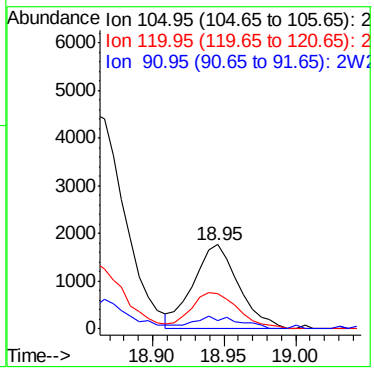


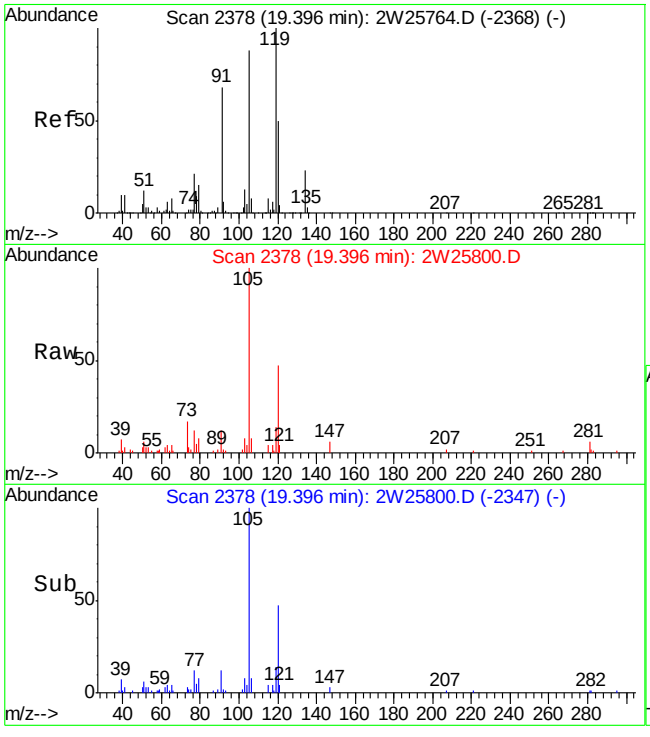


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.19 PPBV
RT: 18.95 min Scan# 2304
Delta R.T. 0.01 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion:105 Resp: 3911

Ion	Ratio	Lower	Upper
105	100		
120	45.3	30.1	70.1
91	15.2	0.0	30.6

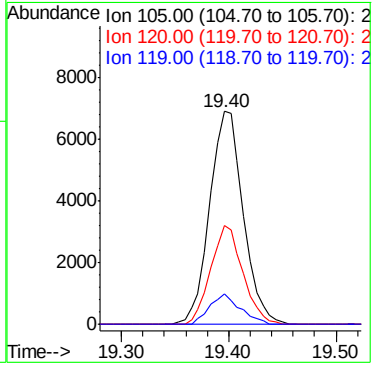




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.83 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. 0.00 min
Lab File: 2W25800.D
Acq: 5 Oct 2009 11:31 pm

Tgt Ion:105 Resp: 15023

Ion	Ratio	Lower	Upper
105	100		
120	44.5	38.0	78.0
119	13.1	102.8	142.8#



Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 10/08/09 13:12

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25792.D Vial: 11
Acq On : 5 Oct 2009 4:09 pm Operator: YOUMINH
Sample : JA28238-12 Inst : MS2W
Misc : MS86174,V2W1086,148,,,,1.48 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:13 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

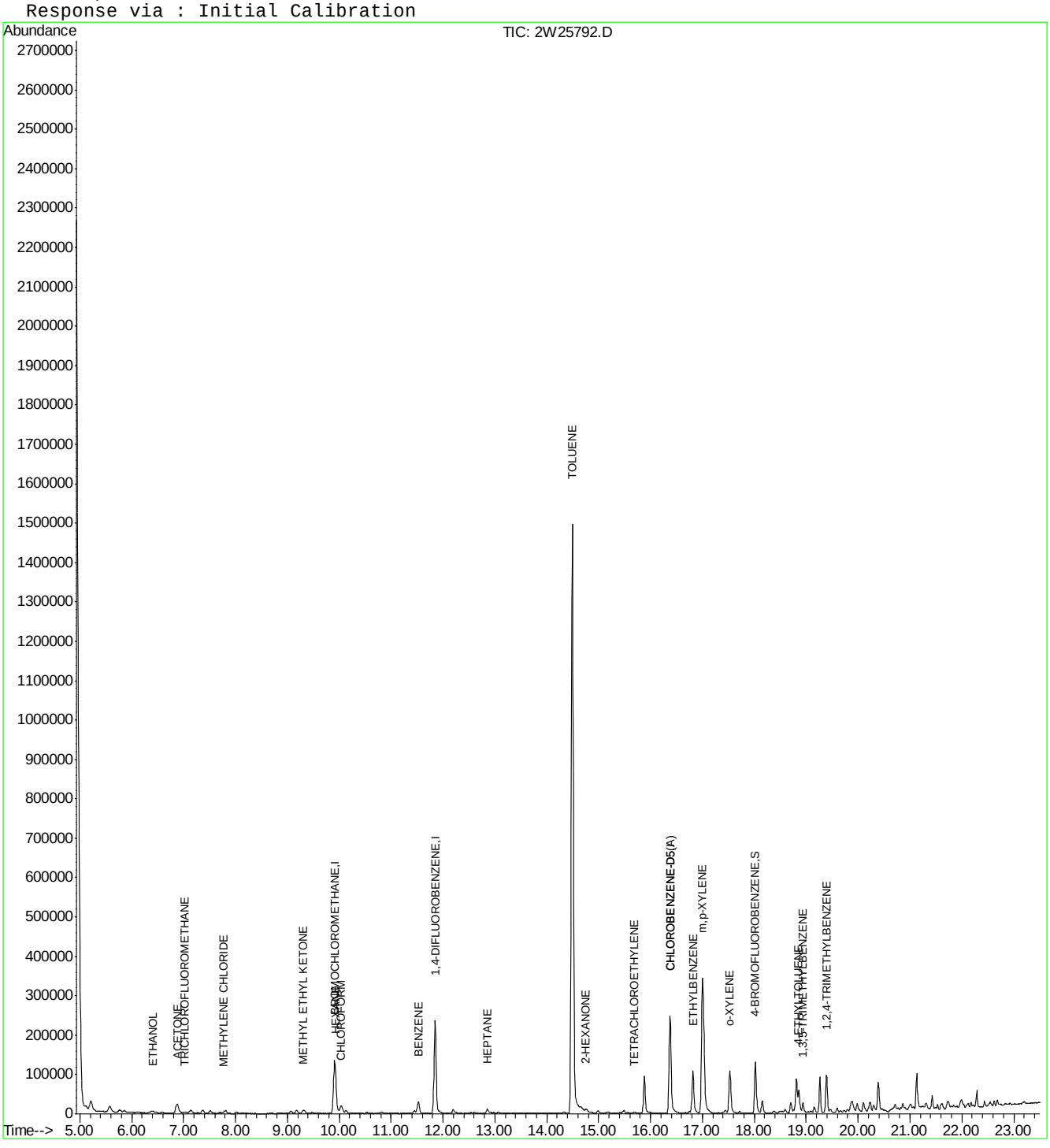
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	68996	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	292860	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	129767	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	129767	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	64490	5.06	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.20%			
Target Compounds						Qvalue
17) TRICHLOROFLUOROMETHANE	7.03	101	4669	0.14	PPBV	94
19) ACETONE	6.88	58	18186	4.01	PPBV #	63
26) ETHANOL	6.41	45	13556m	4.83	PPBV	
28) METHYLENE CHLORIDE	7.76	84	1931	0.23	PPBV	98
35) HEXANE	9.94	57	7324	0.63	PPBV	95
38) METHYL ETHYL KETONE	9.31	72	6334	1.76	PPBV #	81
41) CHLOROFORM	10.03	83	20665	1.08	PPBV	99
47) BENZENE	11.52	78	40506	1.50	PPBV	99
56) HEPTANE	12.86	43	4790	0.45	PPBV	99
60) TOLUENE	14.49	92	1093519	61.88	PPBV	94
64) 2-HEXANONE	14.75	58	2171	0.38	PPBV	92
65) TETRACHLOROETHYLENE	15.69	164	1084	0.09	PPBV	96
71) ETHYLBENZENE	16.82	91	125584	4.00	PPBV	98
72) m,p-XYLENE	17.00	106	208074	17.02	PPBV	93
73) o-XYLENE	17.53	106	45082	3.91	PPBV	91
82) 4-ETHYLTOLUENE	18.85	105	42204	1.79	PPBV	98
83) 1,3,5-TRIMETHYLBENZENE	18.93	105	18207	0.84	PPBV	97
85) 1,2,4-TRIMETHYLBENZENE	19.39	105	72895	3.86	PPBV #	27

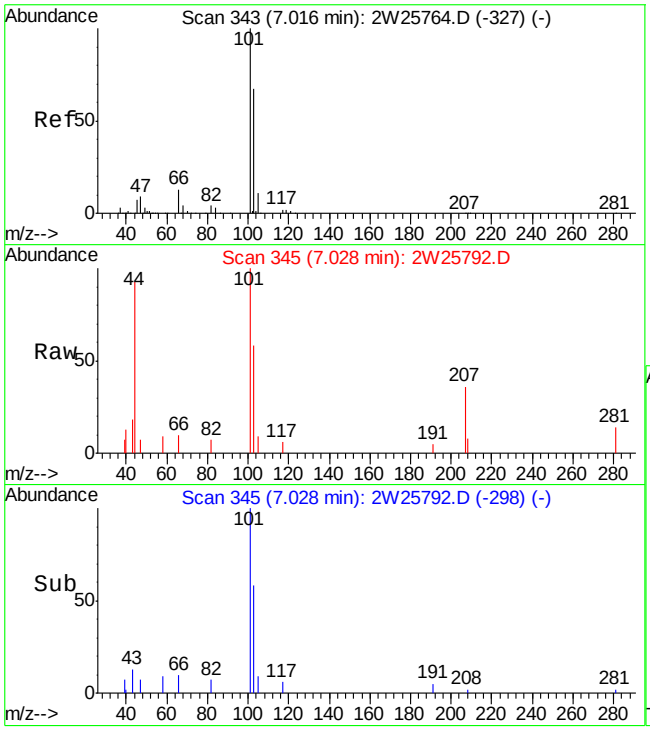
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25792.D Vial: 11
Acq On : 5 Oct 2009 4:09 pm Operator: YOUMINH
Sample : JA28238-12 Inst : MS2W
Misc : MS86174,V2W1086,148,,,,1.48 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:36 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

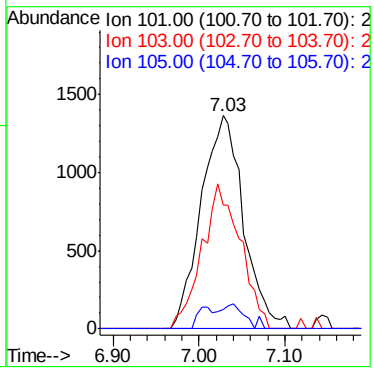


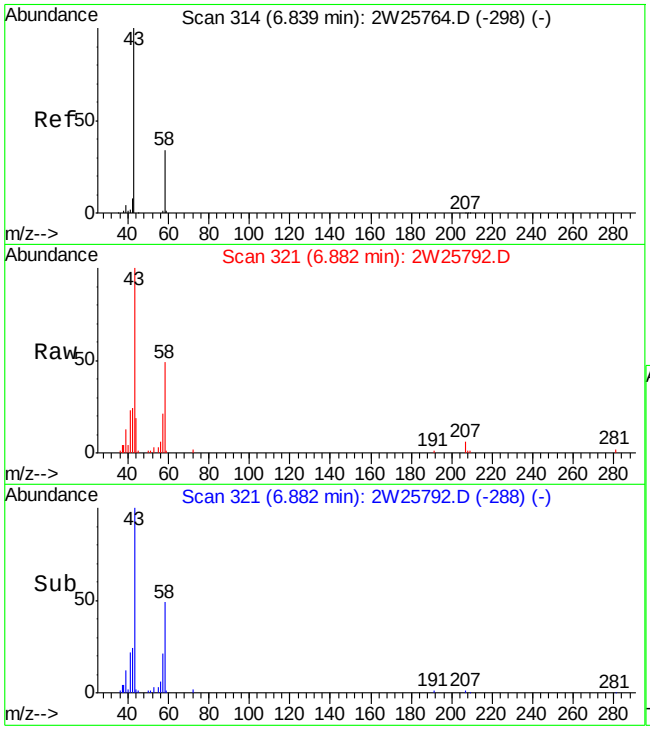


#17
TRICHLOROFLUOROMETHANE
Concen: 0.14 PPBV
RT: 7.03 min Scan# 345
Delta R.T. 0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion:101 Resp: 4669

Ion	Ratio	Lower	Upper
101	100		
103	61.6	46.0	86.0
105	6.3	0.0	31.0

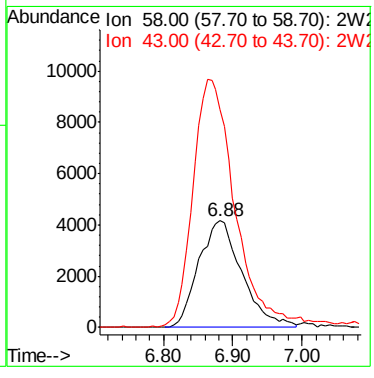


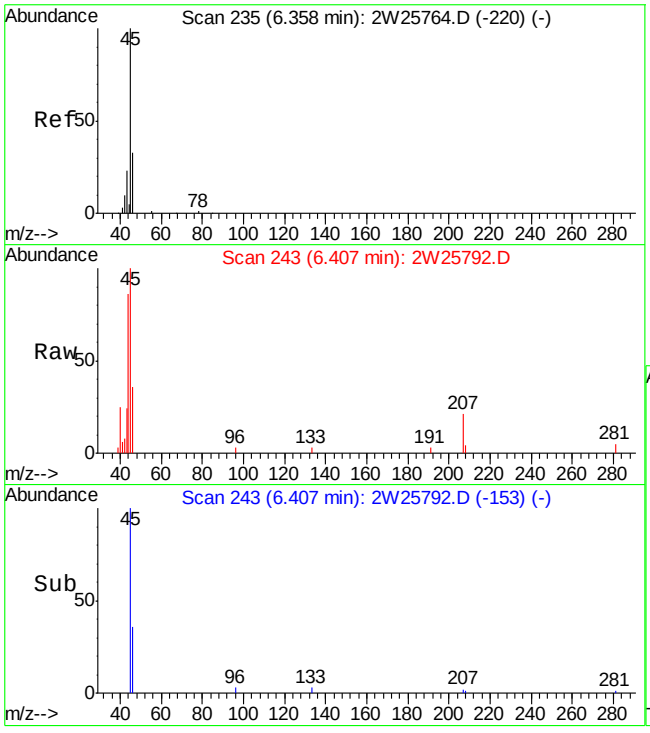


#19
ACETONE
Concen: 4.01 PPBV
RT: 6.88 min Scan# 321
Delta R.T. 0.04 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 58 Resp: 18186

Ion	Ratio	Lower	Upper
58	100		
43	228.1	281.6	321.6#

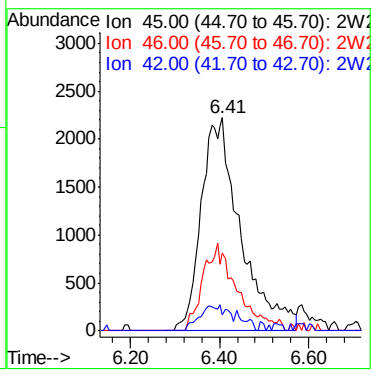


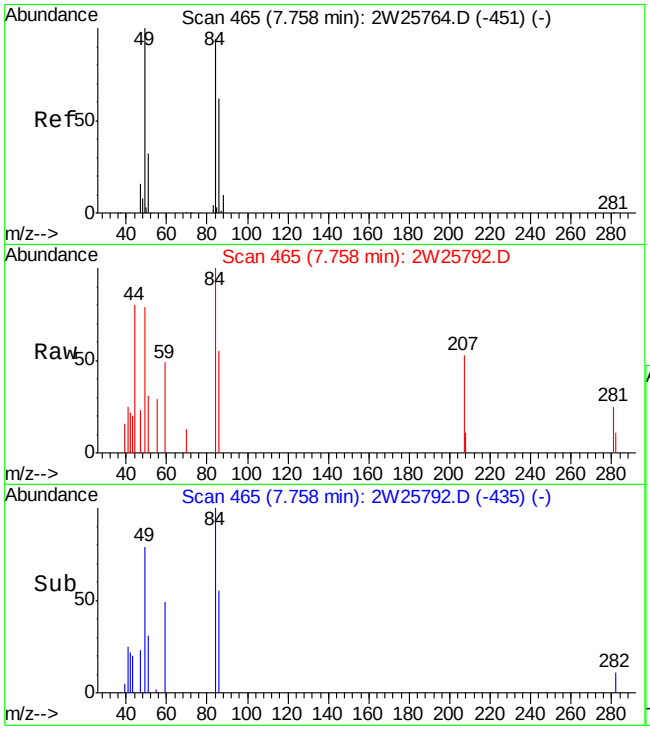


#26
ETHANOL
Concen: 4.83 PPBV m
RT: 6.41 min Scan# 243
Delta R.T. 0.05 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 45 Resp: 13556

Ion	Ratio	Lower	Upper
45	100		
46	0.0	17.8	57.8#
42	0.0	0.0	29.6

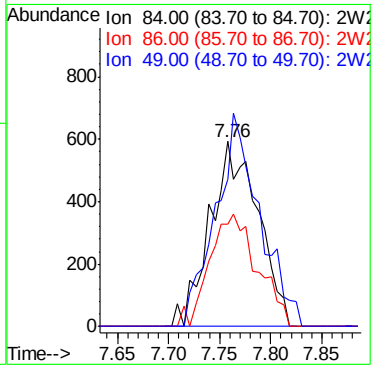


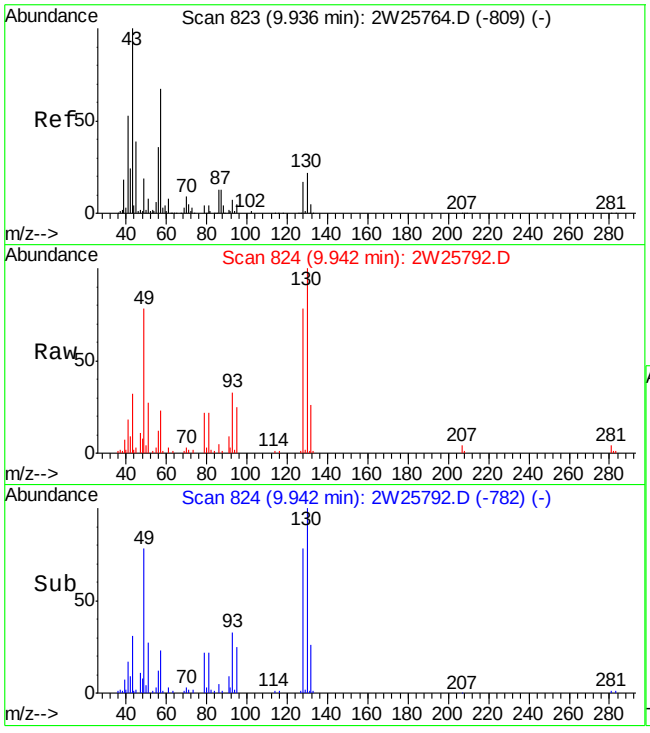


#28
METHYLENE CHLORIDE
Concen: 0.23 PPBV
RT: 7.76 min Scan# 465
Delta R.T. 0.00 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 84 Resp: 1931

Ion	Ratio	Lower	Upper
84	100		
86	60.8	45.3	85.3
49	105.5	0.0	305.8

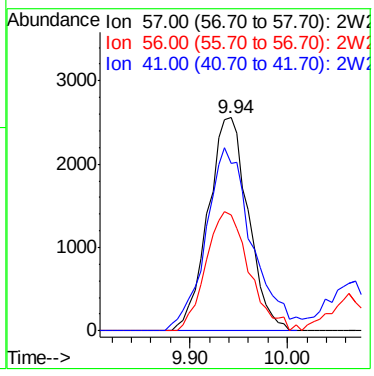


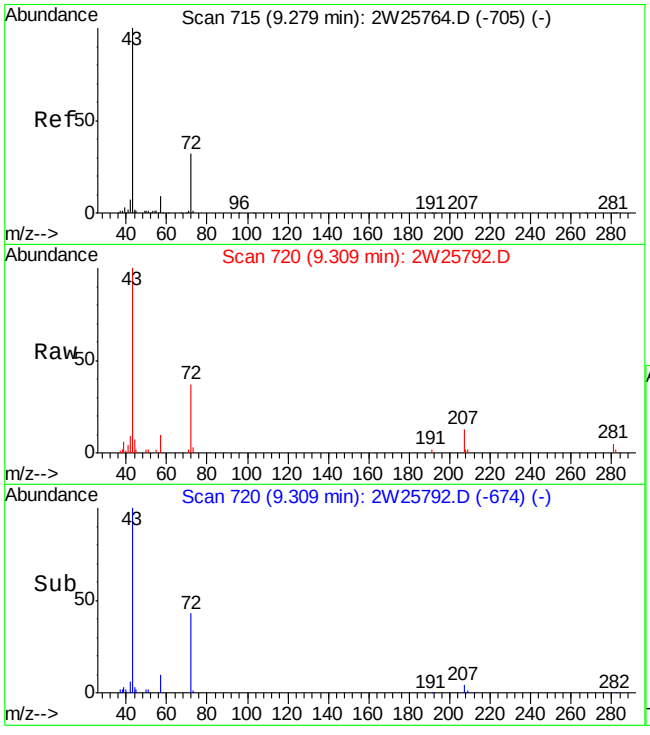


#35
HEXANE
Concen: 0.63 PPBV
RT: 9.94 min Scan# 824
Delta R.T. 0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 57 Resp: 7324

Ion	Ratio	Lower	Upper
57	100		
56	60.2	32.6	72.6
41	98.7	80.6	120.6

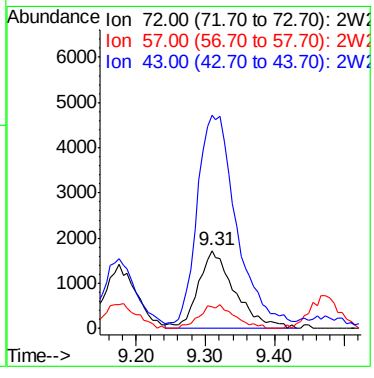


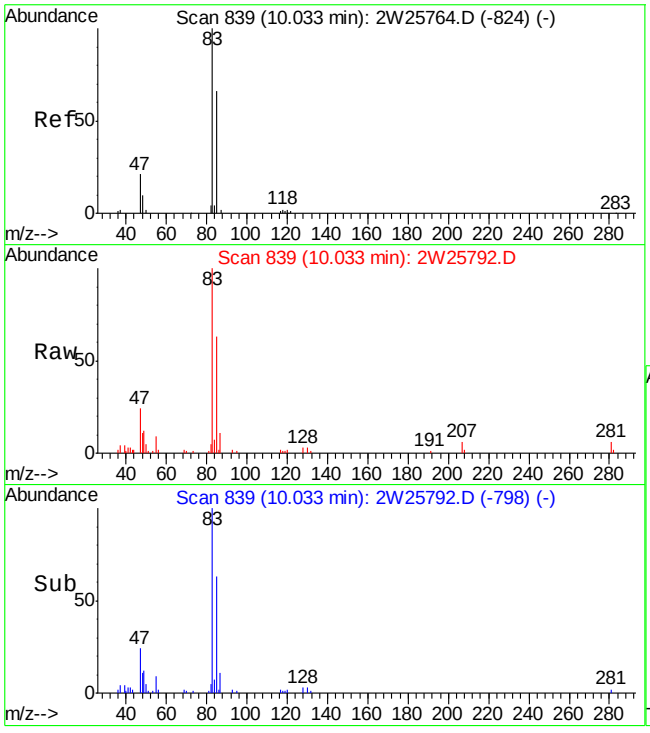


#38
METHYL ETHYL KETONE
Concen: 1.76 PPBV
RT: 9.31 min Scan# 720
Delta R.T. 0.03 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 72 Resp: 6334

Ion	Ratio	Lower	Upper
72	100		
57	28.0	8.3	48.3
43	273.3	294.9	334.9#

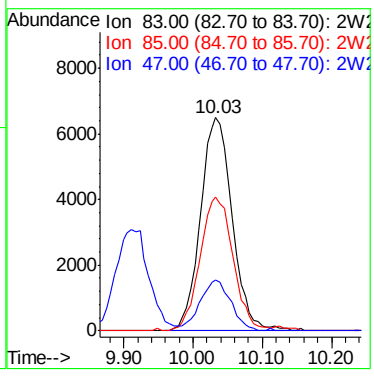


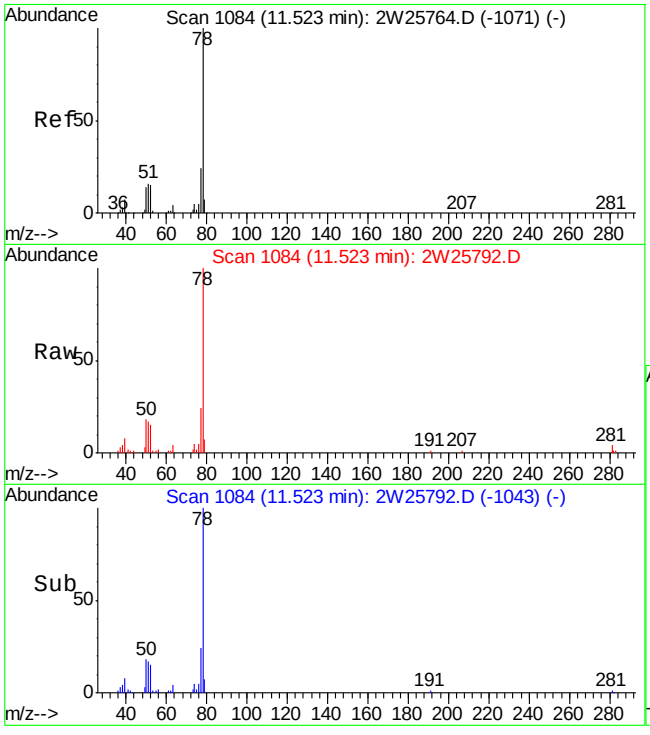


#41
CHLOROFORM
Concen: 1.08 PPBV
RT: 10.03 min Scan# 839
Delta R.T. 0.00 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 83 Resp: 20665

Ion	Ratio	Lower	Upper
83	100		
85	65.1	44.9	84.9
47	22.9	2.0	42.0

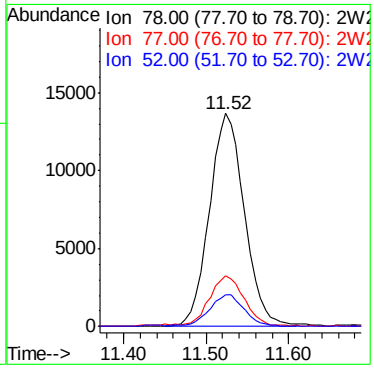


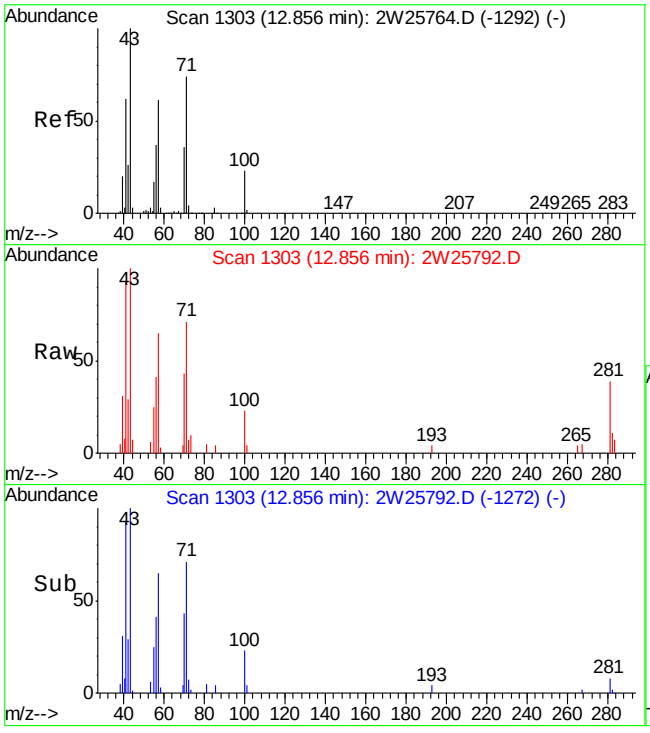


#47
BENZENE
Concen: 1.50 PPBV
RT: 11.52 min Scan# 1084
Delta R.T. 0.00 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 78 Resp: 40506

Ion	Ratio	Lower	Upper
78	100		
77	24.1	3.5	43.5
52	15.0	0.0	34.5

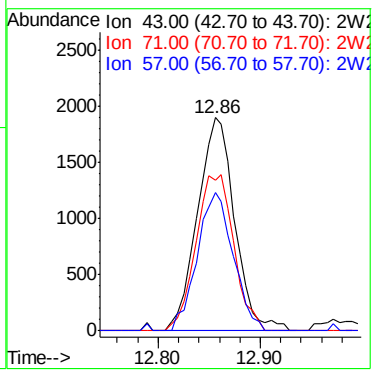


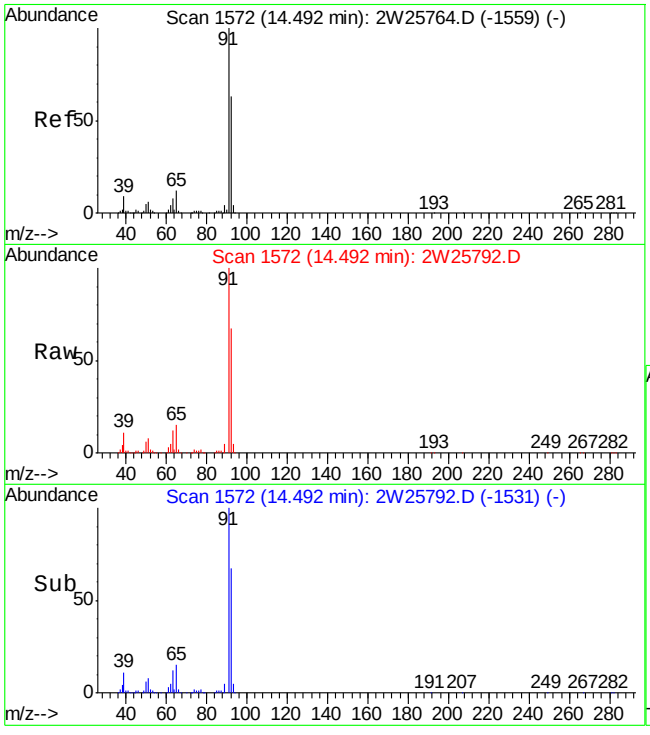


#56
HEPTANE
Concen: 0.45 PPBV
RT: 12.86 min Scan# 1303
Delta R.T. 0.00 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 43 Resp: 4790

Ion	Ratio	Lower	Upper
43	100		
71	74.6	54.6	94.6
57	62.7	40.6	80.6

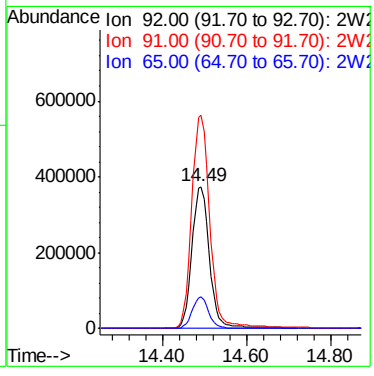


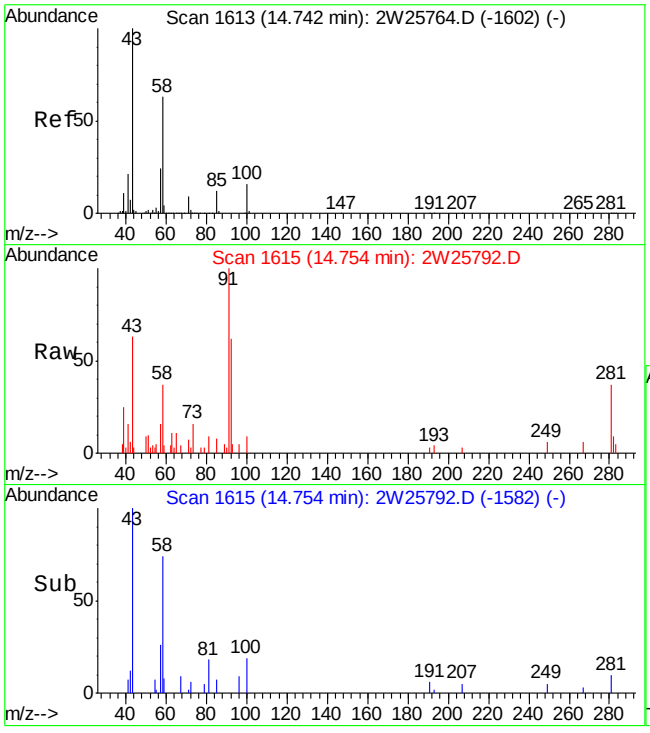


#60
TOLUENE
Concen: 61.88 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. 0.00 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 92 Resp: 1093519

Ion	Ratio	Lower	Upper
92	100		
91	155.6	143.7	183.7
65	21.5	0.0	38.6

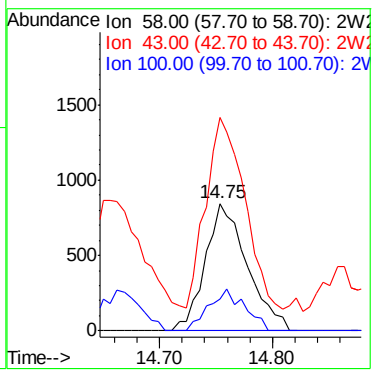


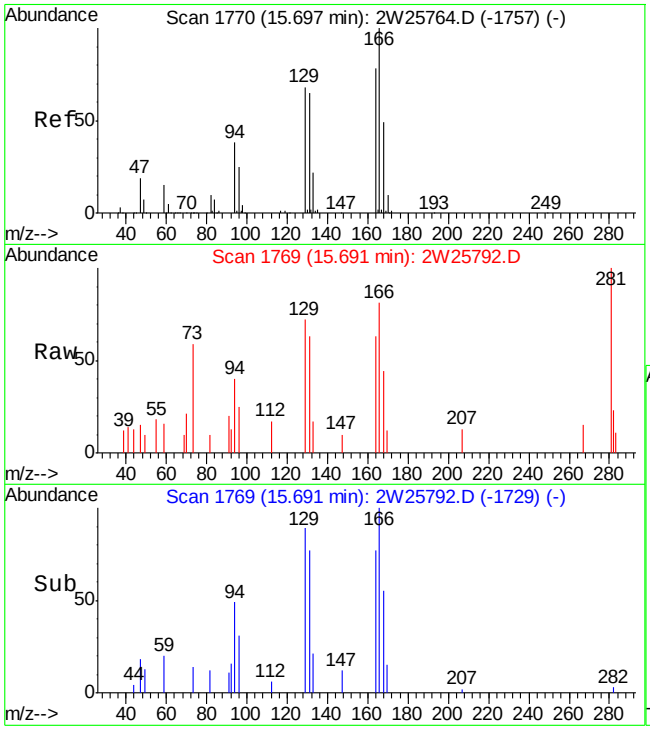


#64
2-HEXANONE
Concen: 0.38 PPBV
RT: 14.75 min Scan# 1615
Delta R.T. 0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 58 Resp: 2171

Ion	Ratio	Lower	Upper
58	100		
43	172.3	141.7	181.7
100	28.2	5.5	45.5

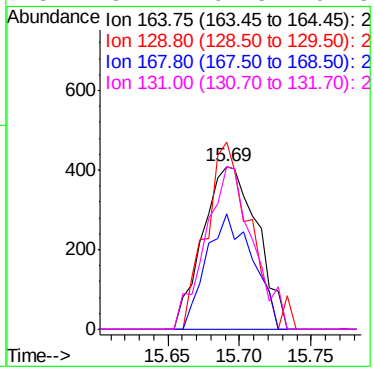


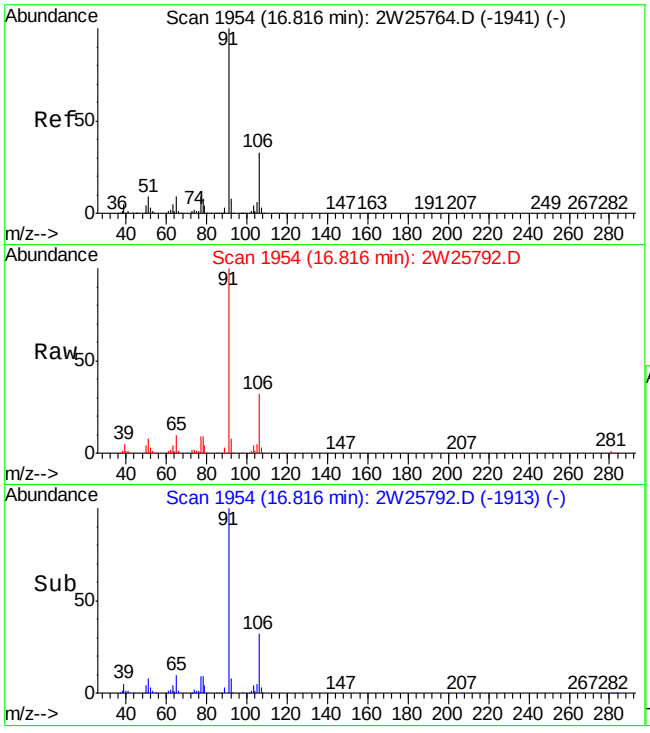


#65
TETRACHLOROETHYLENE
Concen: 0.09 PPBV
RT: 15.69 min Scan# 1769
Delta R.T. -0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion:164 Resp: 1084

Ion	Ratio	Lower	Upper
164	100		
129	92.9	67.5	107.5
168	60.2	42.6	82.6
131	87.1	64.8	104.8

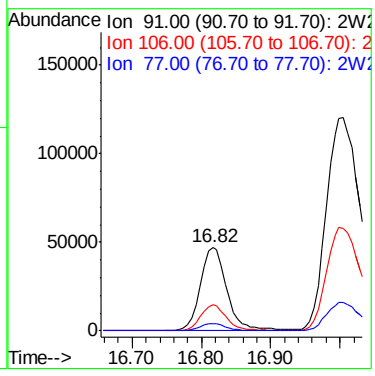


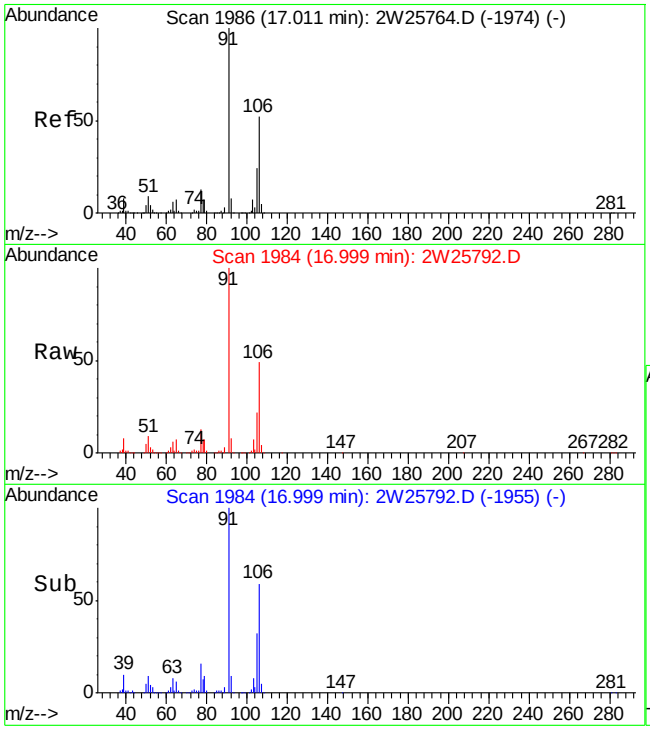


#71
ETHYLBENZENE
Concen: 4.00 PPBV
RT: 16.82 min Scan# 1954
Delta R.T. 0.00 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion: 91 Resp: 125584

Ion	Ratio	Lower	Upper
91	100		
106	31.2	12.4	52.4
77	8.6	0.0	28.6

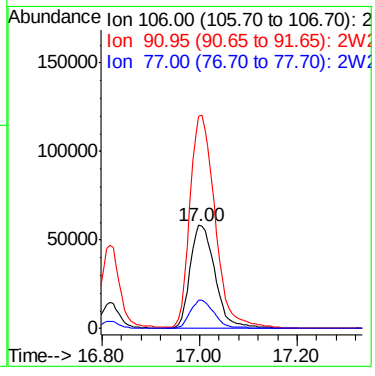


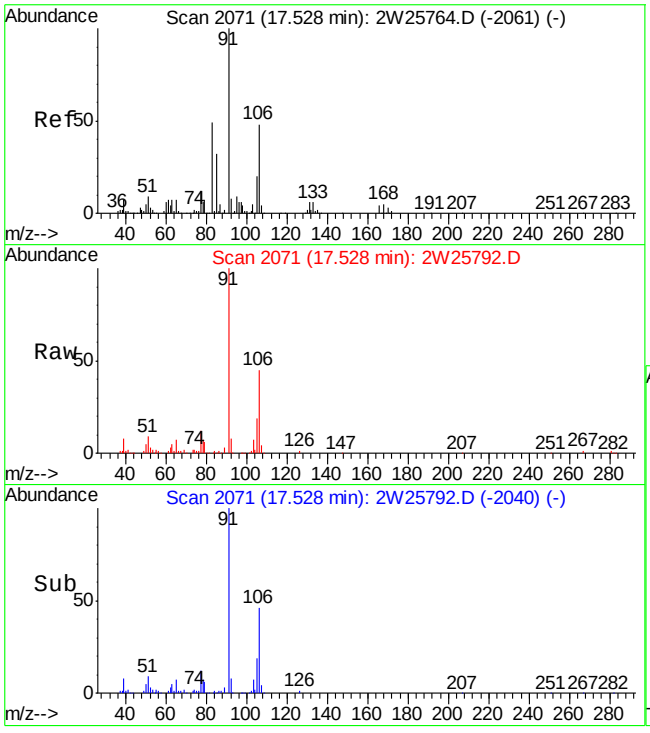


#72
m,p-XYLENE
Concen: 17.02 PPBV
RT: 17.00 min Scan# 1984
Delta R.T. -0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion:106 Resp: 208074

Ion	Ratio	Lower	Upper
106	100		
91	205.7	155.5	233.3
77	27.2	20.4	30.6

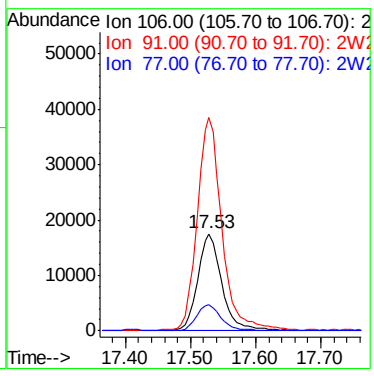


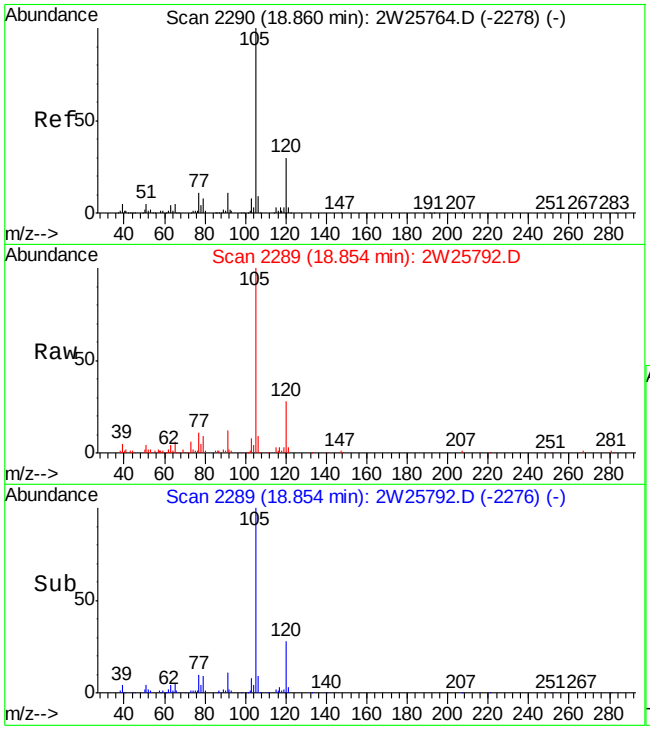


#73
o-XYLENE
Concen: 3.91 PPBV
RT: 17.53 min Scan# 2071
Delta R.T. 0.00 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion:106 Resp: 45082

Ion	Ratio	Lower	Upper
106	100		
91	224.0	189.0	229.0
77	27.8	5.7	45.7

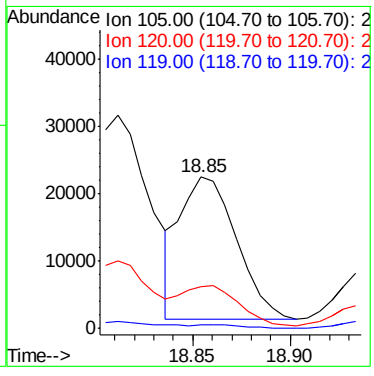


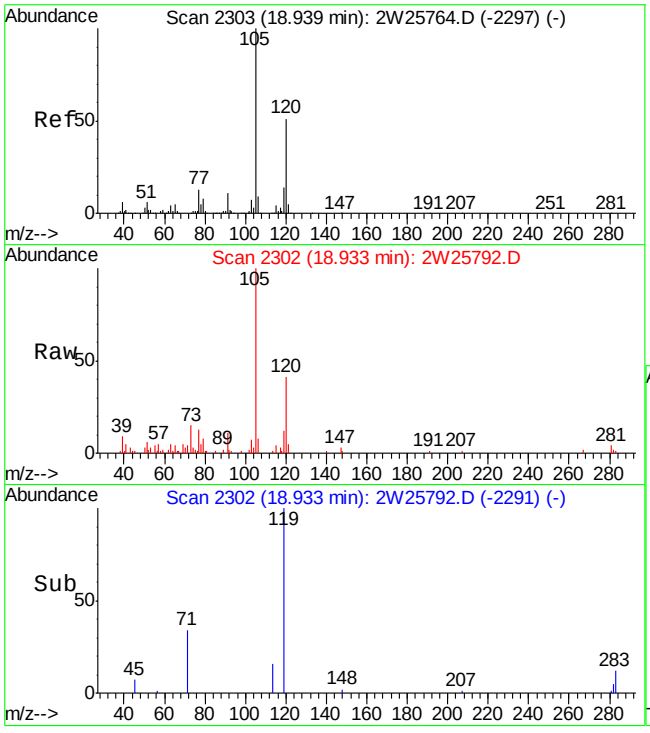


#82
4-ETHYLTOLUENE
Concen: 1.79 PPBV
RT: 18.85 min Scan# 2289
Delta R.T. -0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion:105 Resp: 42204

Ion	Ratio	Lower	Upper
105	100		
120	29.3	10.4	50.4
119	2.2	0.0	22.6

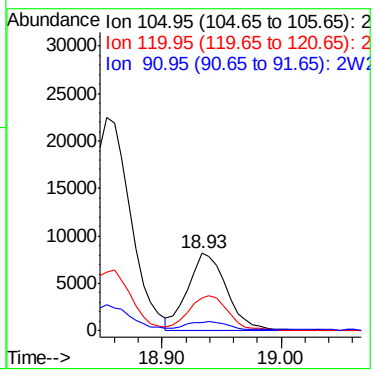


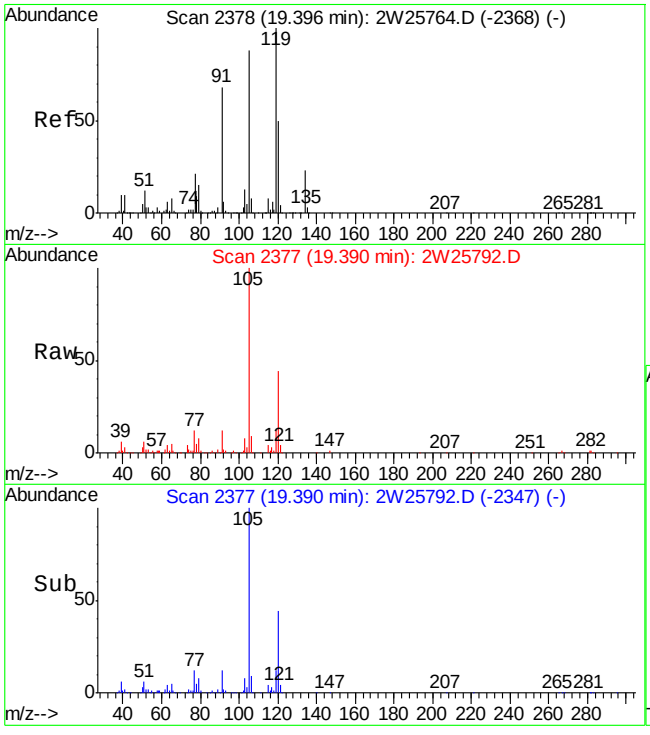


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.84 PPBV
RT: 18.93 min Scan# 2302
Delta R.T. -0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion:105 Resp: 18207

Ion	Ratio	Lower	Upper
105	100		
120	47.4	30.1	70.1
91	10.9	0.0	30.6

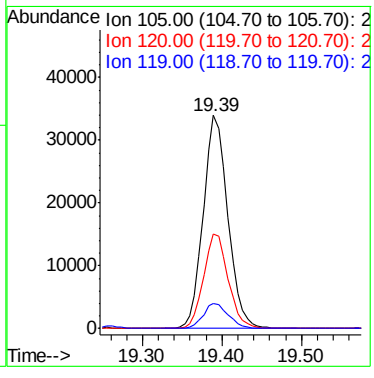




#85
1,2,4-TRIMETHYLBENZENE
Concen: 3.86 PPBV
RT: 19.39 min Scan# 2377
Delta R.T. -0.01 min
Lab File: 2W25792.D
Acq: 5 Oct 2009 4:09 pm

Tgt Ion:105 Resp: 72895

Ion	Ratio	Lower	Upper
105	100		
120	44.1	38.0	78.0
119	12.1	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25801.D Vial: 4
Acq On : 6 Oct 2009 12:16 am Operator: YOUMINH
Sample : JA28238-12 Inst : MS2W
Misc : MS86174,V2W1086,50,,,,1.48 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:34 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

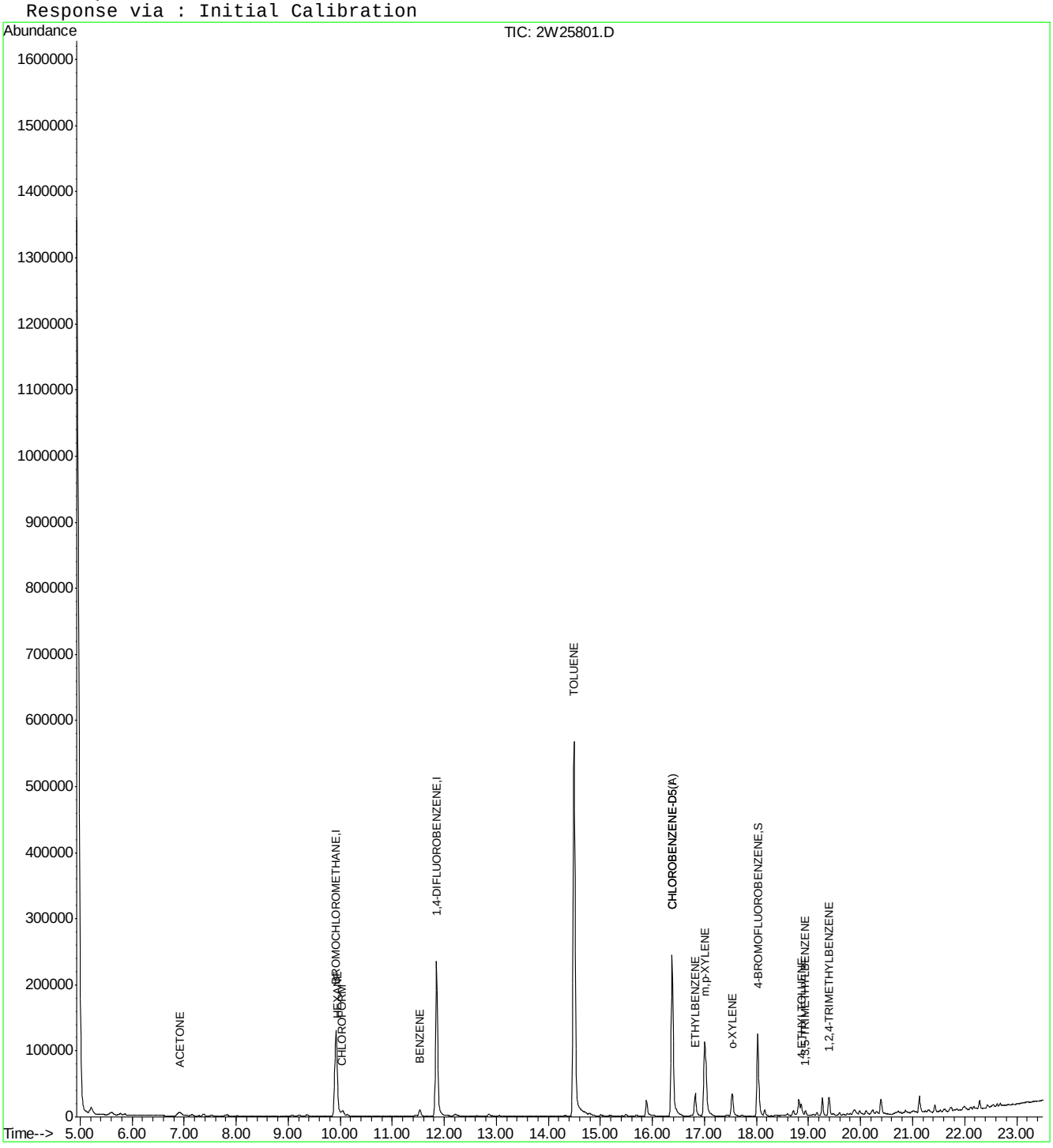
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	71955	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	302818	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	131146	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	131036	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	62742	4.87	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 97.40%			
Target Compounds						Qvalue
19) ACETONE	6.93	58	6526	1.38	PPBV #	59
35) HEXANE	9.95	57	2686	0.22	PPBV	94
41) CHLOROFORM	10.04	83	7447	0.37	PPBV	97
47) BENZENE	11.53	78	14628	0.52	PPBV	99
60) TOLUENE	14.49	92	415462	22.74	PPBV	100
71) ETHYLBENZENE	16.82	91	40933	1.29	PPBV	96
72) m,p-XYLENE	17.00	106	69835	5.65	PPBV	95
73) o-XYLENE	17.53	106	14844	1.27	PPBV	92
82) 4-ETHYLTOLUENE	18.86	105	11306	0.47	PPBV	91
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	5407	0.25	PPBV	94
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	21173	1.11	PPBV #	28

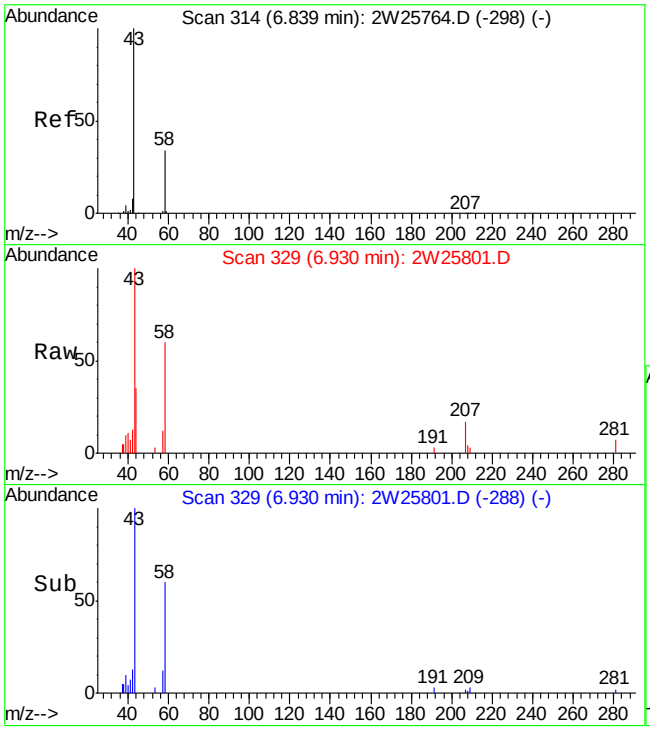
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25801.D Vial: 4
Acq On : 6 Oct 2009 12:16 am Operator: YOUMINH
Sample : JA28238-12 Inst : MS2W
Misc : MS86174,V2W1086,50,,,,1.48 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:48 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

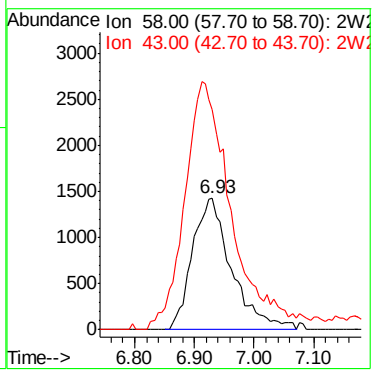


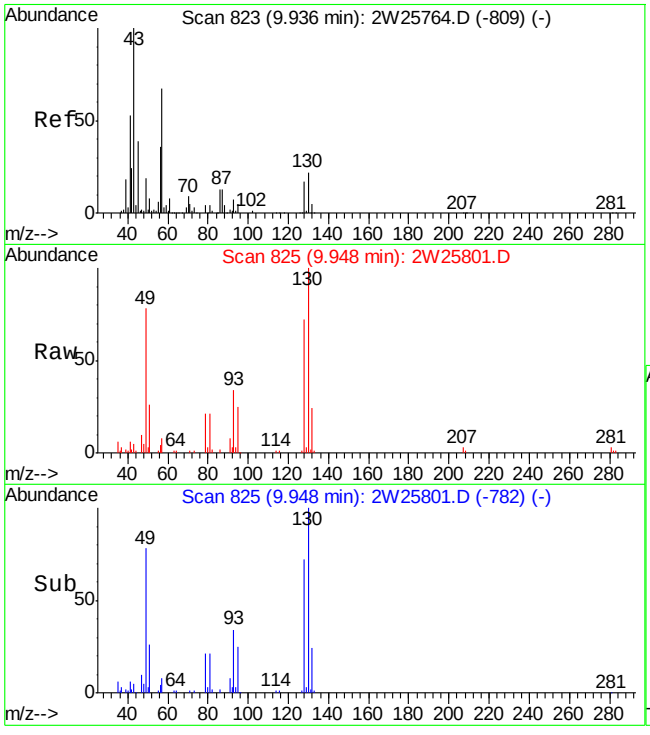


#19
ACETONE
Concen: 1.38 PPBV
RT: 6.93 min Scan# 329
Delta R.T. 0.09 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion: 58 Resp: 6526

Ion	Ratio	Lower	Upper
58	100		
43	221.5	281.6	321.6#

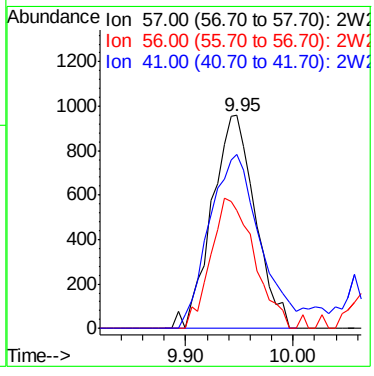


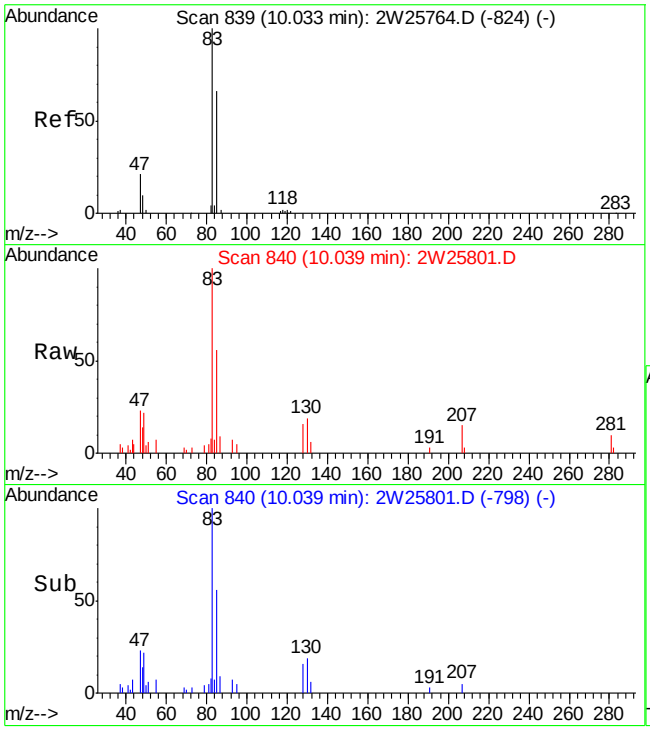


#35
HEXANE
Concen: 0.22 PPBV
RT: 9.95 min Scan# 825
Delta R.T. 0.01 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion: 57 Resp: 2686

Ion	Ratio	Lower	Upper
57	100		
56	61.5	32.6	72.6
41	97.8	80.6	120.6

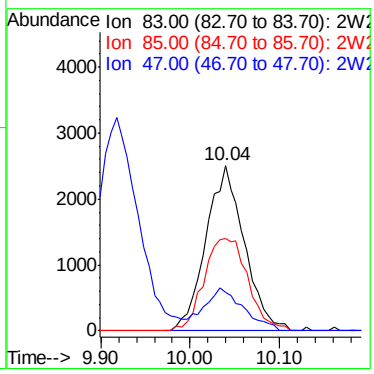


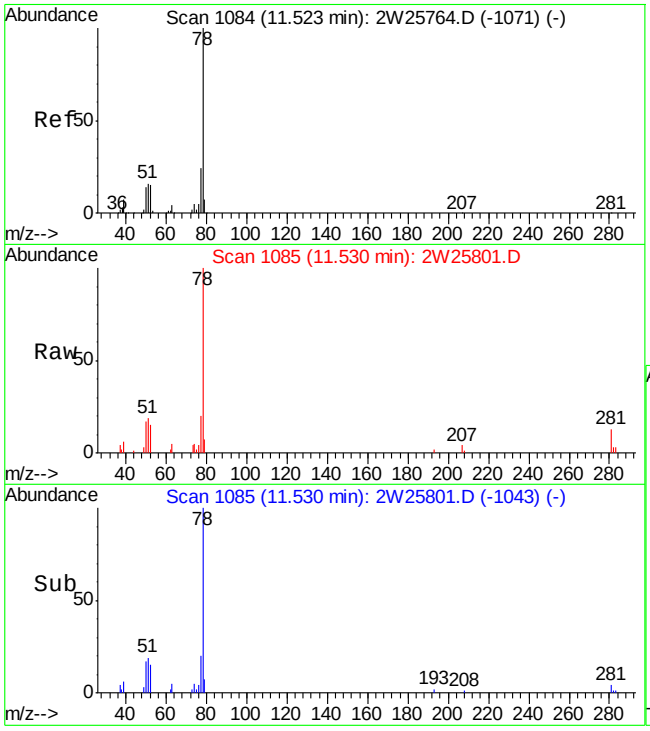


#41
CHLOROFORM
Concen: 0.37 PPBV
RT: 10.04 min Scan# 840
Delta R.T. 0.01 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion: 83 Resp: 7447

Ion	Ratio	Lower	Upper
83	100		
85	64.2	44.9	84.9
47	26.5	2.0	42.0

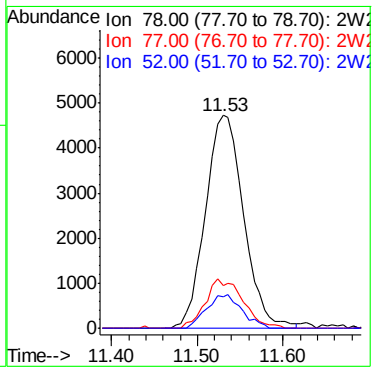


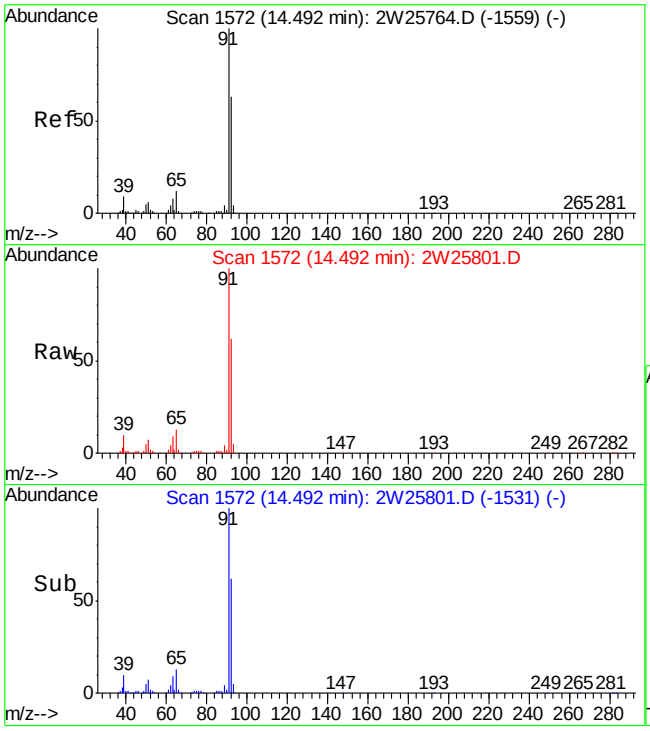


#47
BENZENE
Concen: 0.52 PPBV
RT: 11.53 min Scan# 1085
Delta R.T. 0.01 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion: 78 Resp: 14628

Ion	Ratio	Lower	Upper
78	100		
77	22.7	3.5	43.5
52	14.7	0.0	34.5

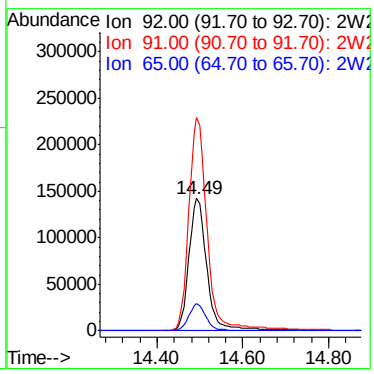


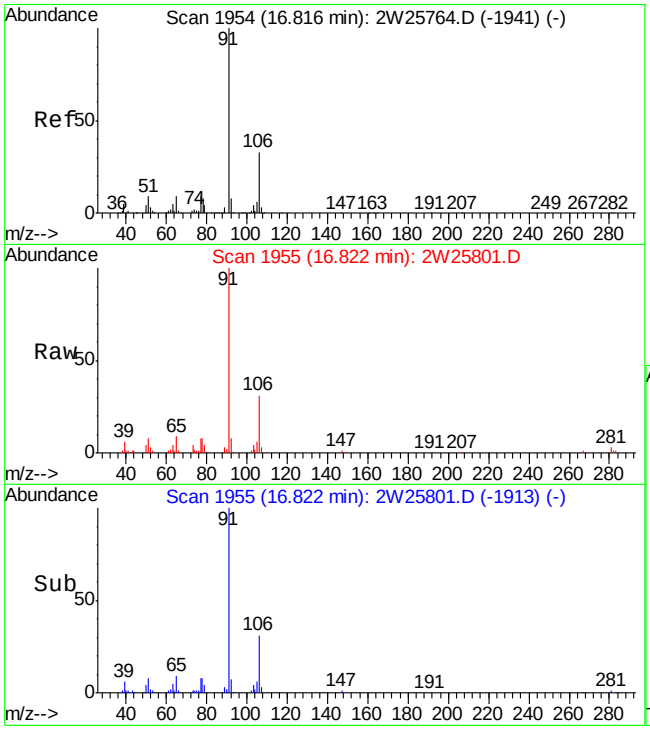


#60
TOLUENE
Concen: 22.74 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. 0.00 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion: 92 Resp: 415462

Ion	Ratio	Lower	Upper
92	100		
91	163.7	143.7	183.7
65	19.9	0.0	38.6

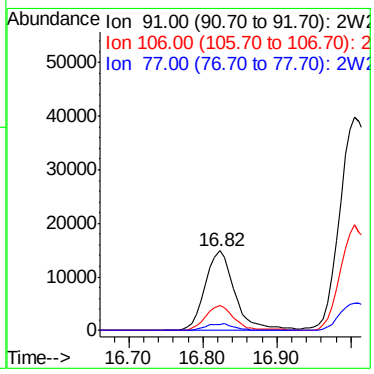


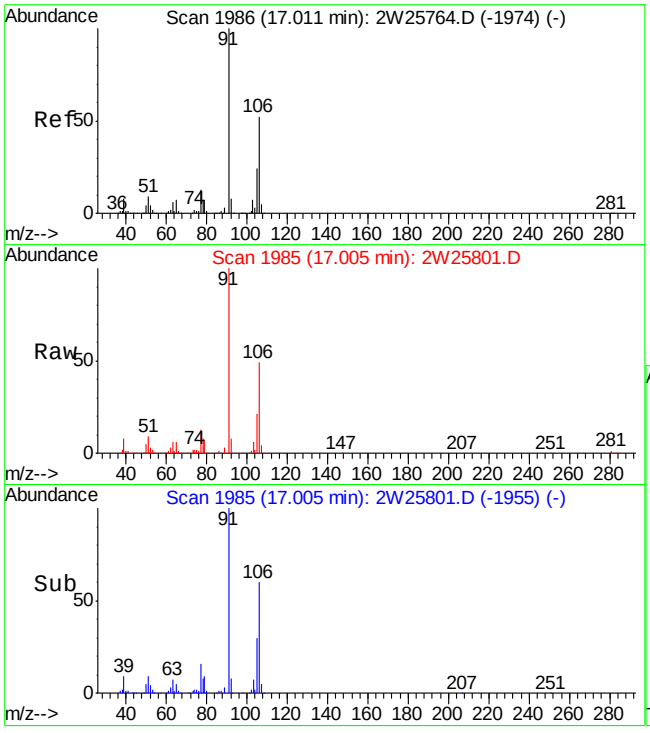


#71
ETHYLBENZENE
Concen: 1.29 PPBV
RT: 16.82 min Scan# 1955
Delta R.T. 0.01 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion: 91 Resp: 40933

Ion	Ratio	Lower	Upper
91	100		
106	29.6	12.4	52.4
77	8.5	0.0	28.6

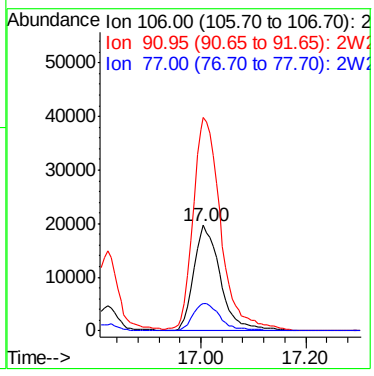


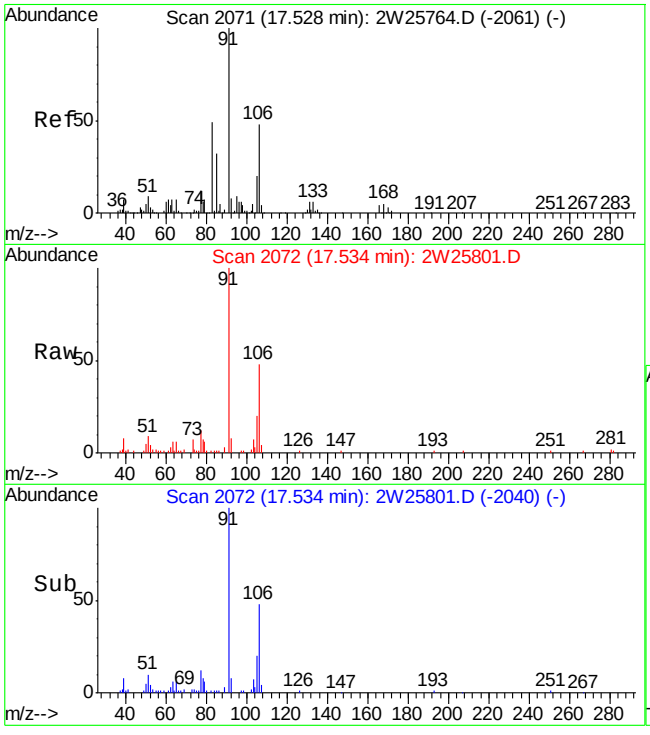


#72
m,p-XYLENE
Concen: 5.65 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.01 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion:106 Resp: 69835

Ion	Ratio	Lower	Upper
106	100		
91	202.6	155.5	233.3
77	26.1	20.4	30.6

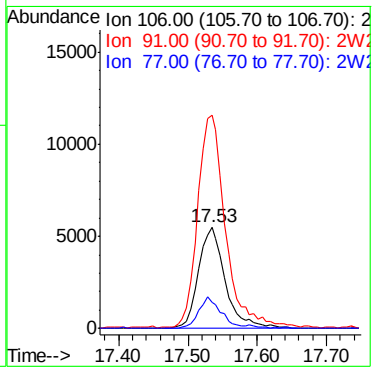


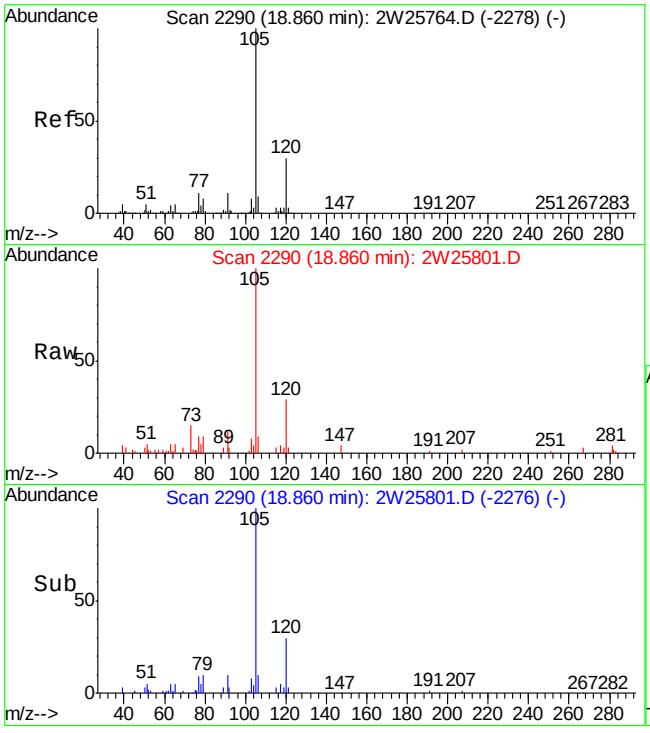


#73
o-XYLENE
Concen: 1.27 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. 0.01 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion:106 Resp: 14844

Ion	Ratio	Lower	Upper
106	100		
91	222.2	189.0	229.0
77	26.1	5.7	45.7

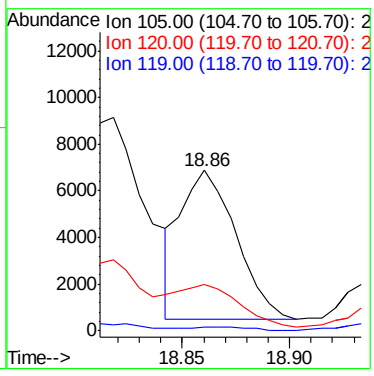


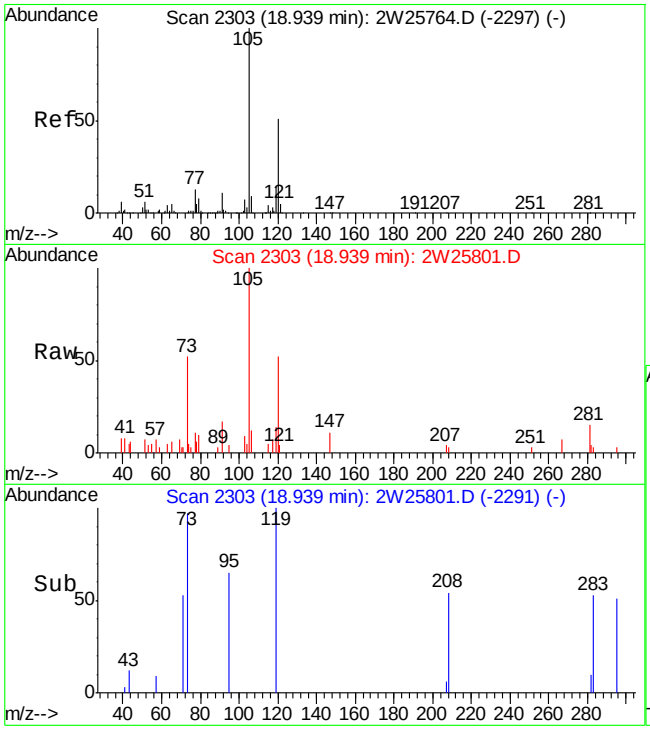


#82
4-ETHYLTOLUENE
Concen: 0.47 PPBV
RT: 18.86 min Scan# 2290
Delta R.T. 0.00 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion:105 Resp: 11306

Ion	Ratio	Lower	Upper
105	100		
120	35.4	10.4	50.4
119	3.2	0.0	22.6

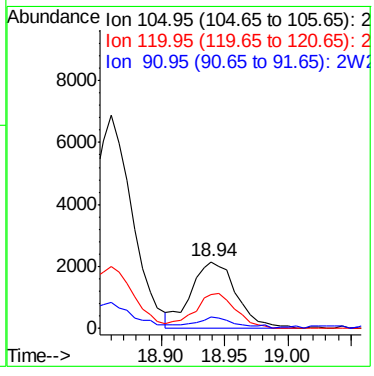


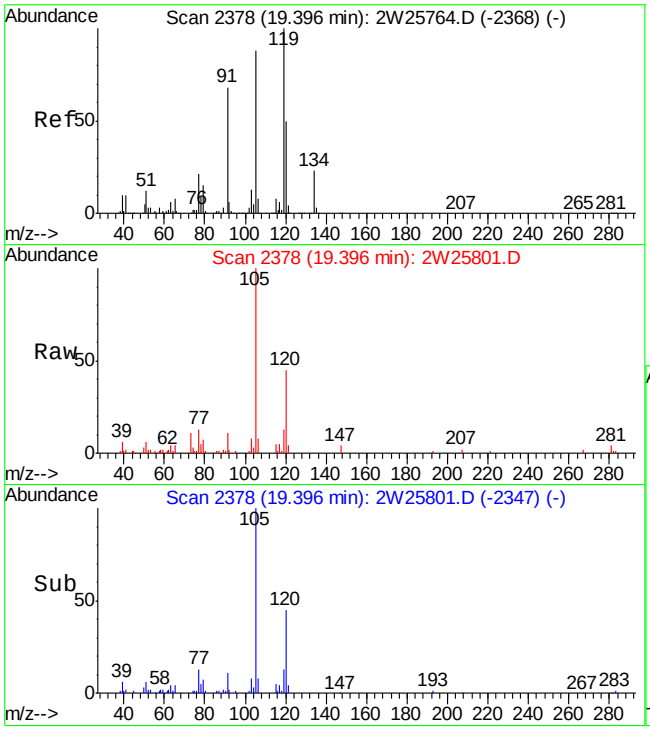


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.25 PPBV
RT: 18.94 min Scan# 2303
Delta R.T. 0.00 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion:105 Resp: 5407

Ion	Ratio	Lower	Upper
105	100		
120	47.6	30.1	70.1
91	16.2	0.0	30.6

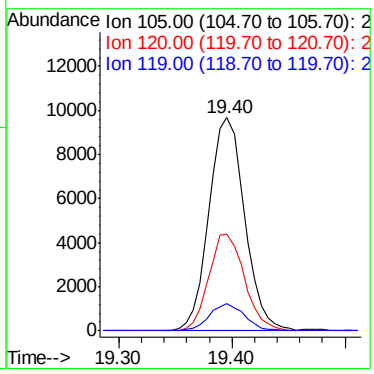




#85
1,2,4-TRIMETHYLBENZENE
Concen: 1.11 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. 0.00 min
Lab File: 2W25801.D
Acq: 6 Oct 2009 12:16 am

Tgt Ion:105 Resp: 21173

Ion	Ratio	Lower	Upper
105	100		
120	45.2	38.0	78.0
119	12.6	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25793.D Vial: 12
Acq On : 5 Oct 2009 4:52 pm Operator: YOUMINH
Sample : JA28238-13 Inst : MS2W
Misc : MS86174,V2W1086,100,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:15 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

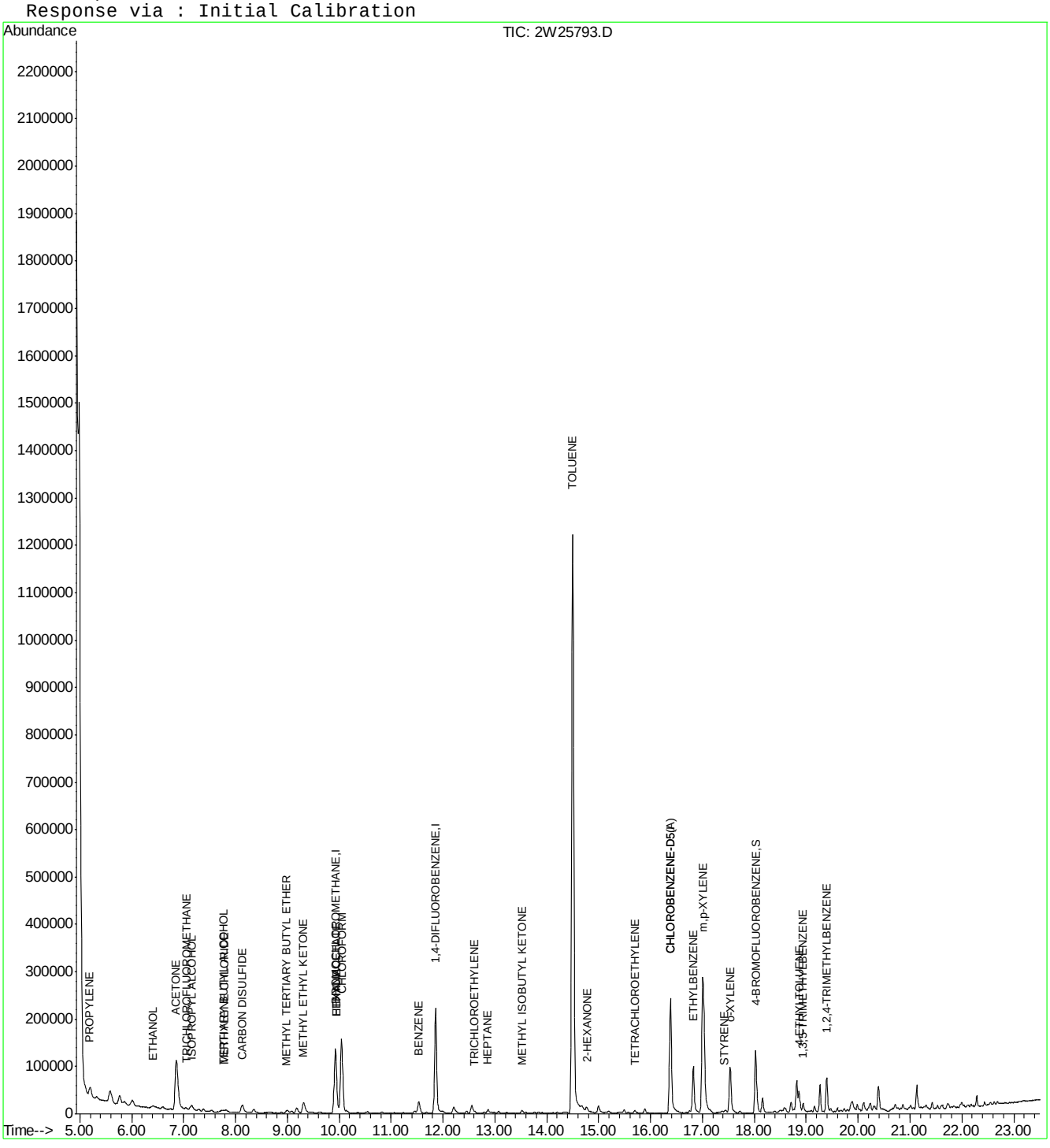
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	66075	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.86	114	275777	10.00	PPBV	0.01
63) CHLOROBENZENE-D5	16.38	82	125873	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	125763	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	66338	5.37	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 107.40%			
Target Compounds						Qvalue
6) PROPYLENE	5.18	41	18450	2.77	PPBV	99
17) TRICHLOROFLUOROMETHANE	7.05	101	4626	0.15	PPBV	99
18) ISOPROPYL ALCOHOL	7.15	45	14158	1.10	PPBV #	60
19) ACETONE	6.86	58	85187	19.61	PPBV	95
25) CARBON DISULFIDE	8.13	76	41040	1.57	PPBV	90
26) ETHANOL	6.41	45	16059	5.97	PPBV	99
28) METHYLENE CHLORIDE	7.78	84	1811	0.23	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.76	59	6824	0.44	PPBV #	61
33) METHYL TERTIARY BUTYL ETHE	8.97	73	6076	0.27	PPBV	81
35) HEXANE	9.95	57	4404	0.40	PPBV	85
38) METHYL ETHYL KETONE	9.31	72	16794	4.87	PPBV	96
40) ETHYL ACETATE	9.95	61	3220	1.65	PPBV #	1
41) CHLOROFORM	10.05	83	197271	10.73	PPBV	99
47) BENZENE	11.54	78	31790	1.25	PPBV	99
50) TRICHLOROETHYLENE	12.61	95	567	0.05	PPBV #	73
56) HEPTANE	12.86	43	4036	0.40	PPBV	90
58) METHYL ISOBUTYL KETONE	13.52	43	4993	0.43	PPBV	95
60) TOLUENE	14.50	92	885785	53.23	PPBV	96
64) 2-HEXANONE	14.77	58	3554	0.65	PPBV	98
65) TETRACHLOROETHYLENE	15.70	164	1418	0.12	PPBV	99
71) ETHYLBENZENE	16.82	91	113402	3.72	PPBV	98
72) m,p-XYLENE	17.01	106	177545	14.97	PPBV	95
73) o-XYLENE	17.53	106	41107	3.68	PPBV	95
74) STYRENE	17.42	104	1747	0.12	PPBV	98
82) 4-ETHYLTOLUENE	18.86	105	30100	1.31	PPBV	97
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	14069	0.67	PPBV	95
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	54649	2.99	PPBV #	27

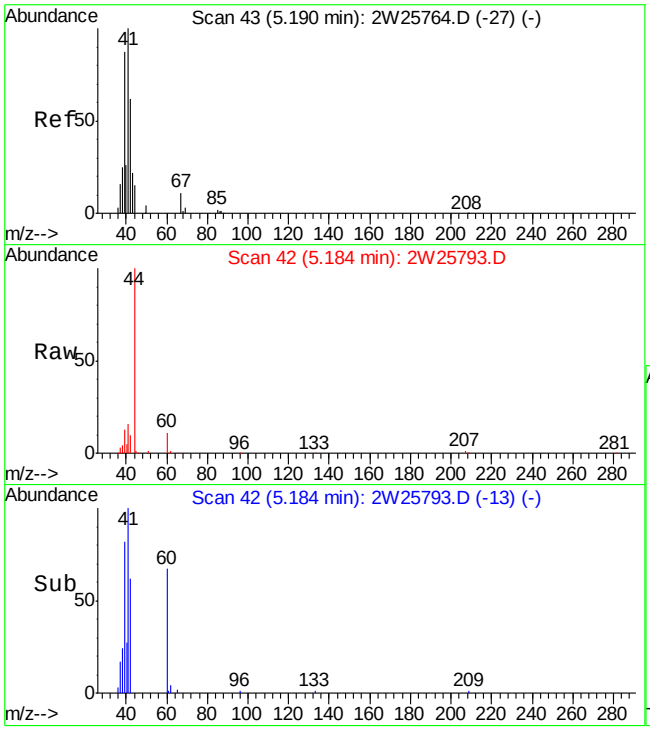
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25793.D Vial: 12
Acq On : 5 Oct 2009 4:52 pm Operator: YOUMINH
Sample : JA28238-13 Inst : MS2W
Misc : MS86174,V2W1086,100,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:38 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

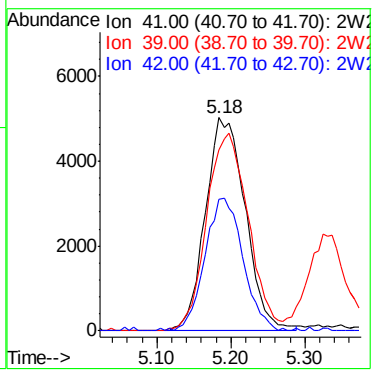


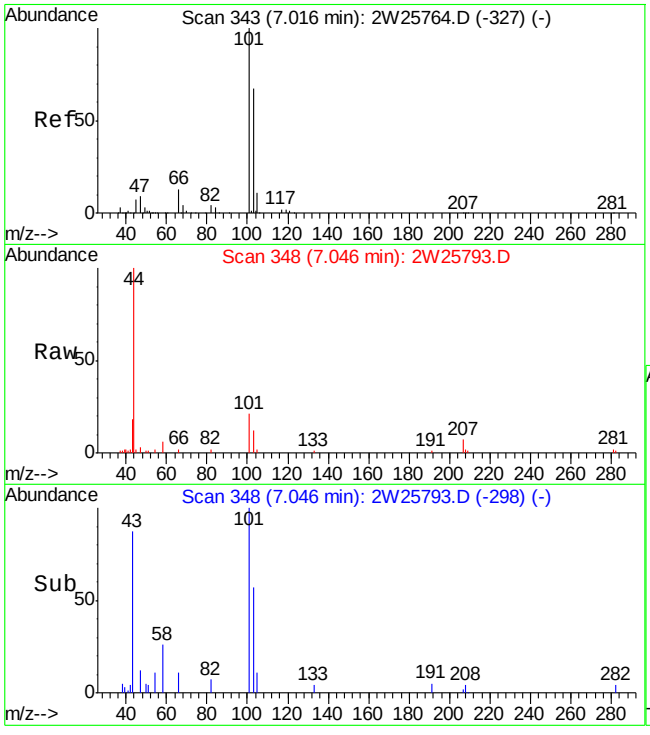


#6
PROPYLENE
Concen: 2.77 PPBV
RT: 5.18 min Scan# 42
Delta R.T. -0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 41 Resp: 18450

Ion	Ratio	Lower	Upper
41	100		
39	84.8	66.9	106.9
42	61.7	41.9	81.9

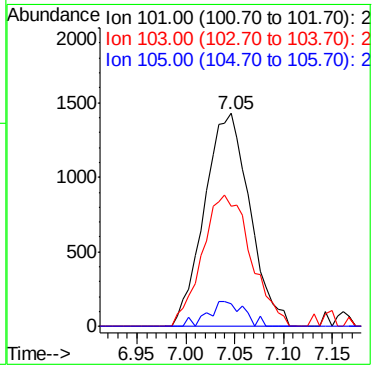


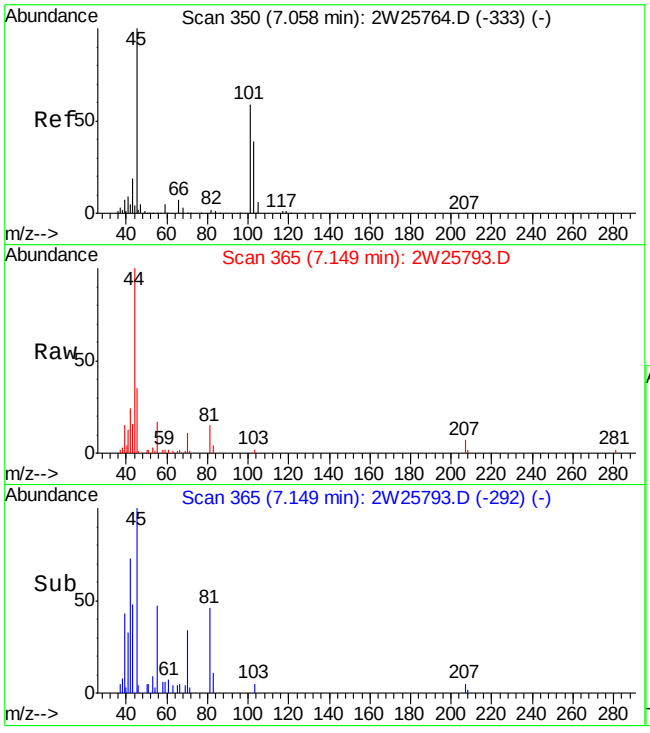


#17
TRICHLOROFLUOROMETHANE
Concen: 0.15 PPBV
RT: 7.05 min Scan# 348
Delta R.T. 0.03 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:101 Resp: 4626

Ion	Ratio	Lower	Upper
101	100		
103	66.1	46.0	86.0
105	9.3	0.0	31.0

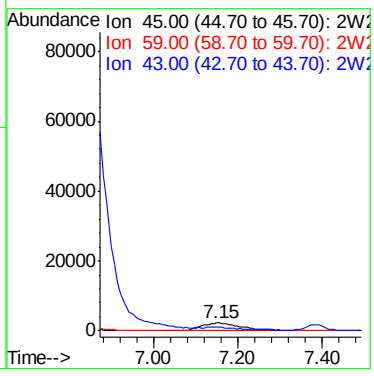


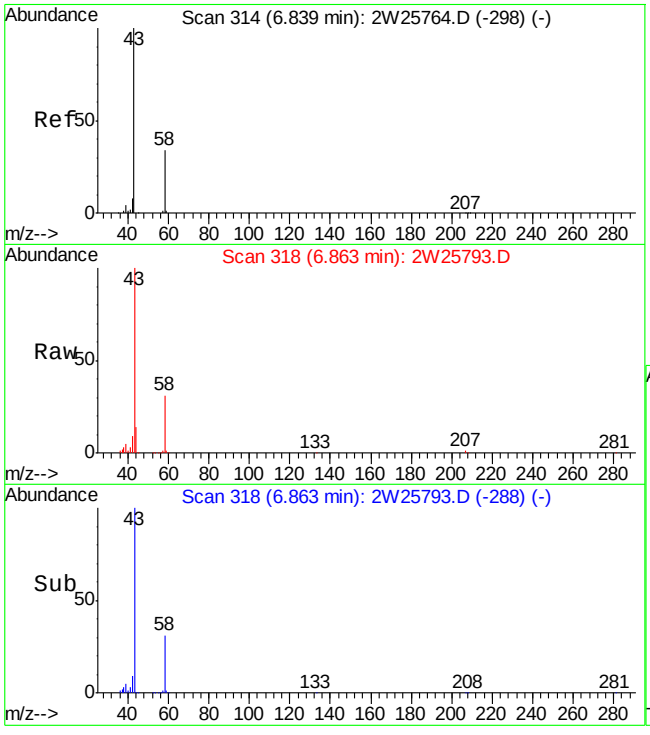


#18
ISOPROPYL ALCOHOL
Concen: 1.10 PPBV
RT: 7.15 min Scan# 365
Delta R.T. 0.09 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 45 Resp: 14158

Ion	Ratio	Lower	Upper
45	100		
59	5.1	0.0	24.7
43	44.1	1.3	41.3#

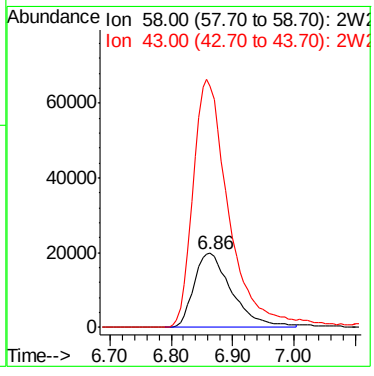


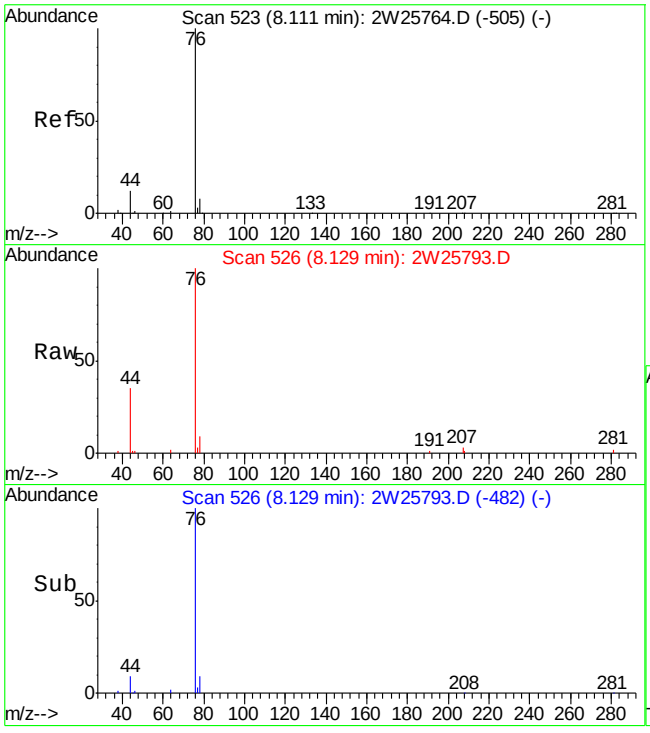


#19
ACETONE
Concen: 19.61 PPBV
RT: 6.86 min Scan# 318
Delta R.T. 0.02 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 58 Resp: 85187

Ion	Ratio	Lower	Upper
58	100		
43	311.8	281.6	321.6

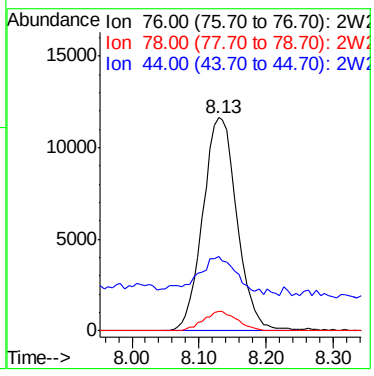


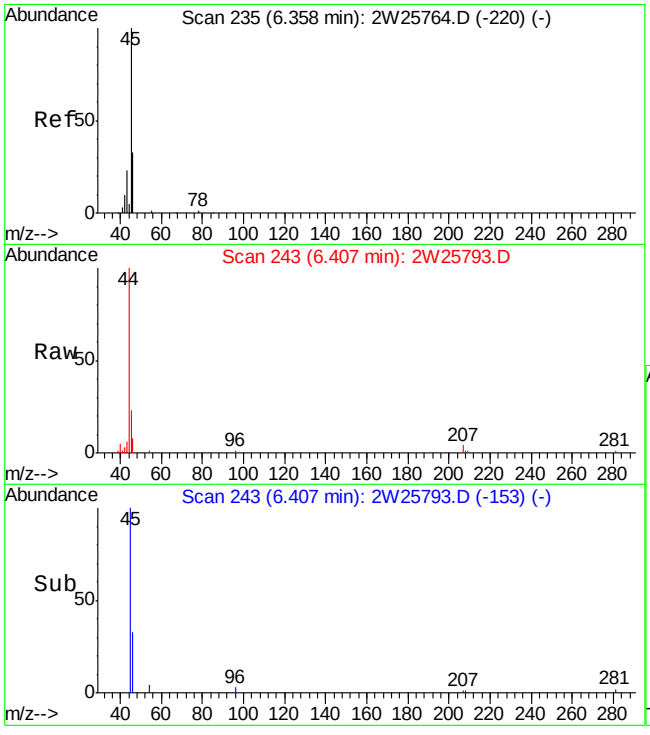


#25
CARBON DISULFIDE
Concen: 1.57 PPBV
RT: 8.13 min Scan# 526
Delta R.T. 0.02 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 76 Resp: 41040

Ion	Ratio	Lower	Upper
76	100		
78	9.0	0.0	29.3
44	18.7	0.0	32.1

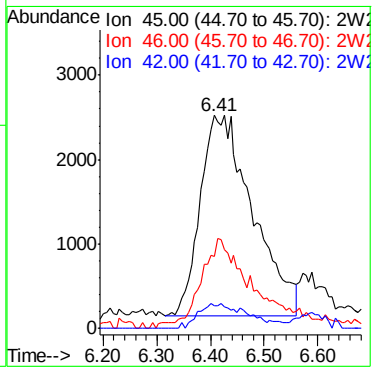


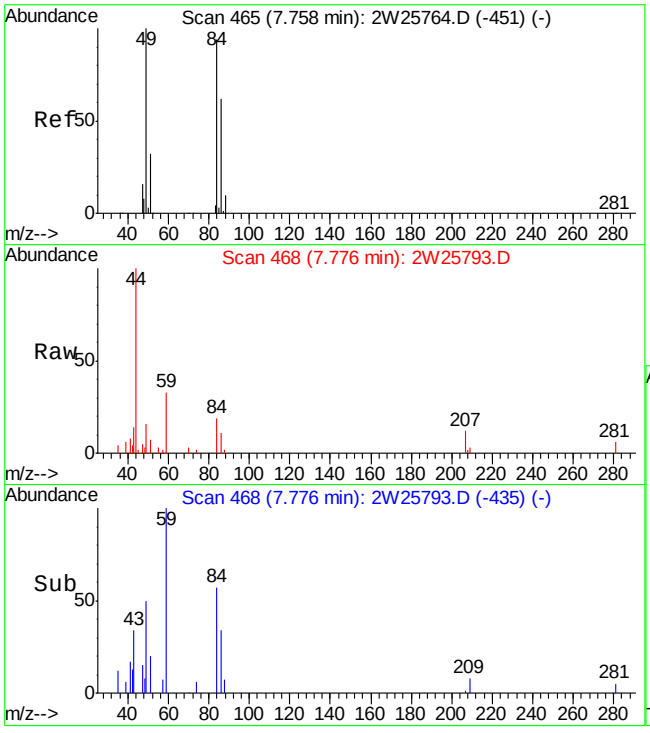


#26
ETHANOL
Concen: 5.97 PPBV
RT: 6.41 min Scan# 243
Delta R.T. 0.05 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 45 Resp: 16059

Ion	Ratio	Lower	Upper
45	100		
46	37.9	17.8	57.8
42	8.0	0.0	29.6

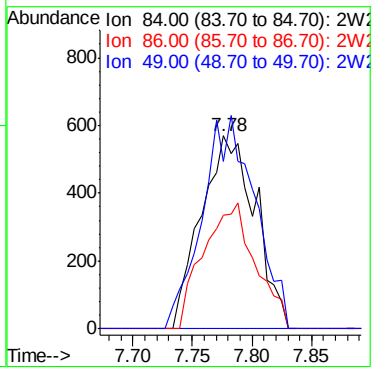


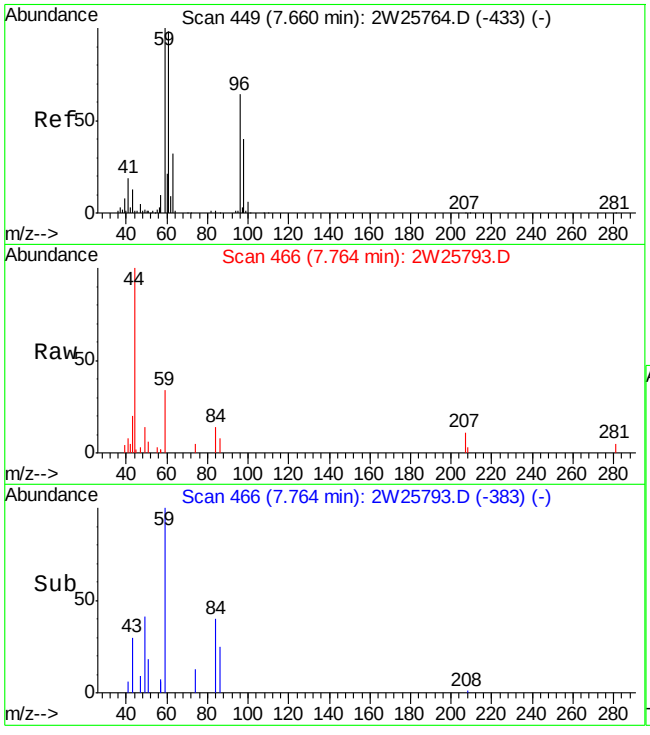


#28
METHYLENE CHLORIDE
Concen: 0.23 PPBV
RT: 7.78 min Scan# 468
Delta R.T. 0.02 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 84 Resp: 1811

Ion	Ratio	Lower	Upper
84	100		
86	62.1	45.3	85.3
49	106.7	0.0	305.8

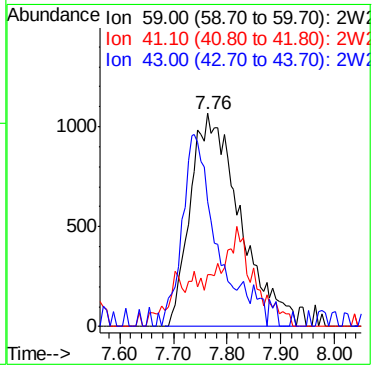


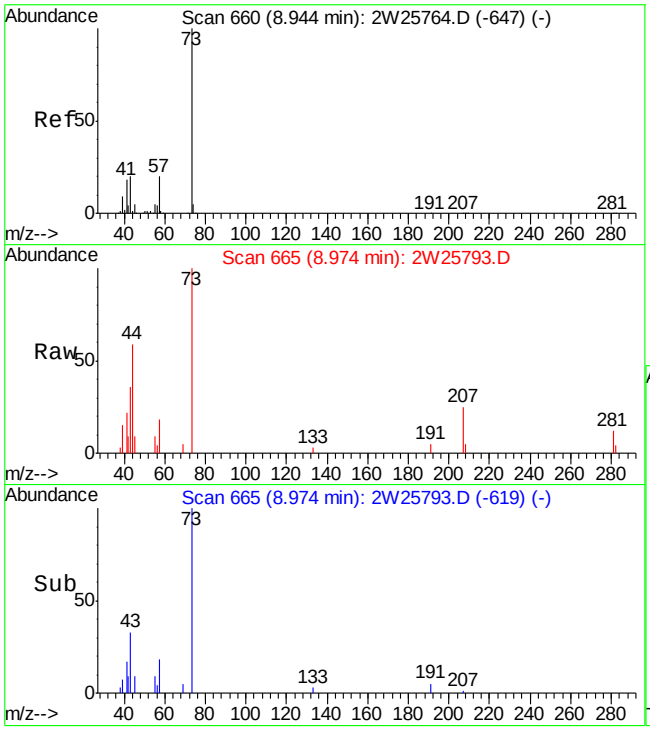


#32
TERTIARY BUTYL ALCOHOL
Concen: 0.44 PPBV
RT: 7.76 min Scan# 466
Delta R.T. 0.10 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 59 Resp: 6824

Ion	Ratio	Lower	Upper
59	100		
41	0.0	0.0	39.4
43	0.0	0.0	32.9

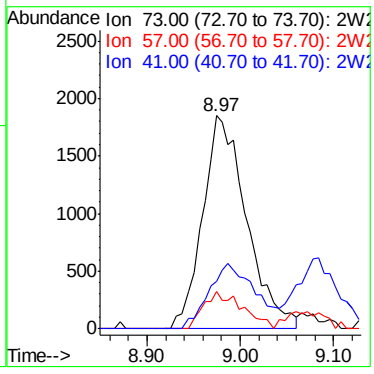


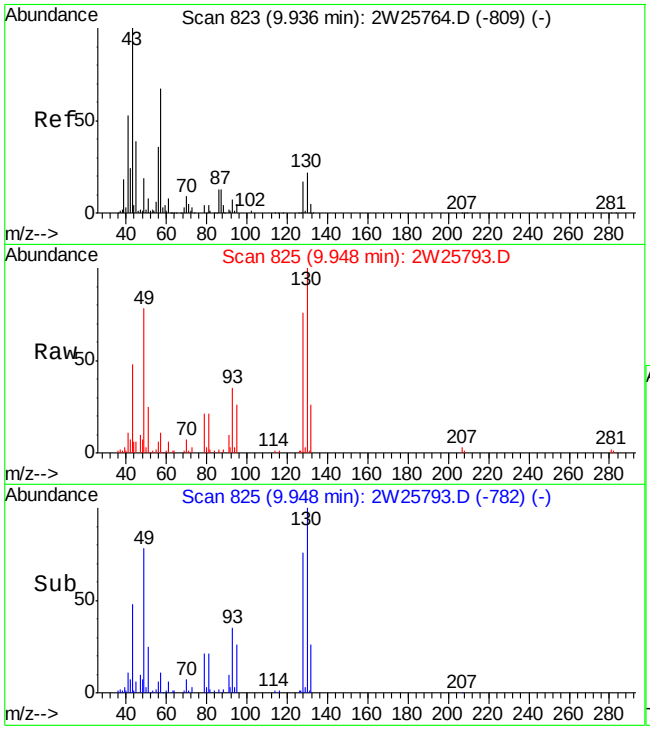


#33
METHYL TERTIARY BUTYL ETHER
Concen: 0.27 PPBV
RT: 8.97 min Scan# 665
Delta R.T. 0.03 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 73 Resp: 6076

Ion	Ratio	Lower	Upper
73	100		
57	15.4	0.0	40.0
41	32.7	0.0	39.8

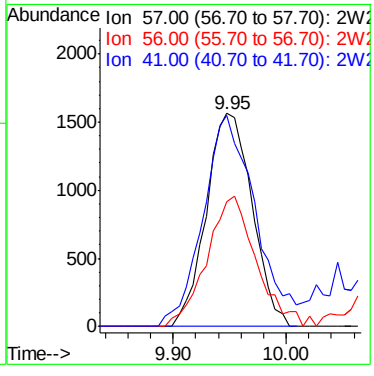


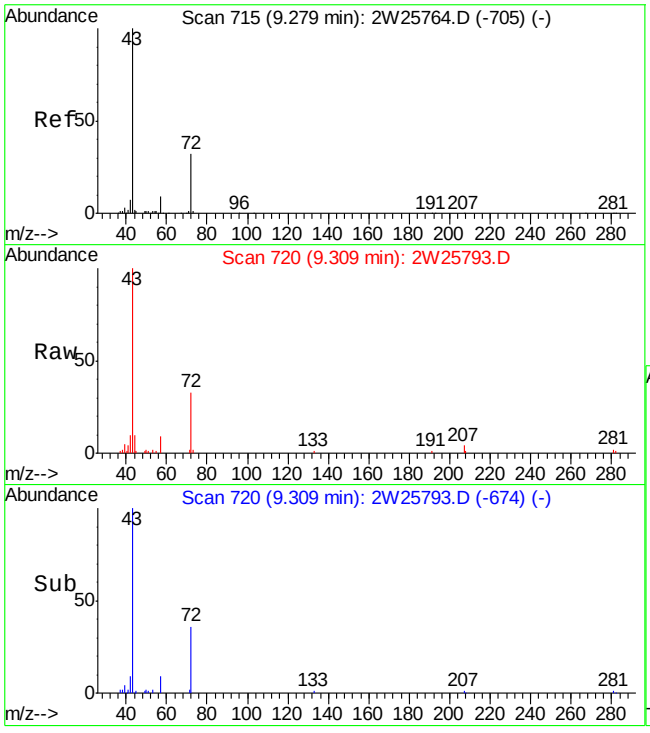


#35
HEXANE
Concen: 0.40 PPBV
RT: 9.95 min Scan# 825
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 57 Resp: 4404

Ion	Ratio	Lower	Upper
57	100		
56	66.0	32.6	72.6
41	112.9	80.6	120.6

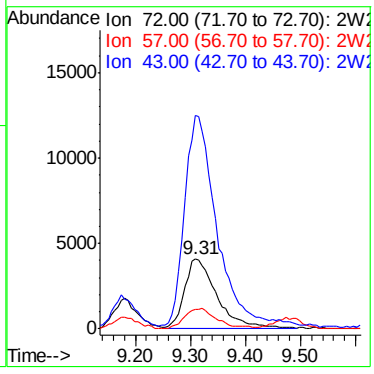


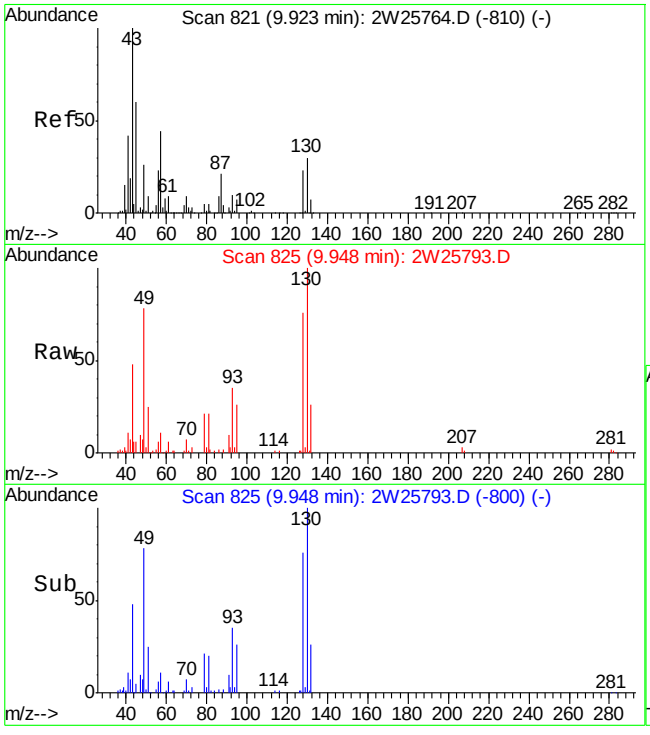


#38
METHYL ETHYL KETONE
Concen: 4.87 PPBV
RT: 9.31 min Scan# 720
Delta R.T. 0.03 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 72 Resp: 16794

Ion	Ratio	Lower	Upper
72	100		
57	28.5	8.3	48.3
43	306.5	294.9	334.9

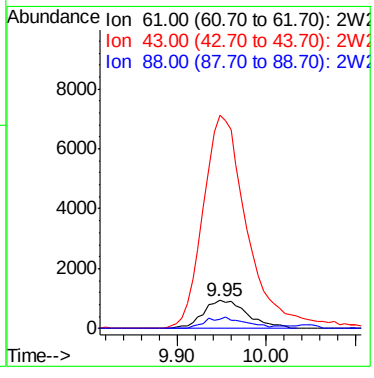


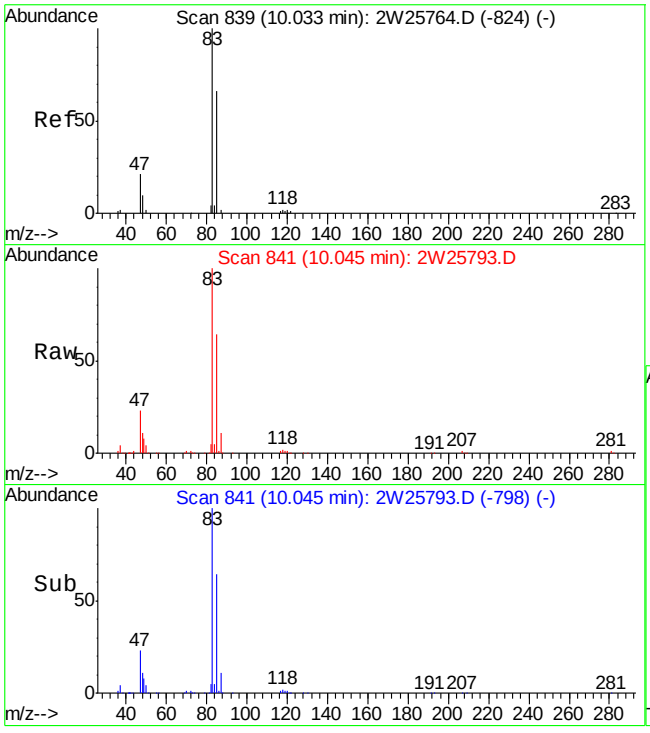


#40
ETHYL ACETATE
Concen: 1.65 PPBV
RT: 9.95 min Scan# 825
Delta R.T. 0.02 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 61 Resp: 3220

Ion	Ratio	Lower	Upper
61	100		
43	763.3	1305.8	1345.8#
88	37.6	30.9	70.9

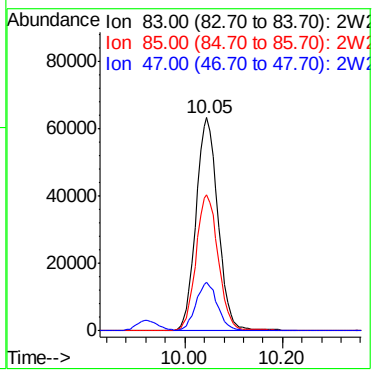


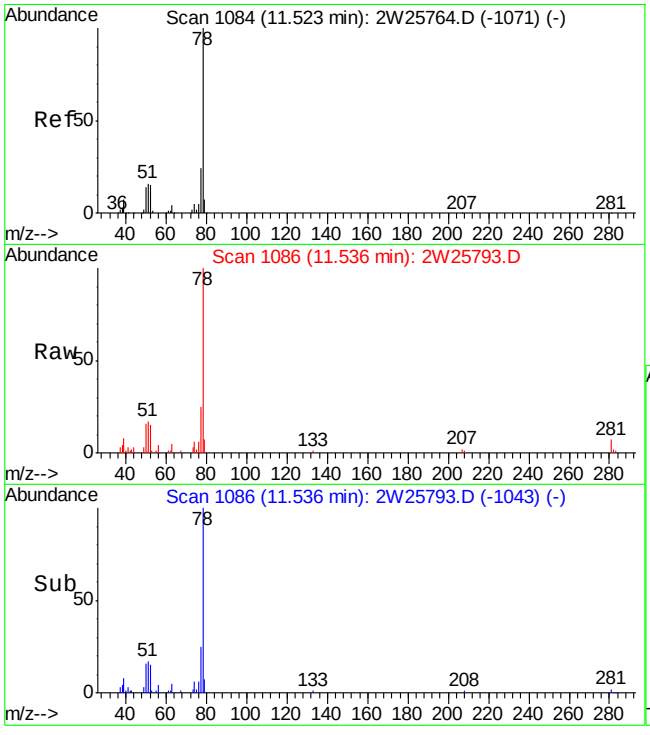


#41
CHLOROFORM
Concen: 10.73 PPBV
RT: 10.05 min Scan# 841
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 83 Resp: 197271

Ion	Ratio	Lower	Upper
83	100		
85	64.6	44.9	84.9
47	22.6	2.0	42.0

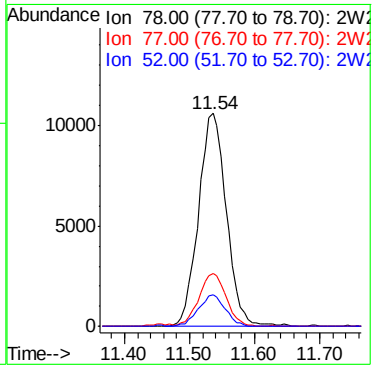


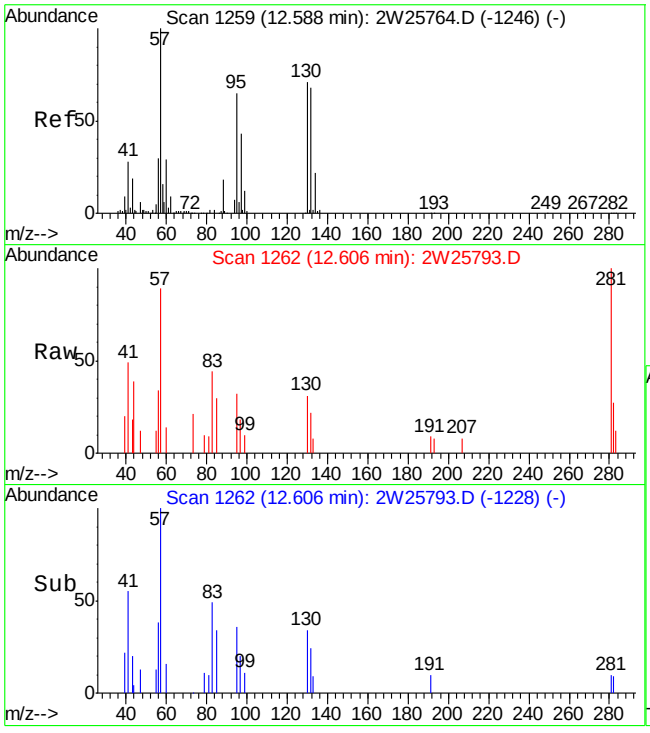


#47
BENZENE
Concen: 1.25 PPBV
RT: 11.54 min Scan# 1086
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 78 Resp: 31790

Ion	Ratio	Lower	Upper
78	100		
77	24.4	3.5	43.5
52	14.3	0.0	34.5

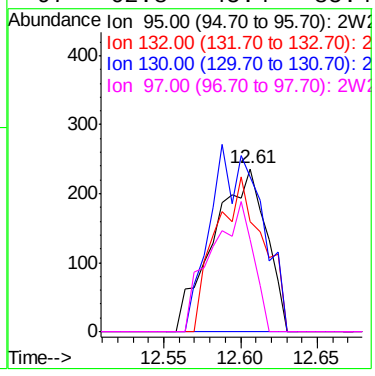


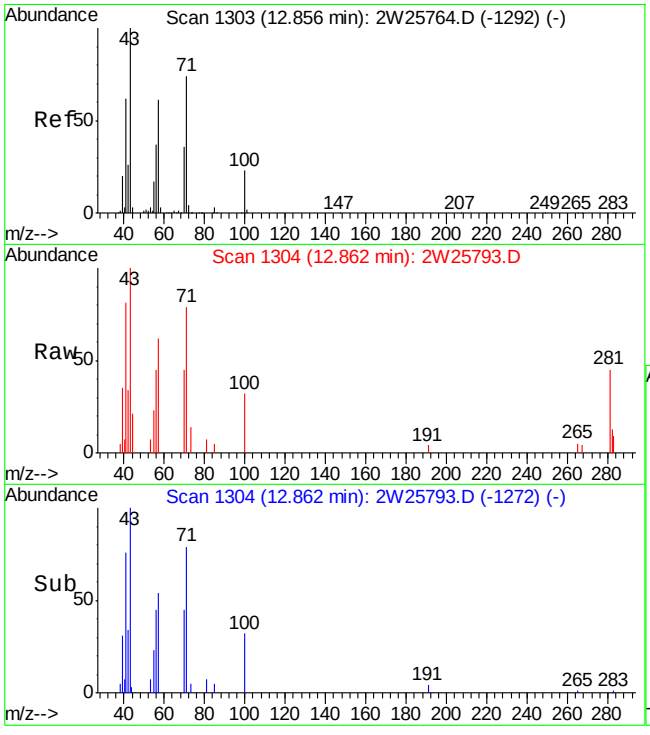


#50
TRICHLOROETHYLENE
Concen: 0.05 PPBV
RT: 12.61 min Scan# 1262
Delta R.T. 0.02 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 95 Resp: 567

Ion	Ratio	Lower	Upper
95	100		
132	85.4	83.7	123.7
130	57.1	88.1	128.1#
97	62.8	45.4	85.4

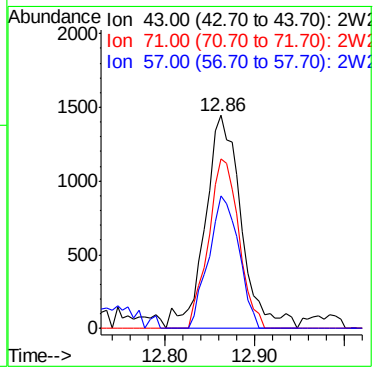


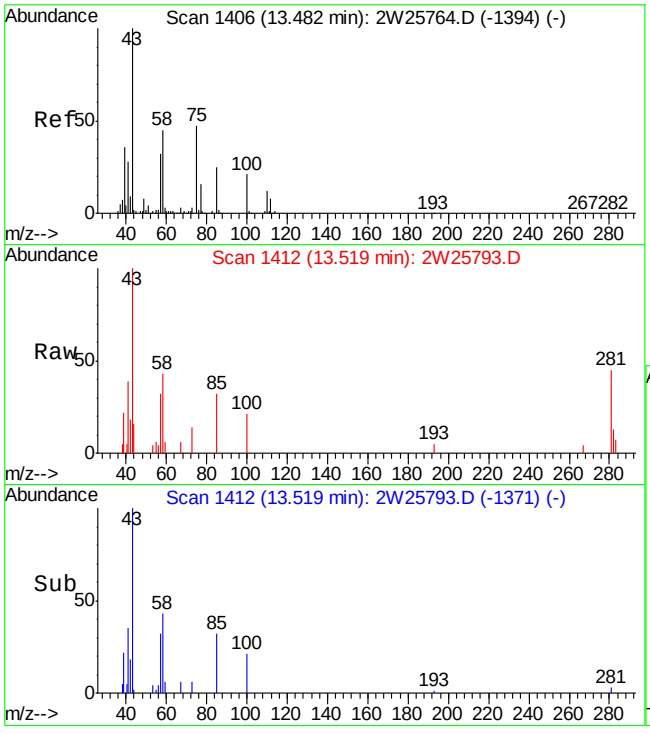


#56
HEPTANE
Concen: 0.40 PPBV
RT: 12.86 min Scan# 1304
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 43 Resp: 4036

Ion	Ratio	Lower	Upper
43	100		
71	67.2	54.6	94.6
57	52.2	40.6	80.6

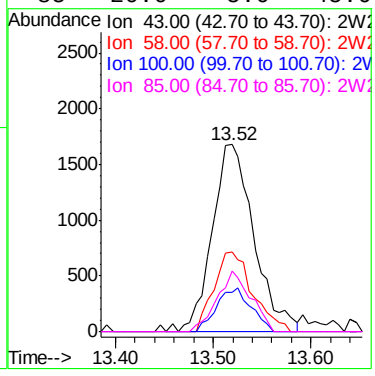


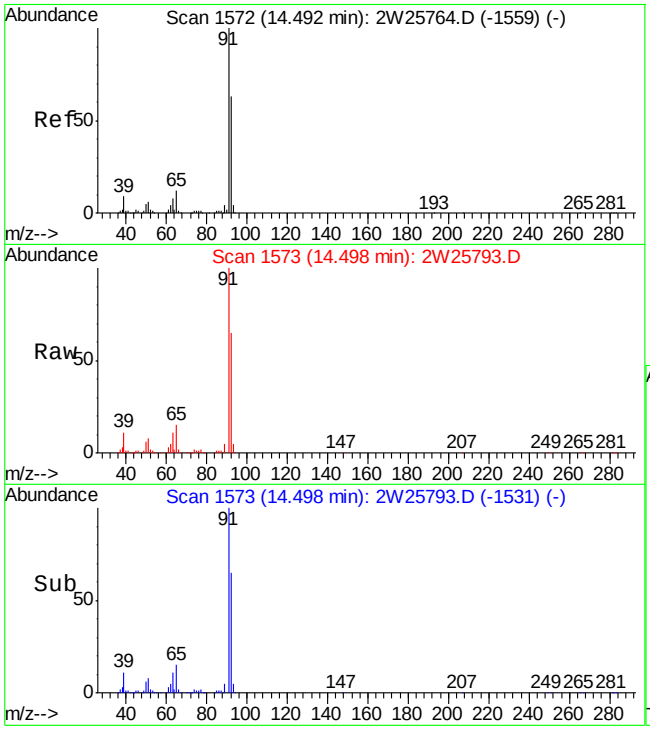


#58
METHYL ISOBUTYL KETONE
Concen: 0.43 PPBV
RT: 13.52 min Scan# 1412
Delta R.T. 0.04 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 43 Resp: 4993

Ion	Ratio	Lower	Upper
43	100		
58	39.5	25.2	65.2
100	19.3	0.2	40.2
85	26.0	5.0	45.0

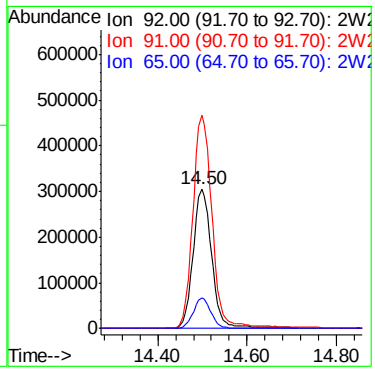


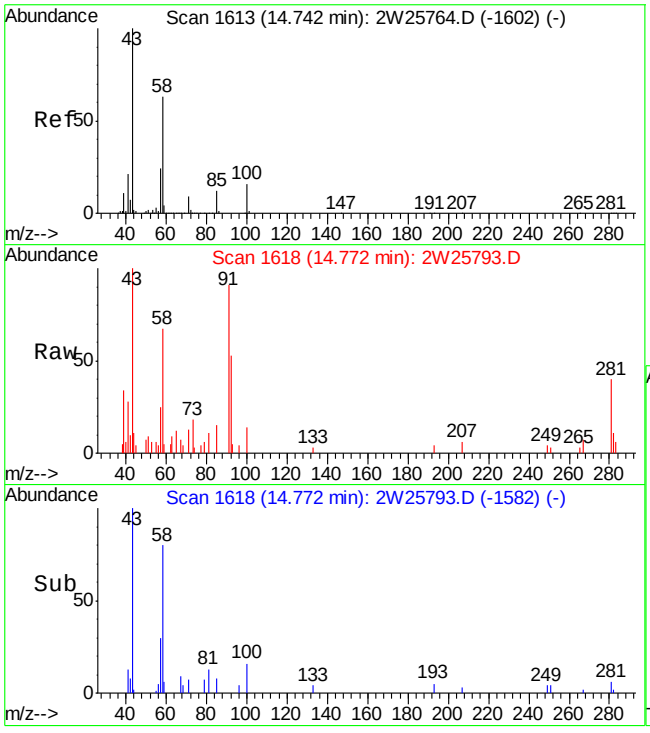


#60
TOLUENE
Concen: 53.23 PPBV
RT: 14.50 min Scan# 1573
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 92 Resp: 885785

Ion	Ratio	Lower	Upper
92	100		
91	158.4	143.7	183.7
65	21.1	0.0	38.6

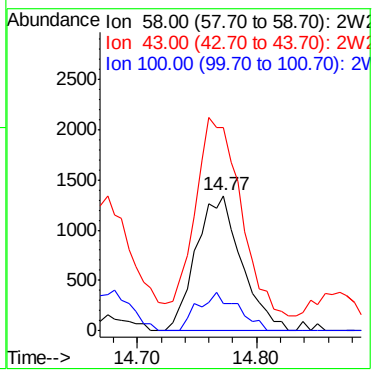


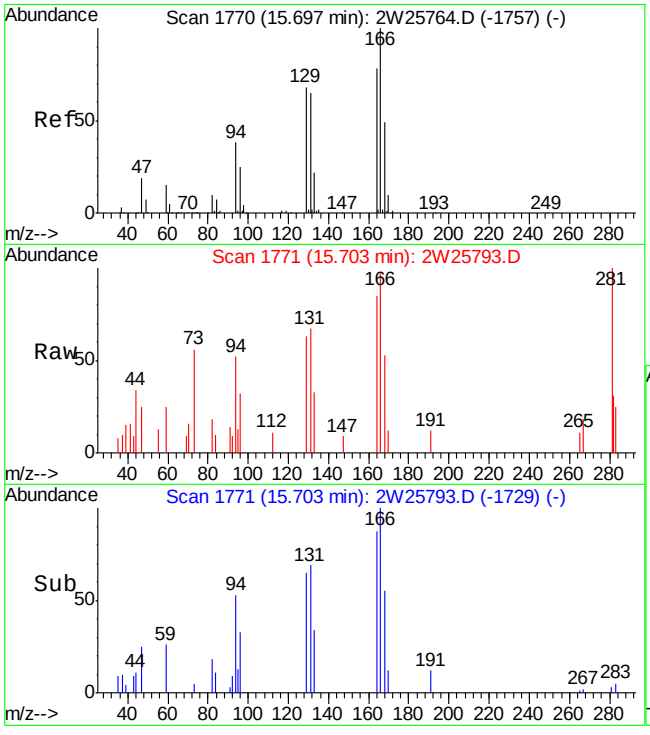


#64
2-HEXANONE
Concen: 0.65 PPBV
RT: 14.77 min Scan# 1618
Delta R.T. 0.03 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 58 Resp: 3554

Ion	Ratio	Lower	Upper
58	100		
43	164.9	141.7	181.7
100	25.2	5.5	45.5

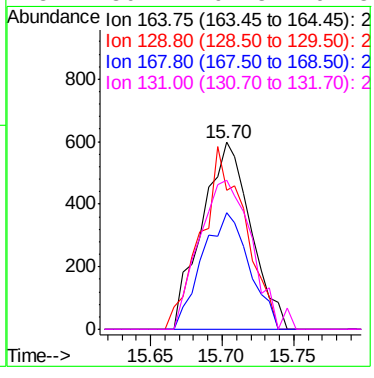


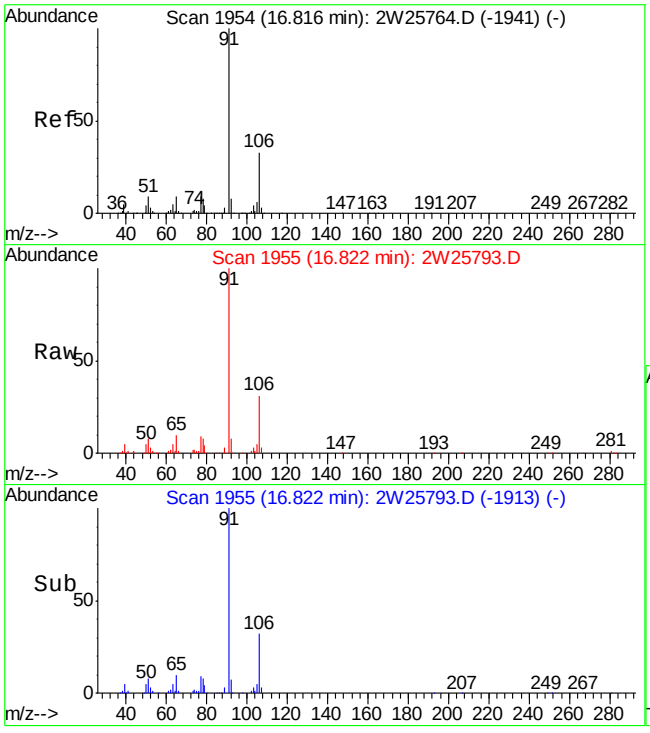


#65
TETRACHLOROETHYLENE
Concen: 0.12 PPBV
RT: 15.70 min Scan# 1771
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:164 Resp: 1418

Ion	Ratio	Lower	Upper
164	100		
129	87.6	67.5	107.5
168	60.4	42.6	82.6
131	86.2	64.8	104.8

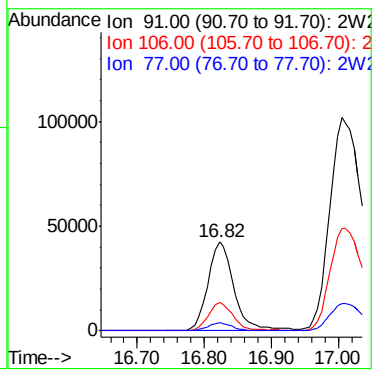


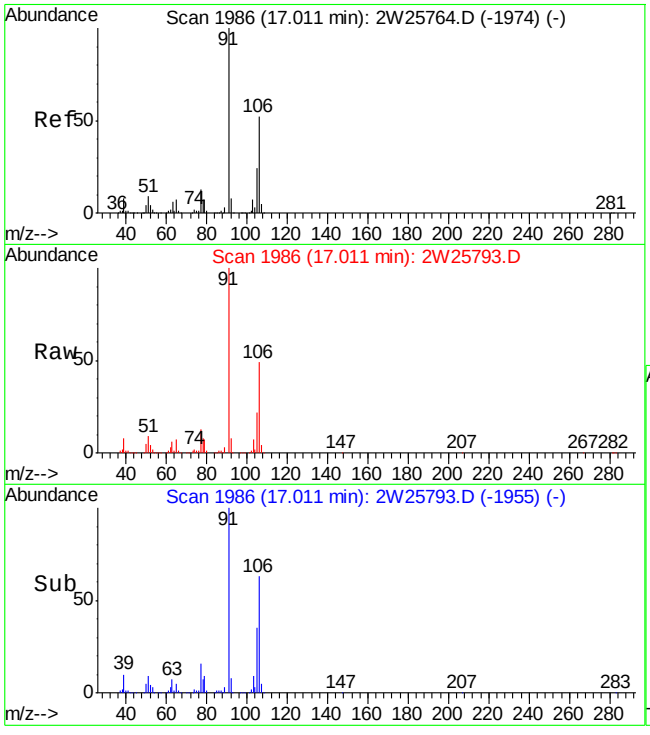


#71
ETHYLBENZENE
Concen: 3.72 PPBV
RT: 16.82 min Scan# 1955
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion: 91 Resp: 113402

Ion	Ratio	Lower	Upper
91	100		
106	30.8	12.4	52.4
77	9.1	0.0	28.6

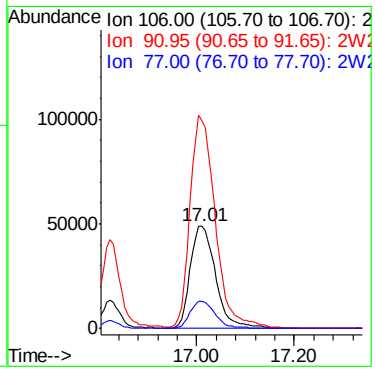


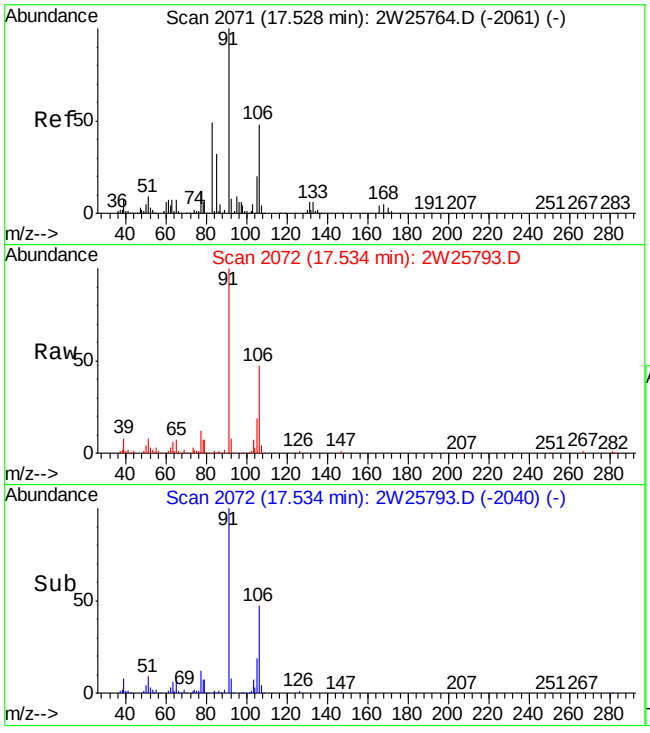


#72
m,p-XYLENE
Concen: 14.97 PPBV
RT: 17.01 min Scan# 1986
Delta R.T. 0.00 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:106 Resp: 177545

Ion	Ratio	Lower	Upper
106	100		
91	202.4	155.5	233.3
77	26.5	20.4	30.6

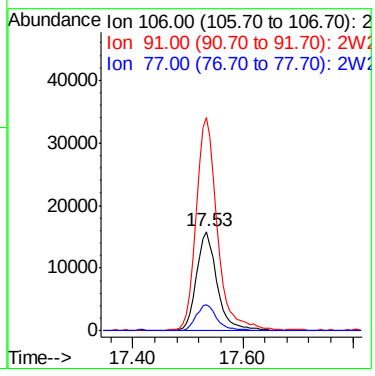


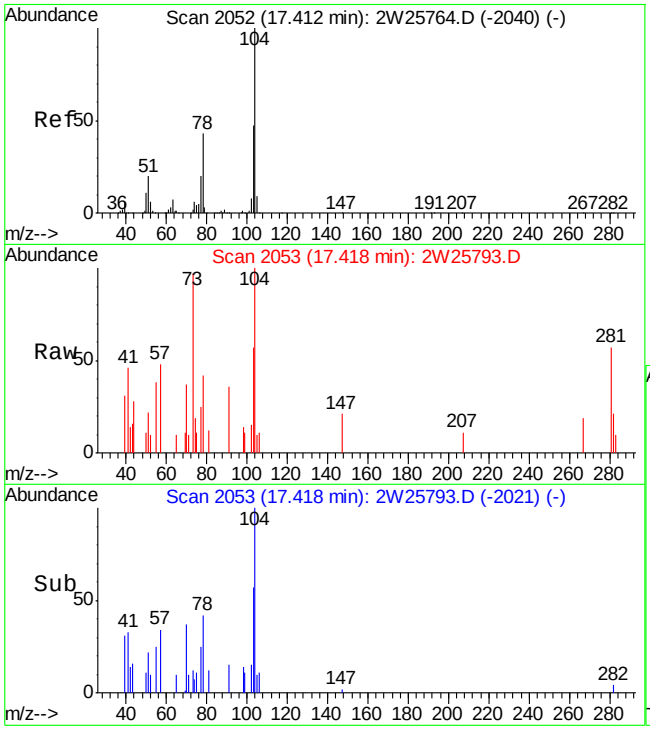


#73
o-XYLENE
Concen: 3.68 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:106 Resp: 41107

Ion	Ratio	Lower	Upper
106	100		
91	217.9	189.0	229.0
77	26.7	5.7	45.7

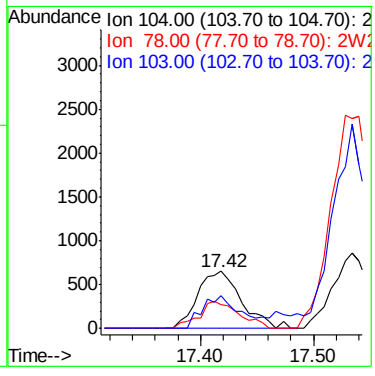


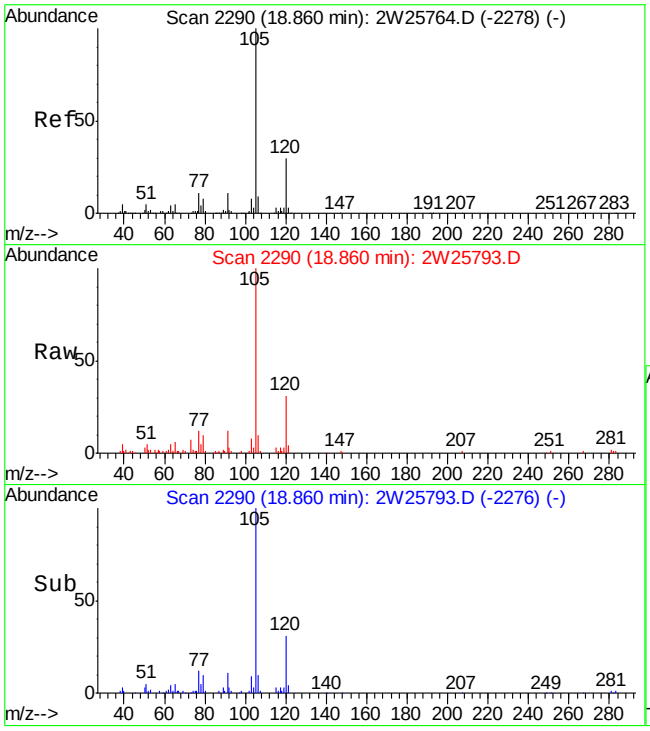


#74
STYRENE
Concen: 0.12 PPBV
RT: 17.42 min Scan# 2053
Delta R.T. 0.01 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:104 Resp: 1747

Ion	Ratio	Lower	Upper
104	100		
78	44.3	22.8	62.8
103	48.0	26.7	66.7

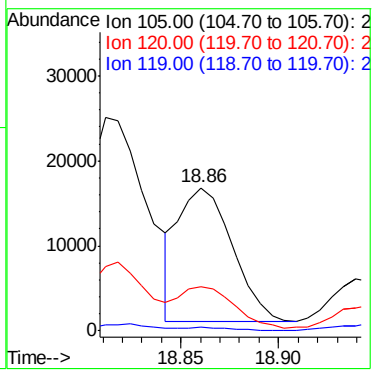


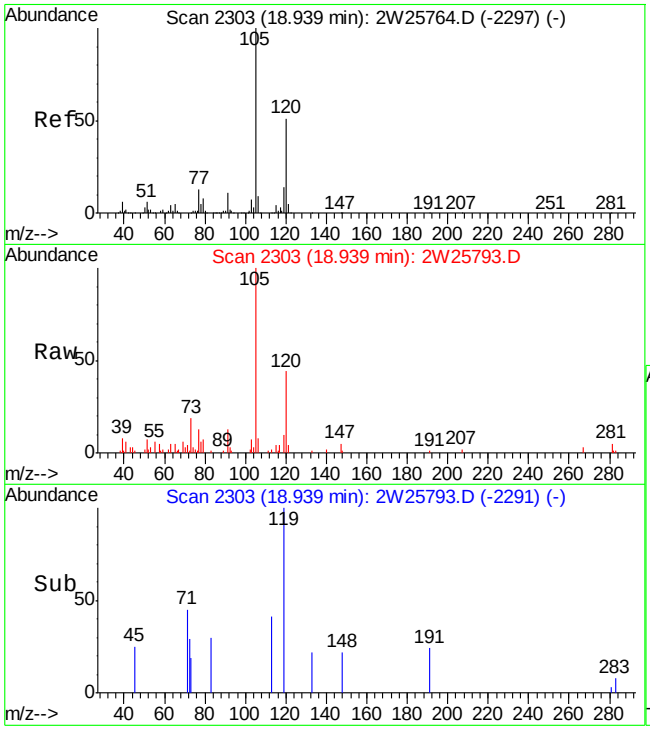


#82
4-ETHYLTOLUENE
Concen: 1.31 PPBV
RT: 18.86 min Scan# 2290
Delta R.T. 0.00 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:105 Resp: 30100

Ion	Ratio	Lower	Upper
105	100		
120	31.8	10.4	50.4
119	1.8	0.0	22.6

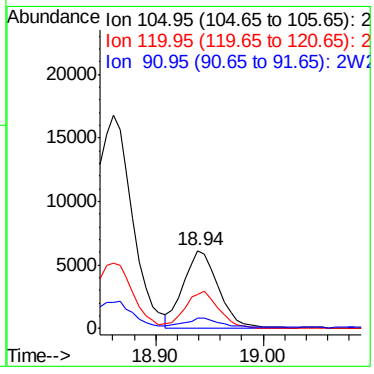


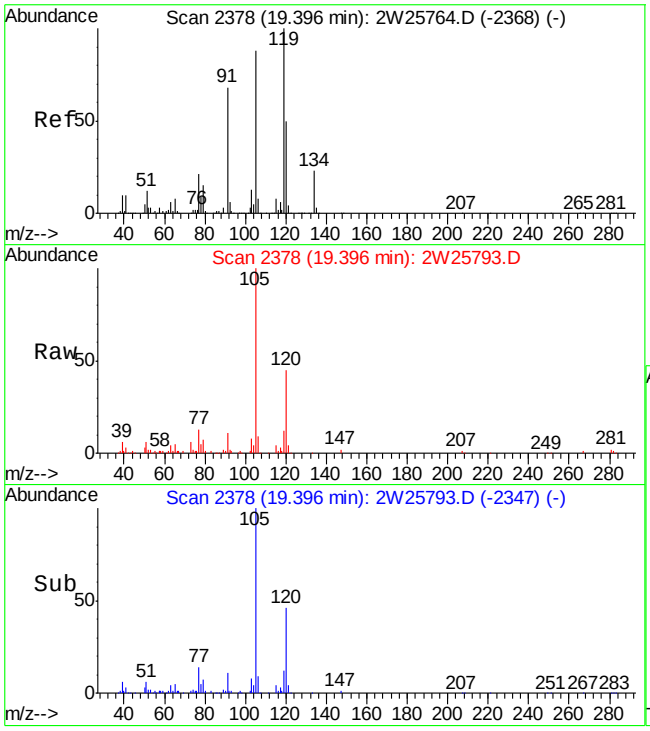


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.67 PPBV
RT: 18.94 min Scan# 2303
Delta R.T. 0.00 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:105 Resp: 14069

Ion	Ratio	Lower	Upper
105	100		
120	46.6	30.1	70.1
91	11.6	0.0	30.6

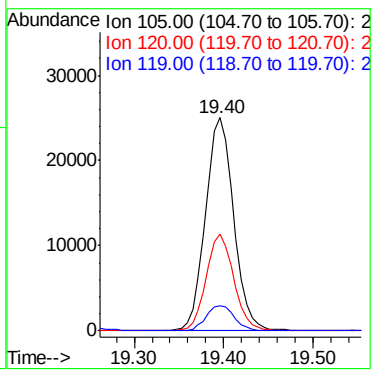




#85
1,2,4-TRIMETHYLBENZENE
Concen: 2.99 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. 0.00 min
Lab File: 2W25793.D
Acq: 5 Oct 2009 4:52 pm

Tgt Ion:105 Resp: 54649

Ion	Ratio	Lower	Upper
105	100		
120	44.3	38.0	78.0
119	12.0	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25802.D Vial: 6
Acq On : 6 Oct 2009 1:00 am Operator: YOUMINH
Sample : JA28238-13 Inst : MS2W
Misc : MS86174,V2W1086,40,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:36 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	71920	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	298037	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	133359	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	133293	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	68402	5.22	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 104.40%

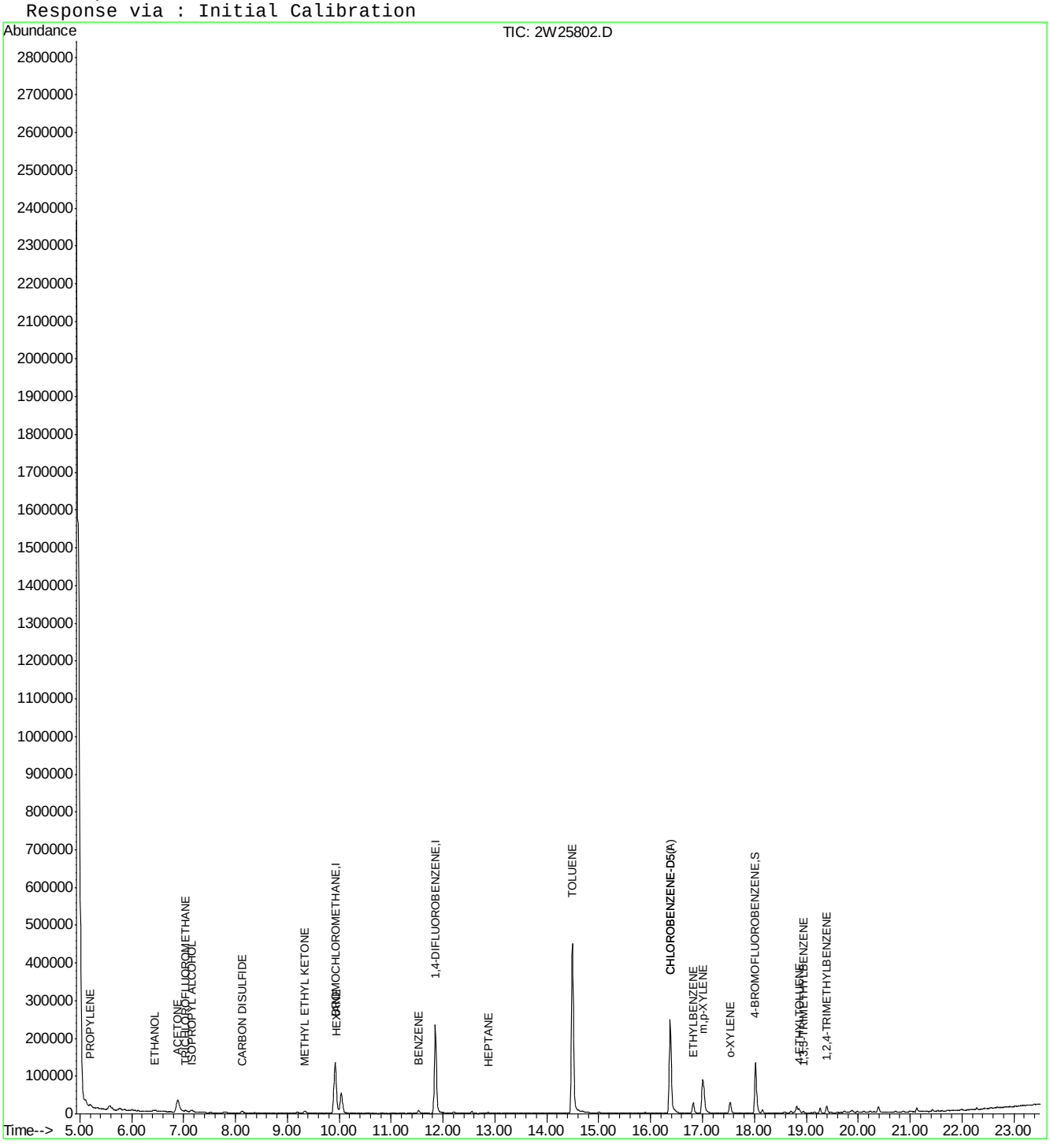
Target Compounds						Qvalue
6) PROPYLENE	5.19	41	6688	0.92	PPBV	97
17) TRICHLOROFLUOROMETHANE	7.03	101	4309	0.13	PPBV	98
18) ISOPROPYL ALCOHOL	7.16	45	6483	0.46	PPBV	66
19) ACETONE	6.89	58	28820	6.10	PPBV	97
25) CARBON DISULFIDE	8.12	76	15043	0.53	PPBV	94
26) ETHANOL	6.44	45	10701	3.66	PPBV #	71
35) HEXANE	9.95	57	1543	0.13	PPBV	87
38) METHYL ETHYL KETONE	9.33	72	4914	1.31	PPBV #	89
47) BENZENE	11.53	78	10709	0.39	PPBV	99
56) HEPTANE	12.87	43	1169	0.11	PPBV	94
60) TOLUENE	14.49	92	322144	17.91	PPBV	98
71) ETHYLBENZENE	16.82	91	35019	1.08	PPBV	98
72) m,p-XYLENE	17.00	106	56674	4.51	PPBV	96
73) o-XYLENE	17.53	106	11580	0.98	PPBV #	85
82) 4-ETHYLTOLUENE	18.86	105	8358	0.34	PPBV	97
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	3644	0.16	PPBV	94
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	13427	0.69	PPBV #	28

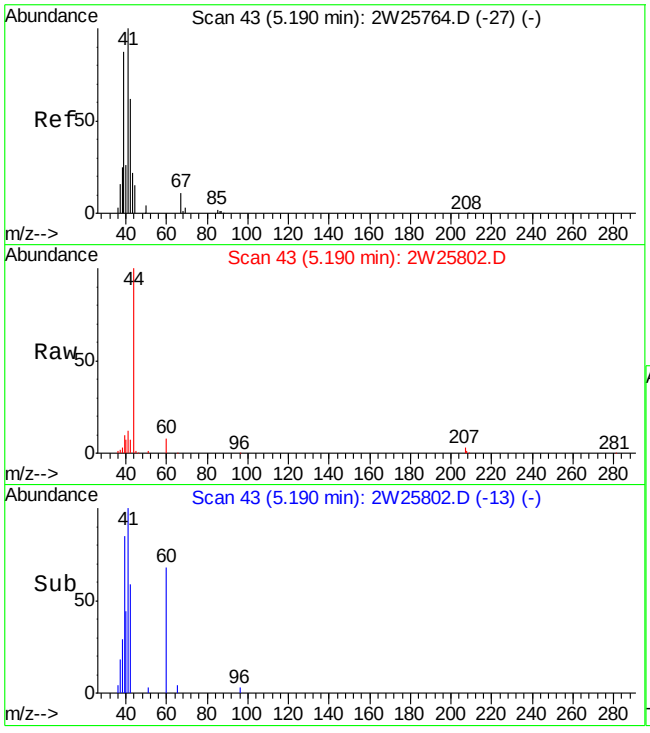
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25802.D Vial: 6
Acq On : 6 Oct 2009 1:00 am Operator: YOUMINH
Sample : JA28238-13 Inst : MS2W
Misc : MS86174,V2W1086,40,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:49 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

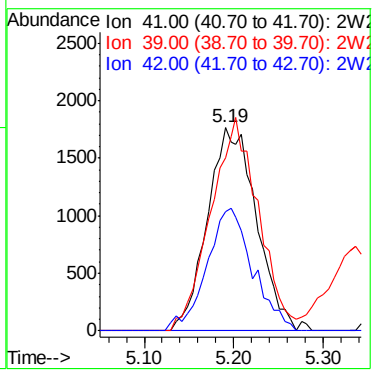


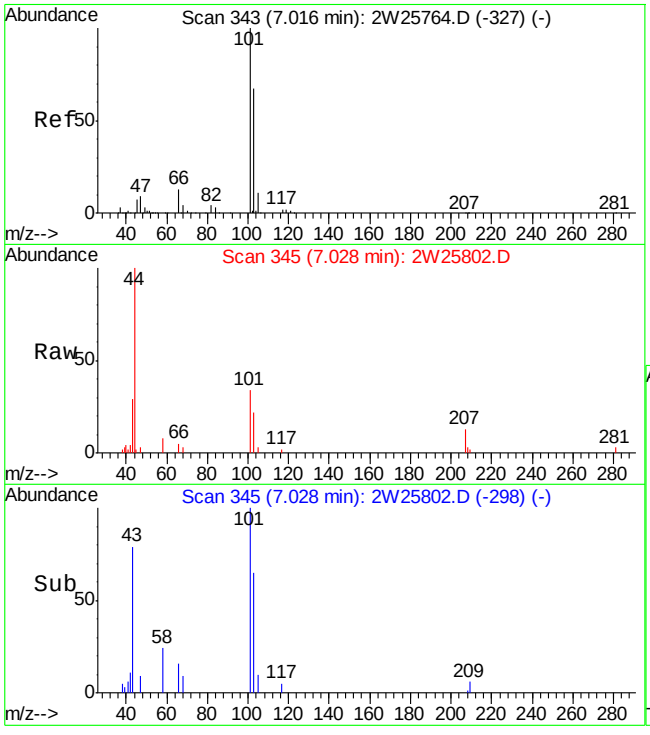


#6
PROPYLENE
Concen: 0.92 PPBV
RT: 5.19 min Scan# 43
Delta R.T. -0.00 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 41 Resp: 6688

Ion	Ratio	Lower	Upper
41	100		
39	85.0	66.9	106.9
42	58.8	41.9	81.9

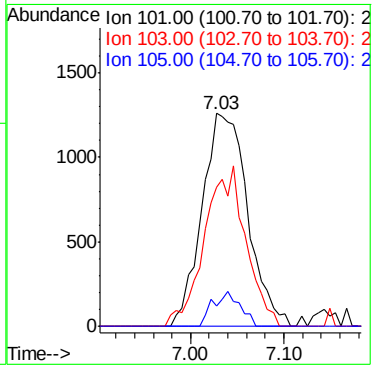


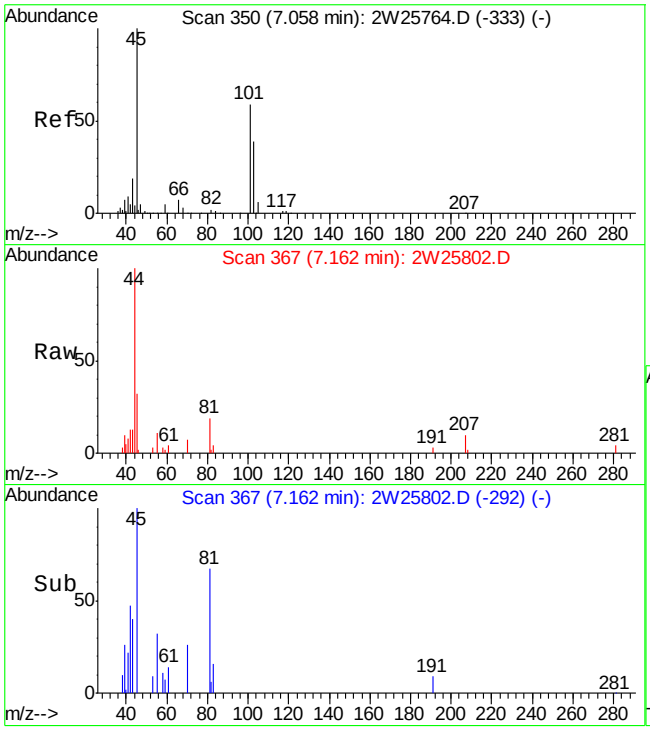


#17
TRICHLOROFLUOROMETHANE
Concen: 0.13 PPBV
RT: 7.03 min Scan# 345
Delta R.T. 0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion:101 Resp: 4309

Ion	Ratio	Lower	Upper
101	100		
103	67.8	46.0	86.0
105	9.9	0.0	31.0

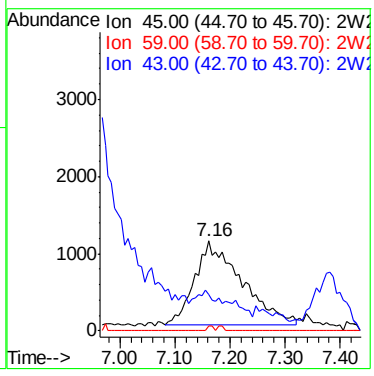


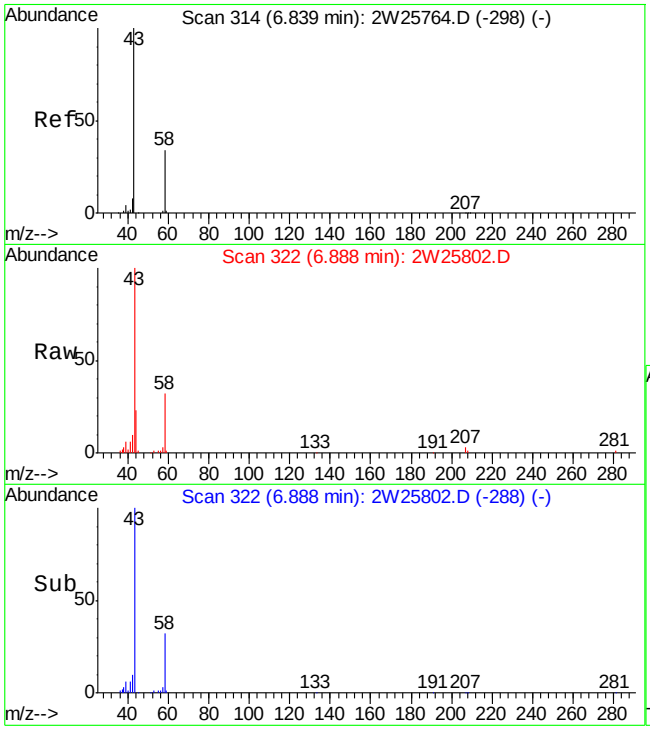


#18
ISOPROPYL ALCOHOL
Concen: 0.46 PPBV
RT: 7.16 min Scan# 367
Delta R.T. 0.10 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 45 Resp: 6483

Ion	Ratio	Lower	Upper
45	100		
59	5.8	0.0	24.7
43	40.5	1.3	41.3

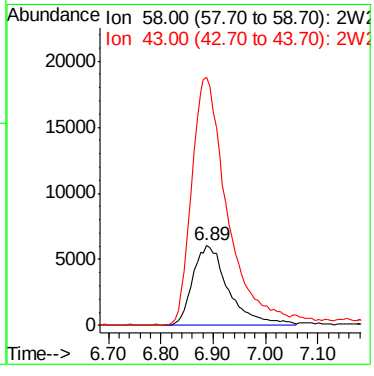


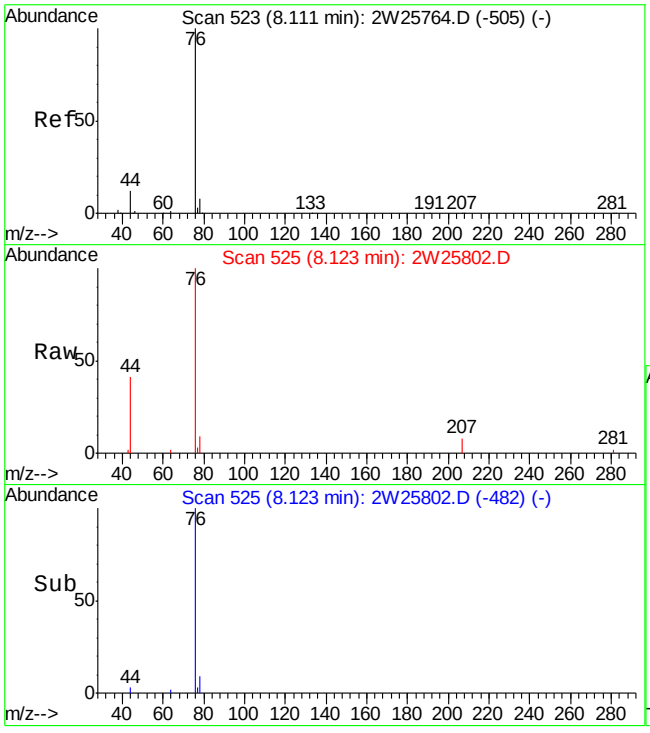


#19
ACETONE
Concen: 6.10 PPBV
RT: 6.89 min Scan# 322
Delta R.T. 0.05 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 58 Resp: 28820

Ion	Ratio	Lower	Upper
58	100		
43	307.8	281.6	321.6

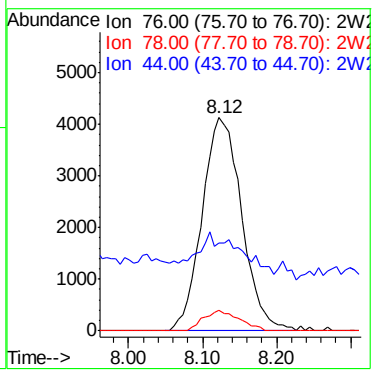


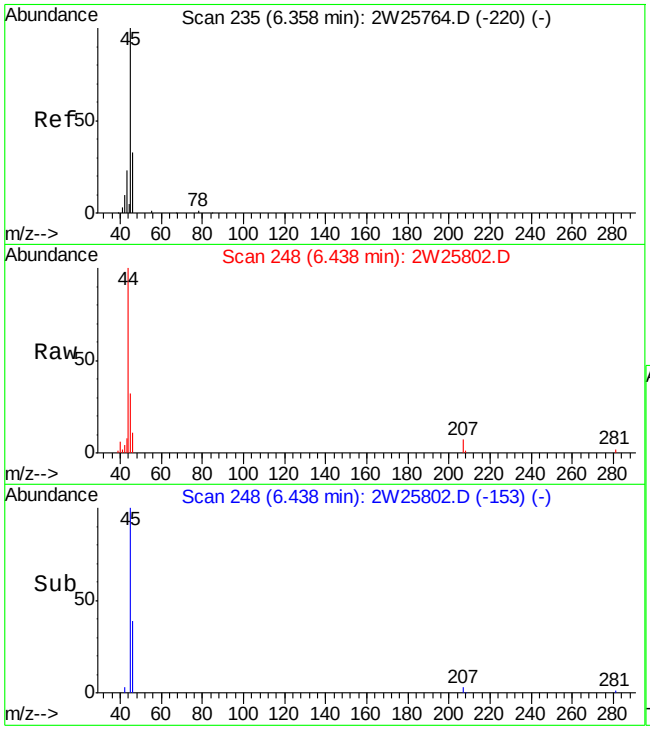


#25
CARBON DISULFIDE
Concen: 0.53 PPBV
RT: 8.12 min Scan# 525
Delta R.T. 0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 76 Resp: 15043

Ion	Ratio	Lower	Upper
76	100		
78	8.5	0.0	29.3
44	8.4	0.0	32.1

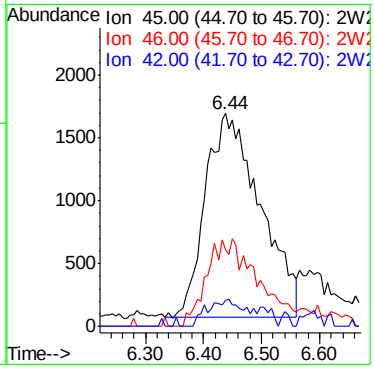


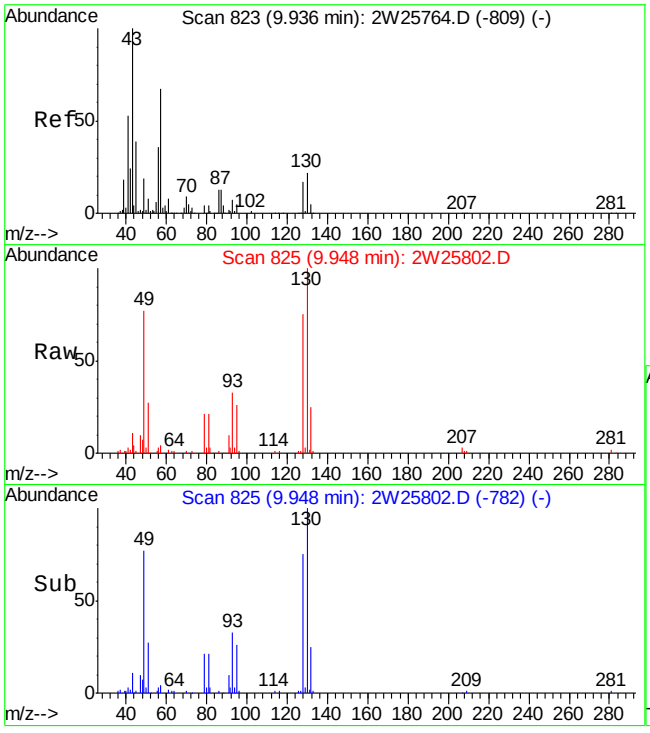


#26
ETHANOL
Concen: 3.66 PPBV
RT: 6.44 min Scan# 248
Delta R.T. 0.08 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 45 Resp: 10701

Ion	Ratio	Lower	Upper
45	100		
46	16.8	17.8	57.8#
42	6.7	0.0	29.6

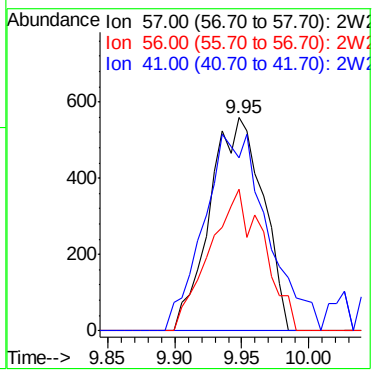


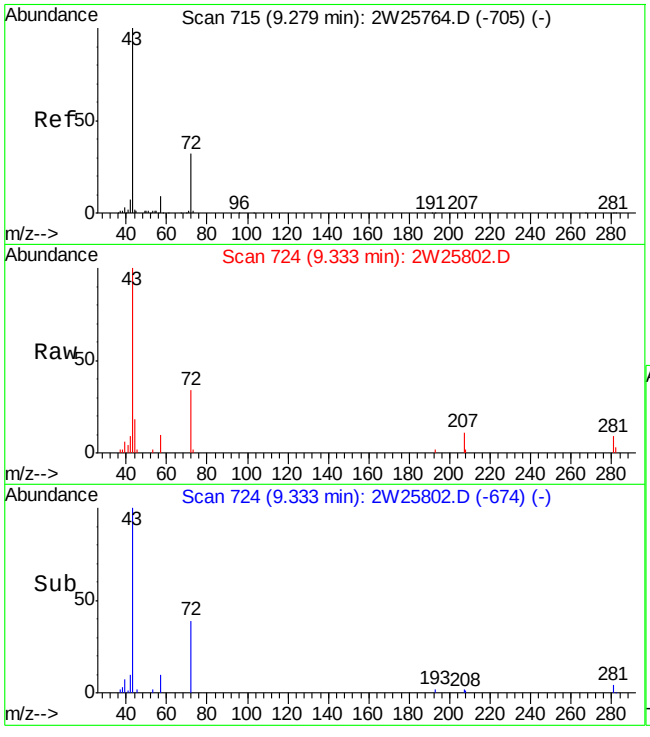


#35
HEXANE
Concen: 0.13 PPBV
RT: 9.95 min Scan# 825
Delta R.T. 0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 57 Resp: 1543

Ion	Ratio	Lower	Upper
57	100		
56	67.1	32.6	72.6
41	109.7	80.6	120.6

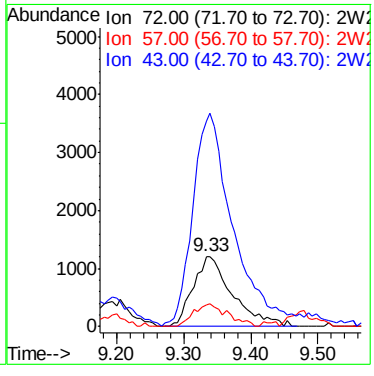


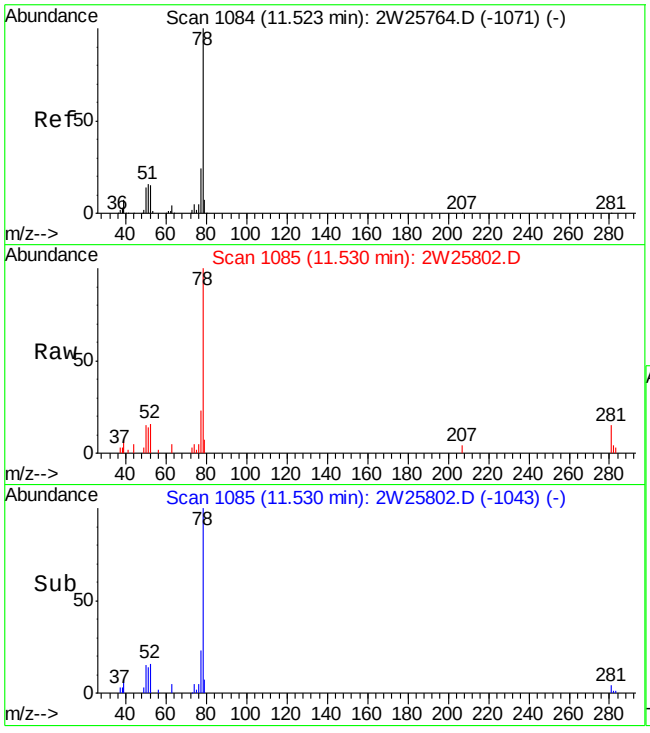


#38
METHYL ETHYL KETONE
Concen: 1.31 PPBV
RT: 9.33 min Scan# 724
Delta R.T. 0.05 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 72 Resp: 4914

Ion	Ratio	Lower	Upper
72	100		
57	30.4	8.3	48.3
43	292.2	294.9	334.9#

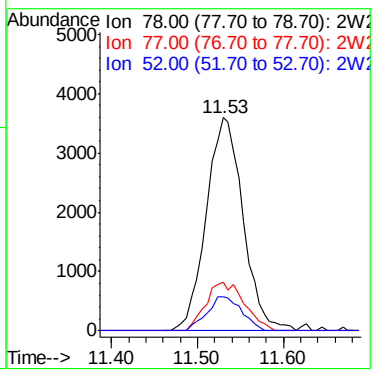


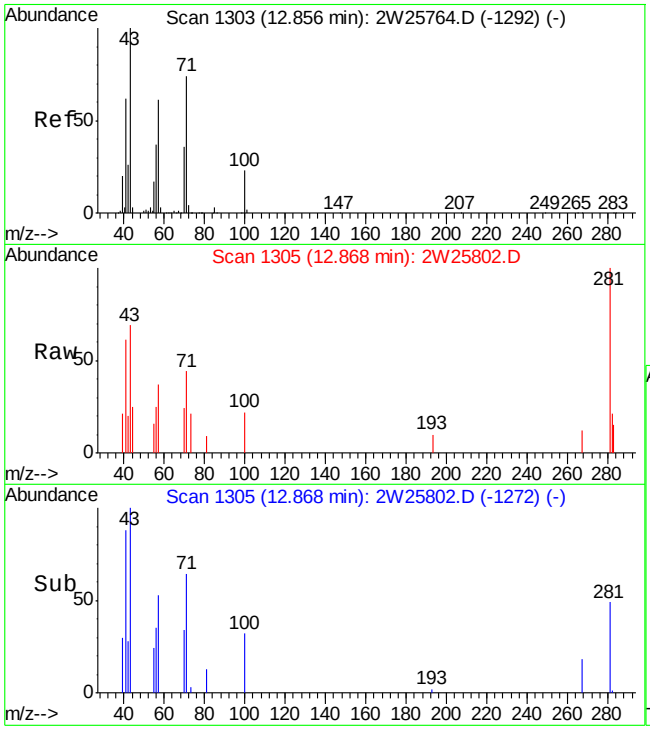


#47
BENZENE
Concen: 0.39 PPBV
RT: 11.53 min Scan# 1085
Delta R.T. 0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 78 Resp: 10709

Ion	Ratio	Lower	Upper
78	100		
77	23.9	3.5	43.5
52	15.1	0.0	34.5

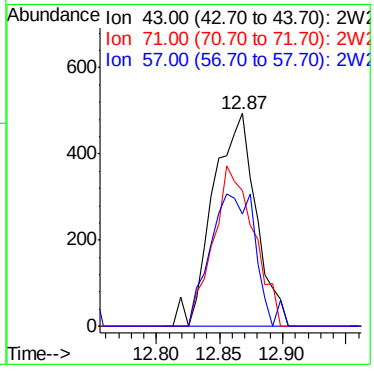


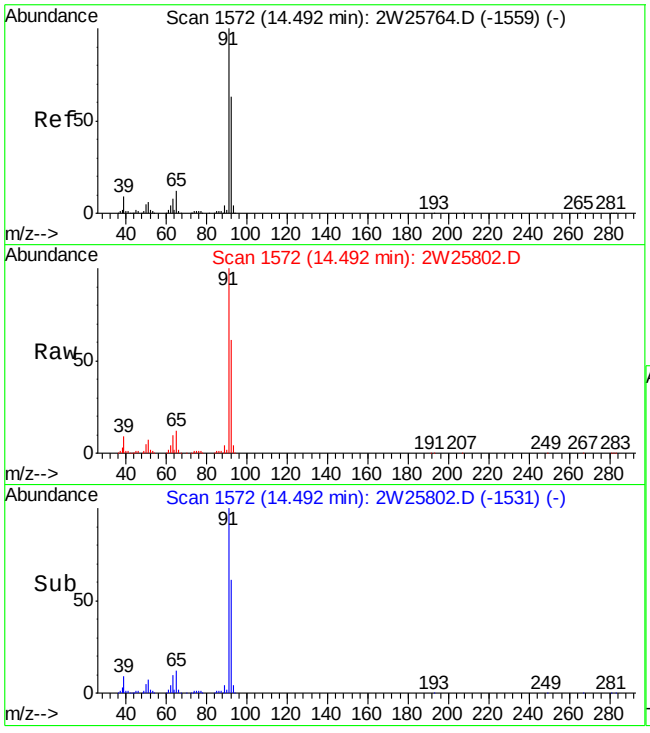


#56
HEPTANE
Concen: 0.11 PPBV
RT: 12.87 min Scan# 1305
Delta R.T. 0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 43 Resp: 1169

Ion	Ratio	Lower	Upper
43	100		
71	70.7	54.6	94.6
57	65.8	40.6	80.6

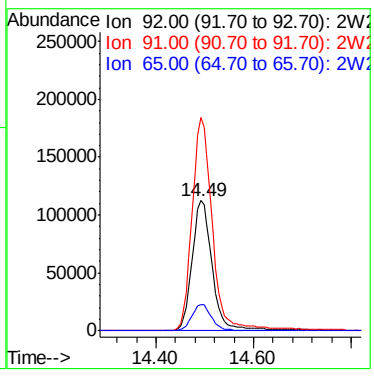


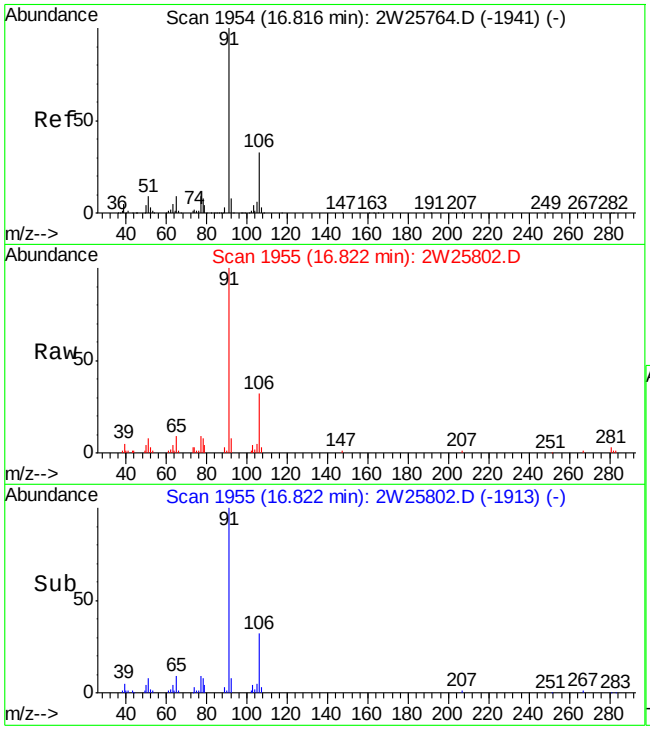


#60
TOLUENE
Concen: 17.91 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. -0.00 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 92 Resp: 322144

Ion	Ratio	Lower	Upper
92	100		
91	165.9	143.7	183.7
65	19.8	0.0	38.6

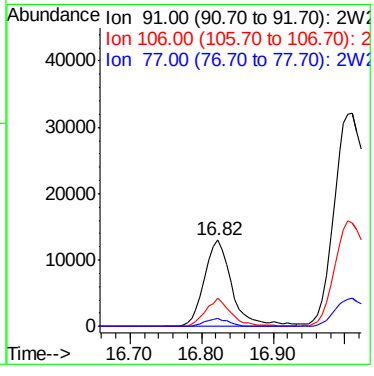


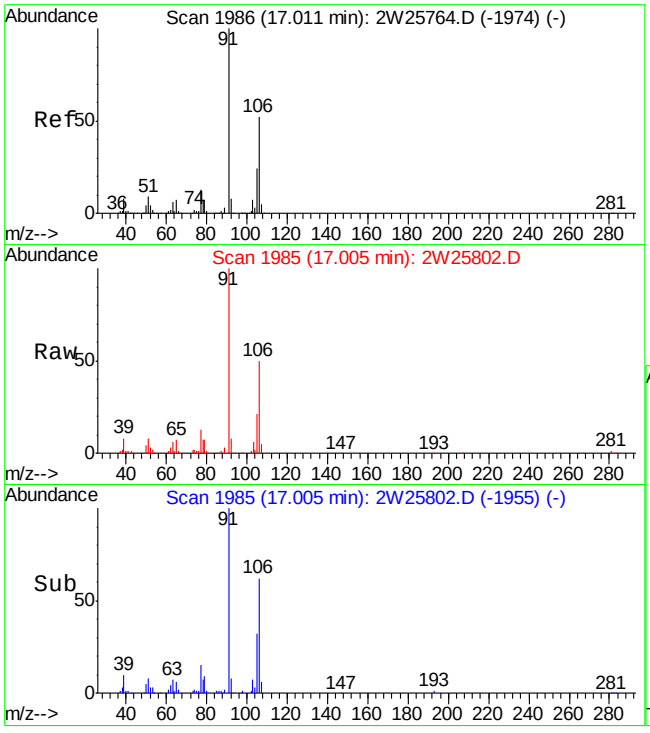


#71
ETHYLBENZENE
Concen: 1.08 PPBV
RT: 16.82 min Scan# 1955
Delta R.T. 0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion: 91 Resp: 35019

Ion	Ratio	Lower	Upper
91	100		
106	30.7	12.4	52.4
77	8.5	0.0	28.6

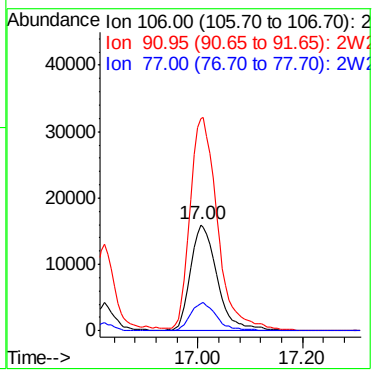


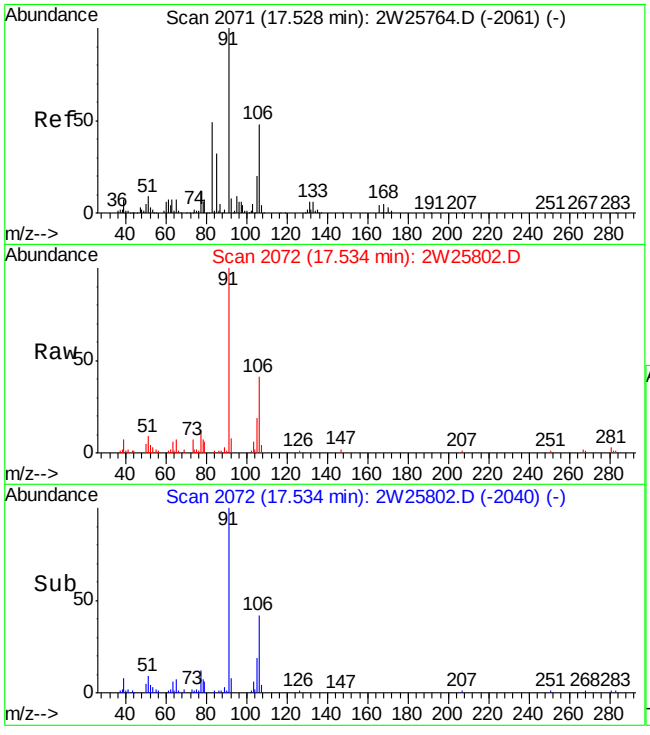


#72
m,p-XYLENE
Concen: 4.51 PPBV
RT: 17.00 min Scan# 1985
Delta R.T. -0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion:106 Resp: 56674

Ion	Ratio	Lower	Upper
106	100		
91	200.7	155.5	233.3
77	26.1	20.4	30.6

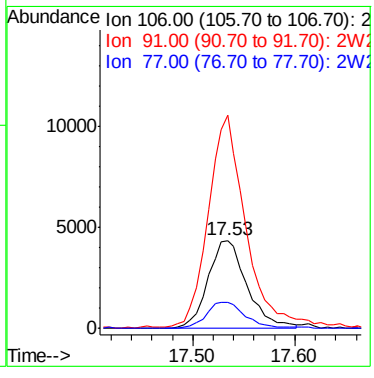


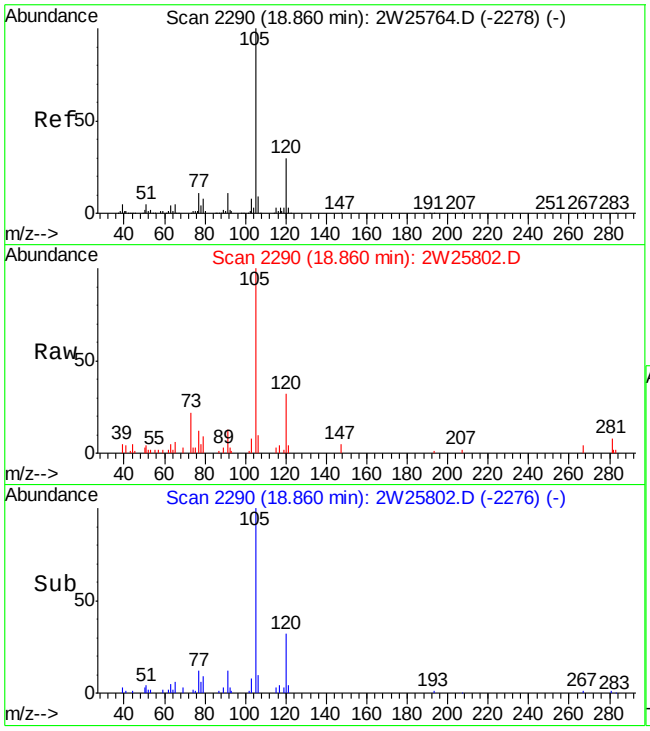


#73
o-XYLENE
Concen: 0.98 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. 0.01 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion:106 Resp: 11580

Ion	Ratio	Lower	Upper
106	100		
91	234.1	189.0	229.0#
77	29.9	5.7	45.7

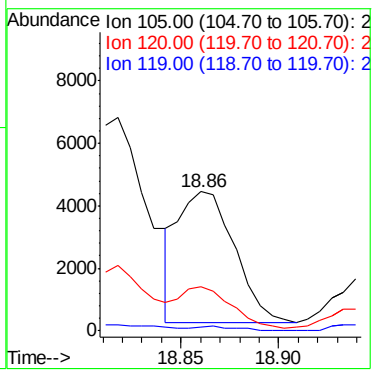


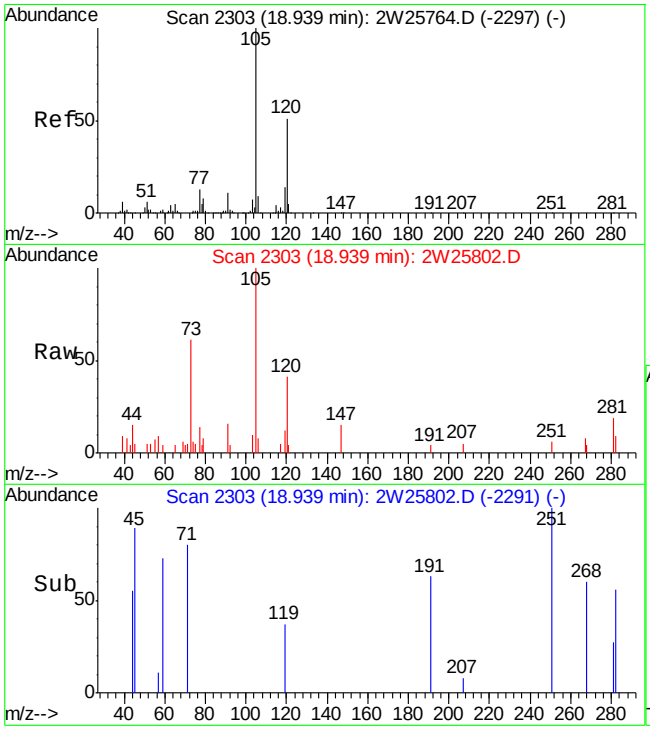


#82
4-ETHYLTOLUENE
Concen: 0.34 PPBV
RT: 18.86 min Scan# 2290
Delta R.T. -0.00 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion:105 Resp: 8358

Ion	Ratio	Lower	Upper
105	100		
120	28.9	10.4	50.4
119	2.5	0.0	22.6

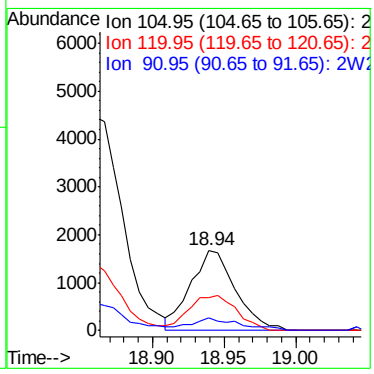


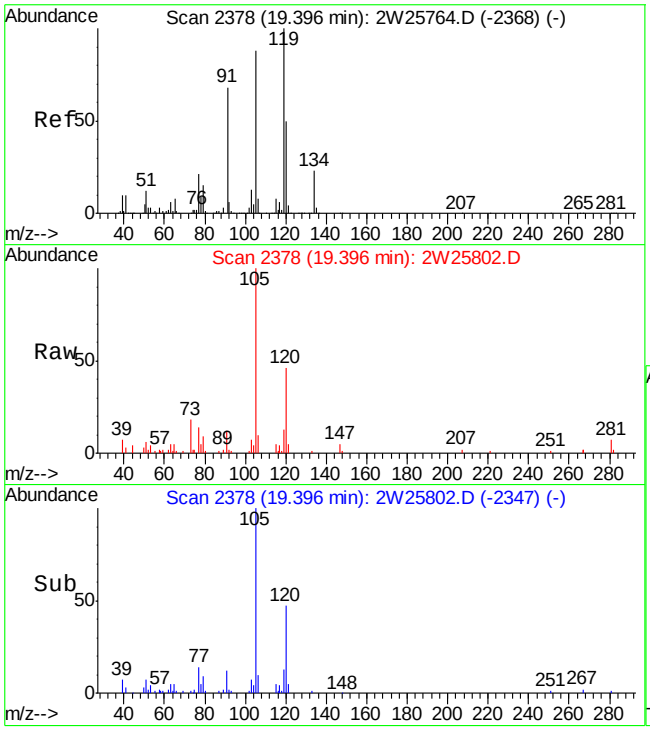


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.16 PPBV
RT: 18.94 min Scan# 2303
Delta R.T. -0.00 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion:105 Resp: 3644

Ion	Ratio	Lower	Upper
105	100		
120	48.0	30.1	70.1
91	17.5	0.0	30.6

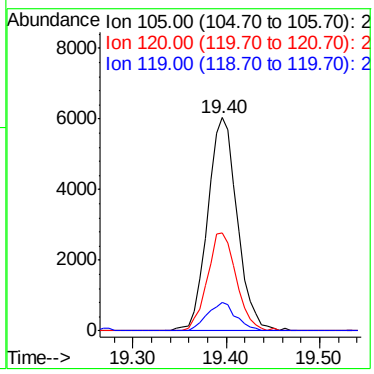




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.69 PPBV
RT: 19.40 min Scan# 2378
Delta R.T. -0.00 min
Lab File: 2W25802.D
Acq: 6 Oct 2009 1:00 am

Tgt Ion:105 Resp: 13427

Ion	Ratio	Lower	Upper
105	100		
120	45.0	38.0	78.0
119	12.8	102.8	142.8#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25712.D Vial: 5
Acq On : 28 Sep 2009 12:49 pm Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:26 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.97	128	121702	10.00	PPBV	0.04
46) 1,4-DIFLUOROBENZENE	11.89	114	581303	10.00	PPBV	0.02
63) CHLOROBENZENE-D5	16.40	82	237403	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.40	82	237017	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	85981	3.51	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 70.20%

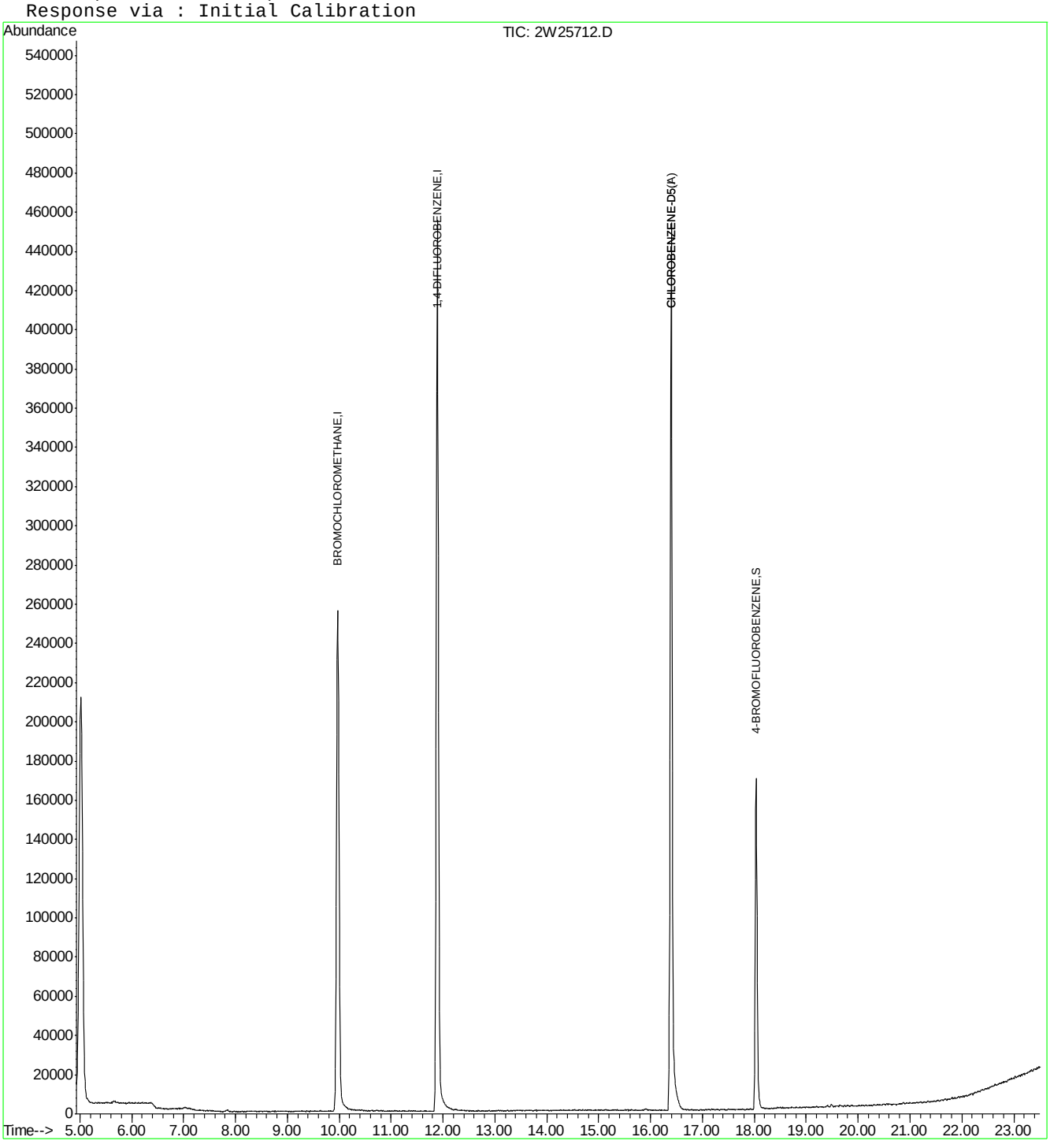
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25712.D Vial: 5
Acq On : 28 Sep 2009 12:49 pm Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:28 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25738.d
Acq On : 29 Sep 2009 1:17 pm
Operator : YOUMINH
Sample : MB
Misc : MS486581,V2W1084,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 30 11:25:06 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.924	128	134573	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.858	114	639927	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.384	82	270232	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.384	82	270452	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.027	95	97087	3.49	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 69.80%			

Target Compounds Qvalue

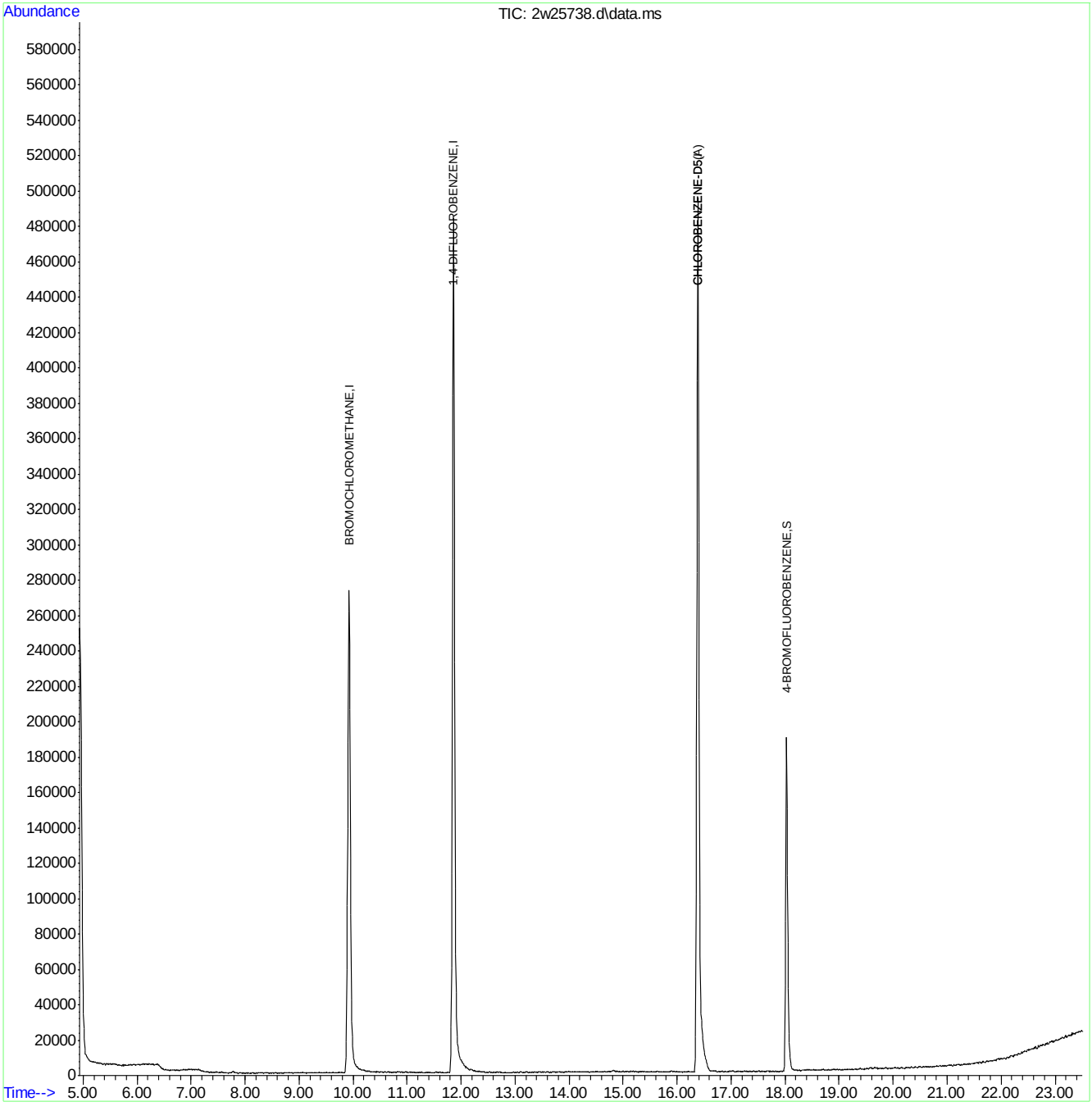
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25738.d
Acq On : 29 Sep 2009 1:17 pm
Operator : YOUMINH
Sample : MB
Misc : MS486581,V2W1084,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 30 11:25:06 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



M2W1080.M Wed Sep 30 11:25:13 2009 VOA-CLN-04 Page: 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25786.D Vial: 5
Acq On : 5 Oct 2009 11:04 am Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:00 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	71022	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.85	114	280951	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	111480	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	111382	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	45008	4.11	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 82.20%

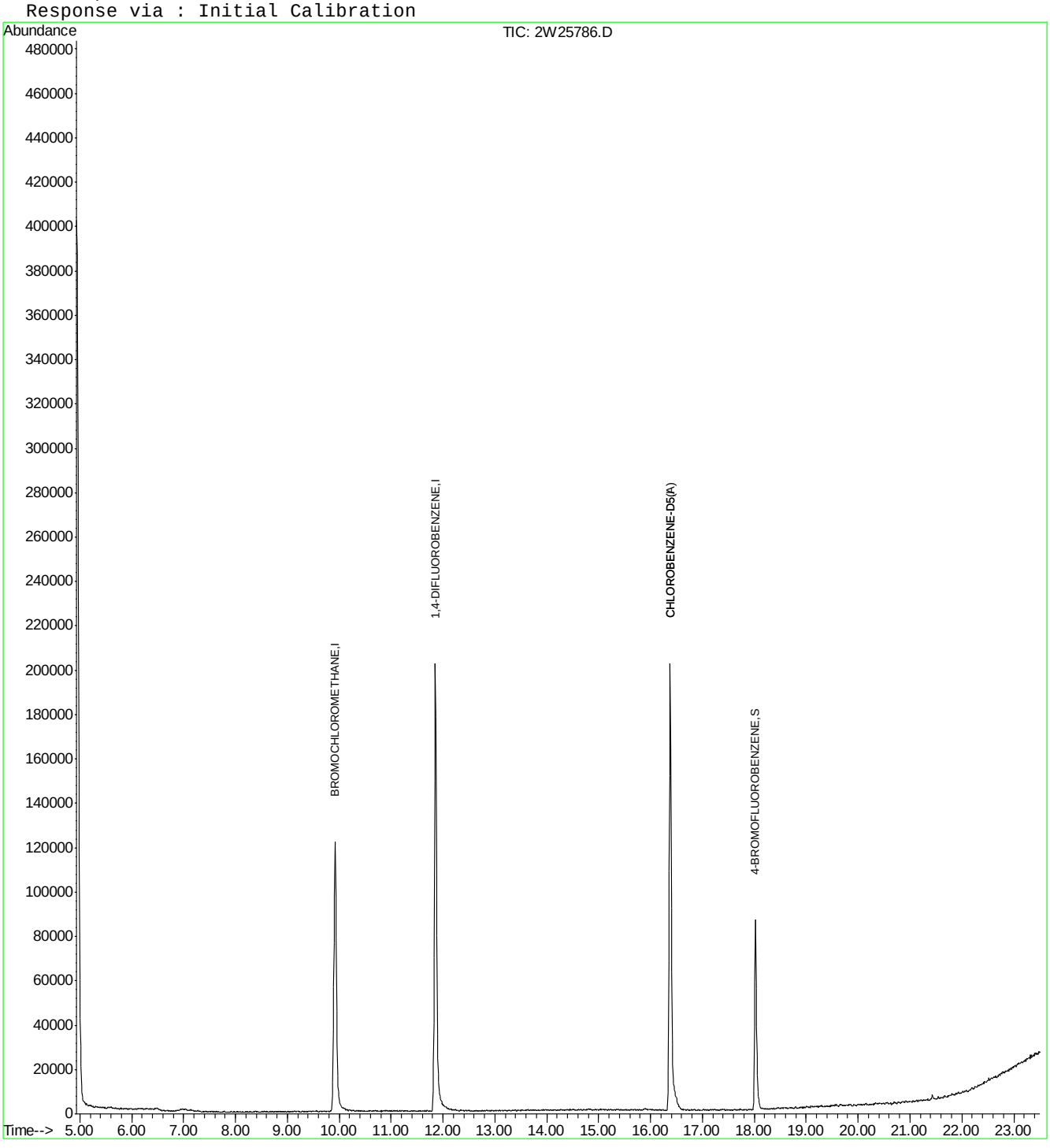
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25786.D Vial: 5
Acq On : 5 Oct 2009 11:04 am Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:27 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration



ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1073\2W25422.D Vial: 5
Acq On : 9 Sep 2009 1:35 pm Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 09 14:01:46 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.94	128	163630	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	733786	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.40	82	311382	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.40	82	311634	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	124027	3.91	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 78.20%

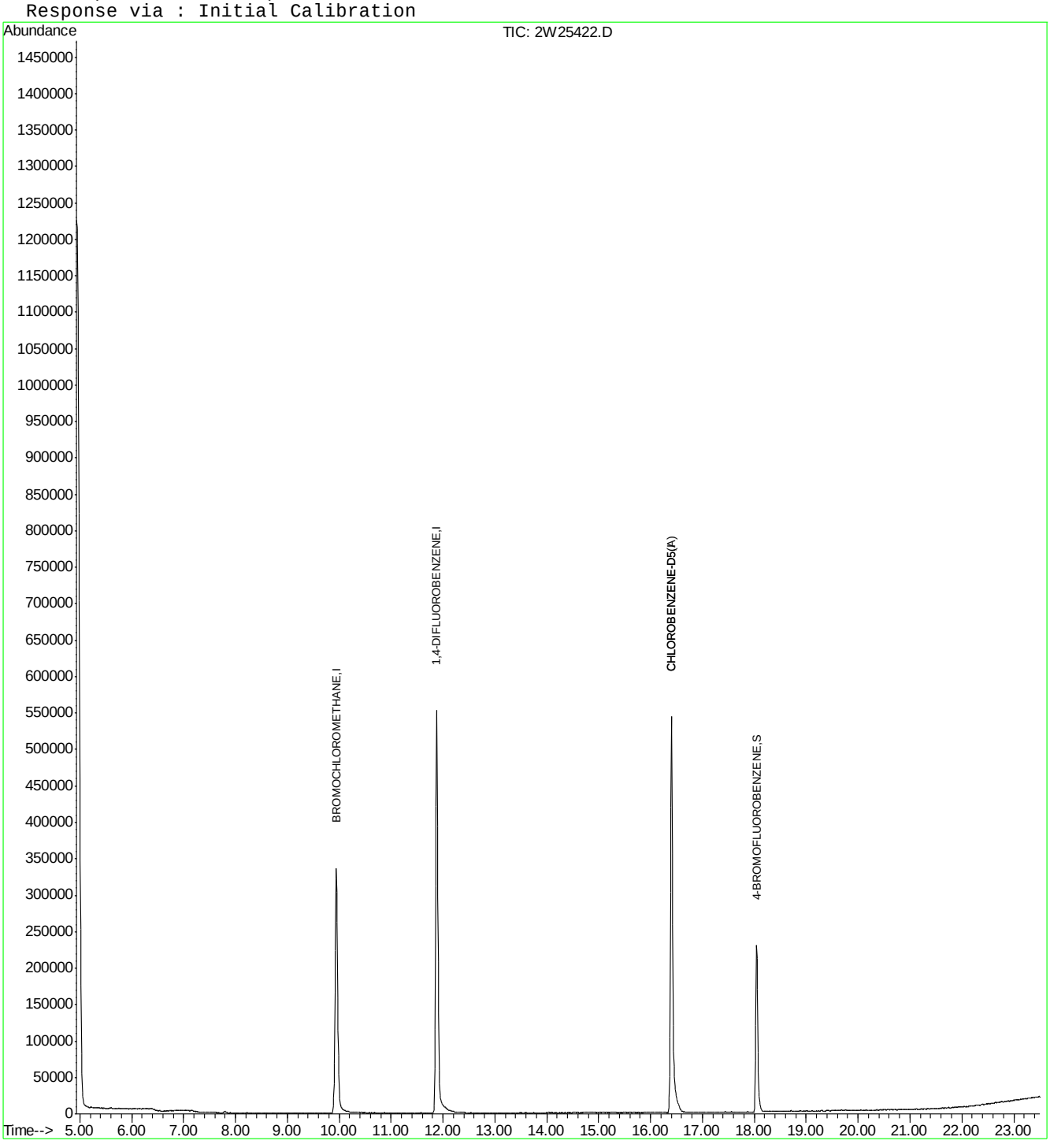
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1073\2W25422.D Vial: 5
Acq On : 9 Sep 2009 1:35 pm Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 14 9:24 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25475.D Vial: 5
Acq On : 11 Sep 2009 10:17 am Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:08 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.96	128	133845	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.89	114	569612	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	233731	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	233603	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	88558	3.72	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 74.40%

Target Compounds Qvalue

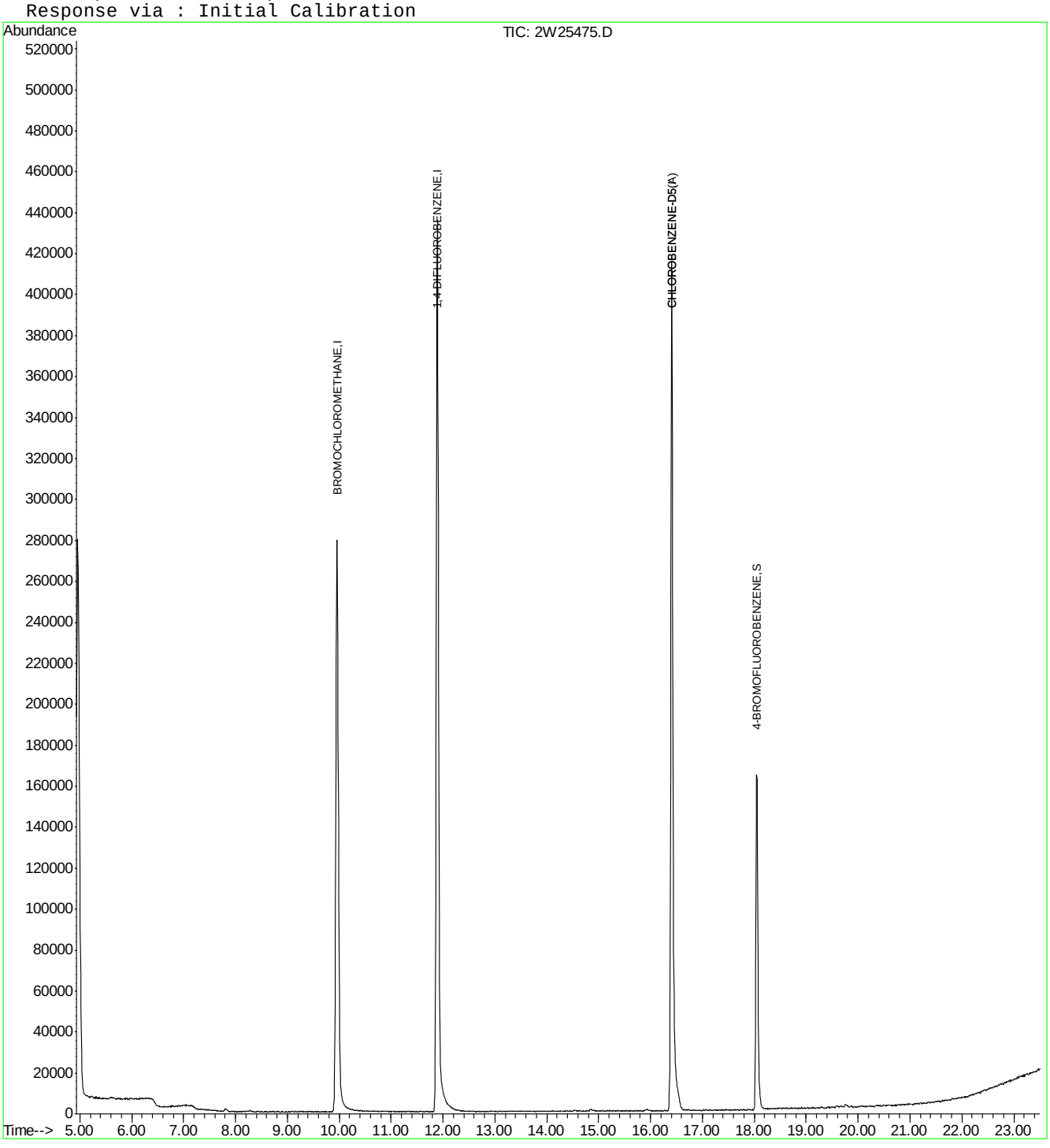
(#) = qualifier out of range (m) = manual integration (+) = signals summed
2W25475.D M2W1070.M Sun Sep 13 11:35:53 2009 MS2W Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25475.D
Acq On : 11 Sep 2009 10:17 am
Sample : MB
Misc : MS49009,V2W1075,,,,,1
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009

Vial: 5
Operator: YOUMINH
Inst : MS2W
Multiplr: 1.00
Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12870.D Vial: 5
Acq On : 5 Oct 2009 12:24 pm Operator: YOUMINH
Sample : MB Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:56 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	97525	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	387135	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	147587	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	147587	10.00	PPBV	-0.01

System Monitoring Compounds

78) 4-BROMOFLUOROBENZENE	15.34	95	66787	4.31	PPBV	-0.01

Spiked Amount 5.000 Range 65 - 128 Recovery = 86.20%

Target Compounds Qvalue

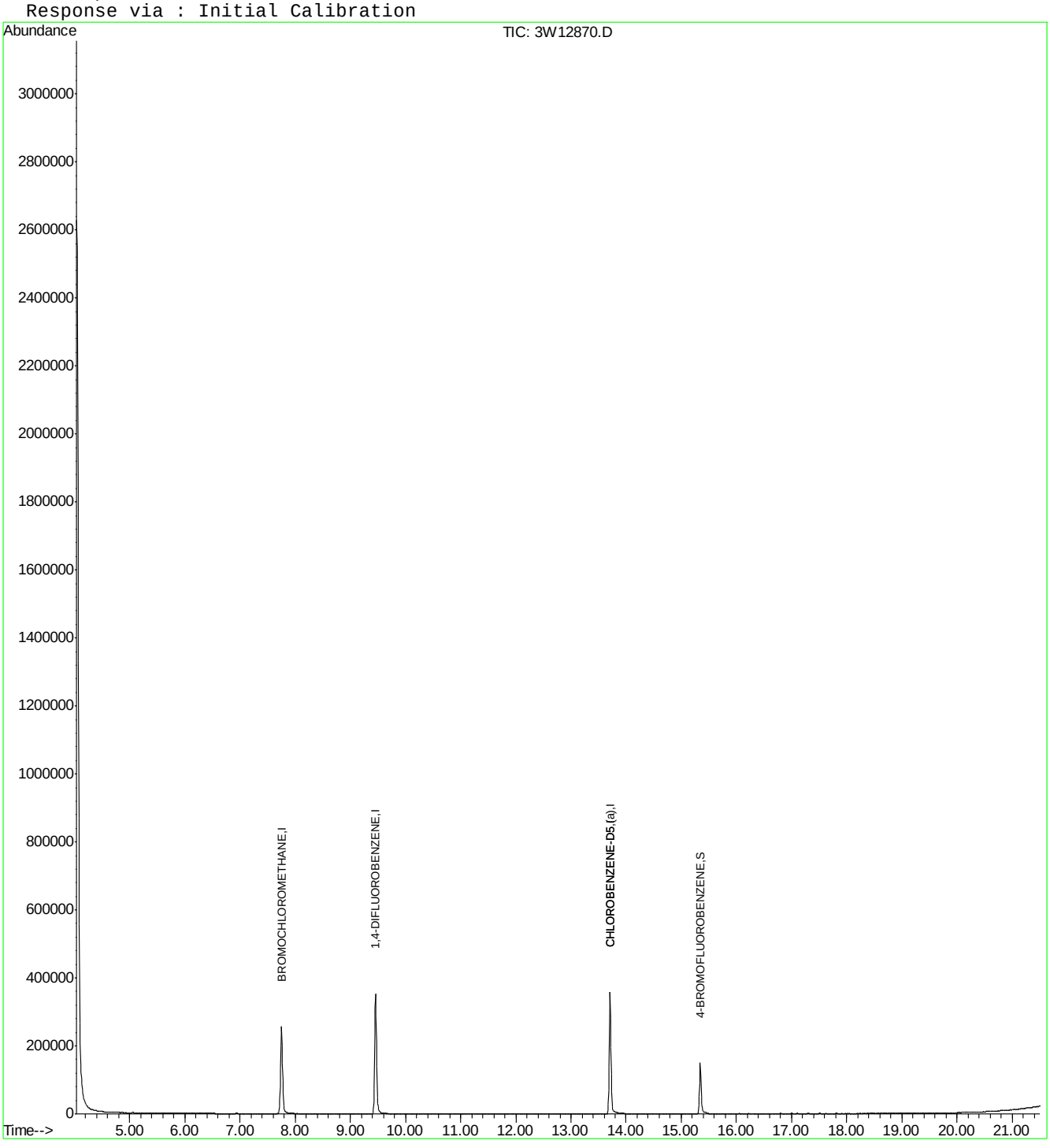
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12870.D
Acq On : 5 Oct 2009 12:24 pm
Sample : MB
Misc : MS49009,V3W524,,,,,1
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009

Vial: 5
Operator: YOUMINH
Inst : MS3W
Multiplr: 1.00
Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25710.D Vial: 3
Acq On : 28 Sep 2009 8:11 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:20 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.94	128	115896	10.00	PPBV	0.02
46) 1,4-DIFLUOROBENZENE	11.88	114	555542	10.00	PPBV	0.01
63) CHLOROBENZENE-D5	16.40	82	294813	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.40	82	294637	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.04	95	155680	5.12	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 102.40%

Target Compounds						Qvalue
2) FREON 115	5.03	119	113660	9.04	PPBV	92
3) DICHLORODIFLUOROMETHANE	5.03	85	175028	10.02	PPBV	99
4) FREON 152A	5.14	65	120397	11.83	PPBV	97
5) CHLORODIFLUOROMETHANE	5.19	67	44178	11.40	PPBV	98
6) PROPYLENE	5.23	41	191754	12.60	PPBV	100
7) PROPANE	5.25	43	69017	12.40	PPBV #	100
8) FREON 114	5.57	85	463272	10.56	PPBV	96
9) CHLOROMETHANE	5.48	52	63071	11.68	PPBV #	88
10) VINYL CHLORIDE	5.70	62	204319	11.57	PPBV	100
11) 1,3-BUTADIENE	5.84	54	156251	11.72	PPBV	96
12) n-BUTANE	5.90	43	320504	12.14	PPBV	98
13) BROMOMETHANE	6.12	94	158925	10.33	PPBV	100
14) CHLOROETHANE	6.30	64	106559	11.12	PPBV	98
15) FREON 123	6.77	83	334450	9.67	PPBV #	99
16) FREON 123A	6.82	117	169409	8.92	PPBV	87
17) TRICHLOROFLUOROMETHANE	7.06	101	324592	9.16	PPBV	100
18) ISOPROPYL ALCOHOL	7.11	45	255892	11.38	PPBV	99
19) ACETONE	6.89	58	70676	8.89	PPBV #	86
20) PENTANE	7.40	42	185765	11.84	PPBV	98
21) TVHC as EQUIV PENTANE	7.40	TIC	1136759m	11.69	PPBV	
22) ETHYL ETHER	7.40	74	69544	10.53	PPBV	95
23) IODOMETHANE	7.64	142	364768	9.64	PPBV	96
24) 1,1-DICHLOROETHYLENE	7.70	96	136928	9.47	PPBV	89
25) CARBON DISULFIDE	8.15	76	469986	10.21	PPBV	98
26) ETHANOL	6.41	45	60176	11.11	PPBV	96
27) BROMOETHENE	6.65	106	140768	9.66	PPBV	99
28) METHYLENE CHLORIDE	7.80	84	127689	9.54	PPBV	91
29) 3-CHLOROPROPENE	7.92	76	71311	10.91	PPBV #	84
30) FREON 113	8.06	151	219205	9.25	PPBV	92
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	168081	9.79	PPBV	94
32) TERTIARY BUTYL ALCOHOL	7.71	59	278076	11.36	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.98	73	387707	10.82	PPBV	96
34) TETRAHYDROFURAN	10.50	42	192127	13.08	PPBV	93
35) HEXANE	9.97	57	254184	12.15	PPBV	98
36) VINYL ACETATE	9.05	86	33853	10.60	PPBV #	16
37) 1,1-DICHLOROETHANE	8.94	63	313423	11.38	PPBV	99
38) METHYL ETHYL KETONE	9.32	72	75035	11.24	PPBV #	78
39) cis-1,2-DICHLOROETHYLENE	9.77	96	168862	9.95	PPBV	94
40) ETHYL ACETATE	9.96	61	47587	11.95	PPBV #	89
41) CHLOROFORM	10.07	83	304170	10.84	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25710.D Vial: 3
Acq On : 28 Sep 2009 8:11 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:20 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.86	57	300677	12.26	PPBV		98
43)	1,1,1-TRICHLOROETHANE	11.09	97	309089	10.62	PPBV		98
44)	CARBON TETRACHLORIDE	11.71	117	317403	10.45	PPBV		99
45)	1,2-DICHLOROETHANE	10.82	62	207951	11.41	PPBV		99
47)	BENZENE	11.55	78	516988	10.12	PPBV		98
48)	CYCLOHEXANE	11.84	84	227850	9.50	PPBV		93
49)	2,3-DIMETHYLPENTANE	12.05	71	113491	11.17	PPBV		94
50)	TRICHLOROETHYLENE	12.61	95	200749	10.04	PPBV		94
51)	1,2-DICHLOROPROPANE	12.38	63	199472	10.65	PPBV		98
52)	BROMODICHLOROMETHANE	12.57	83	325797	10.87	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.64	57	724776	11.66	PPBV		99
54)	1,4-DIOXANE	12.63	88	96735	10.32	PPBV	#	1
55)	METHYL METHACRYLATE	12.78	69	153520	11.56	PPBV		91
56)	HEPTANE	12.88	43	301593	12.21	PPBV		94
57)	TVHC as EQUIV HEPTANE	12.88	TIC	1273242m	11.59	PPBV		
58)	METHYL ISOBUTYL KETONE	13.51	43	353753	12.95	PPBV		94
59)	cis-1,3-DICHLOROPROPENE	13.48	75	267596	10.89	PPBV		94
60)	TOLUENE	14.51	92	340762	10.21	PPBV		98
61)	trans-1,3-DICHLOROPROPENE	14.02	75	244491	11.05	PPBV		96
62)	1,1,2-TRICHLOROETHANE	14.22	83	164264	10.94	PPBV		98
64)	2-HEXANONE	14.77	58	166454	11.11	PPBV		91
65)	TETRACHLOROETHYLENE	15.72	164	212729	8.16	PPBV		97
66)	DIBROMOCHLOROMETHANE	14.97	129	308340	9.50	PPBV		100
67)	1,2-DIBROMOETHANE	15.23	107	259612	9.54	PPBV		100
68)	OCTANE	15.50	43	384574	11.97	PPBV		92
69)	1,1,1,2-TETRACHLOROETHANE	16.42	131	213005	9.30	PPBV	#	99
70)	CHLOROBENZENE	16.45	112	367360	9.03	PPBV		96
71)	ETHYLBENZENE	16.83	91	638605	9.24	PPBV		98
72)	m,p-XYLENE	17.03	106	478437	17.99	PPBV		98
73)	o-XYLENE	17.55	106	232459	9.37	PPBV		98
74)	STYRENE	17.43	104	335409	10.10	PPBV		98
75)	NONANE	17.73	43	340974	12.50	PPBV		94
76)	BROMOFORM	17.15	173	250113	9.94	PPBV		99
78)	1,1,2,2-TETRACHLOROETHANE	17.54	83	284950	11.17	PPBV		100
79)	ISOPROPYLBENZENE	18.17	105	610904	9.99	PPBV		98
80)	2-CHLOROTOLUENE	18.70	126	140521	10.06	PPBV	#	88
81)	n-PROPYLBENZENE	18.72	120	153405	10.57	PPBV		88
82)	4-ETHYLTOLUENE	18.87	105	498206	11.18	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.95	105	414635	10.92	PPBV		98
84)	TERT-BUTYLBENZENE	19.40	134	106277	10.16	PPBV		91
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	372878	11.82	PPBV		95
86)	m-DICHLOROBENZENE	19.59	146	206350	10.88	PPBV		100
87)	BENZYL CHLORIDE	19.57	91	210823	12.36	PPBV		98
88)	p-DICHLOROBENZENE	19.66	146	179706	10.58	PPBV		98
89)	SEC-BUTYLBENZENE	19.70	134	111091	10.47	PPBV		89
90)	p-ISOPROPYLTOLUENE	19.87	134	105166	11.10	PPBV		94
91)	o-DICHLOROBENZENE	20.05	146	169305	11.05	PPBV		99
92)	n-BUTYLBENZENE	20.33	134	69460	11.82	PPBV		89
93)	HEXACHLOROBUTADIENE	22.41	225	44267	10.39	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25710.D Vial: 3
Acq On : 28 Sep 2009 8:11 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:20 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

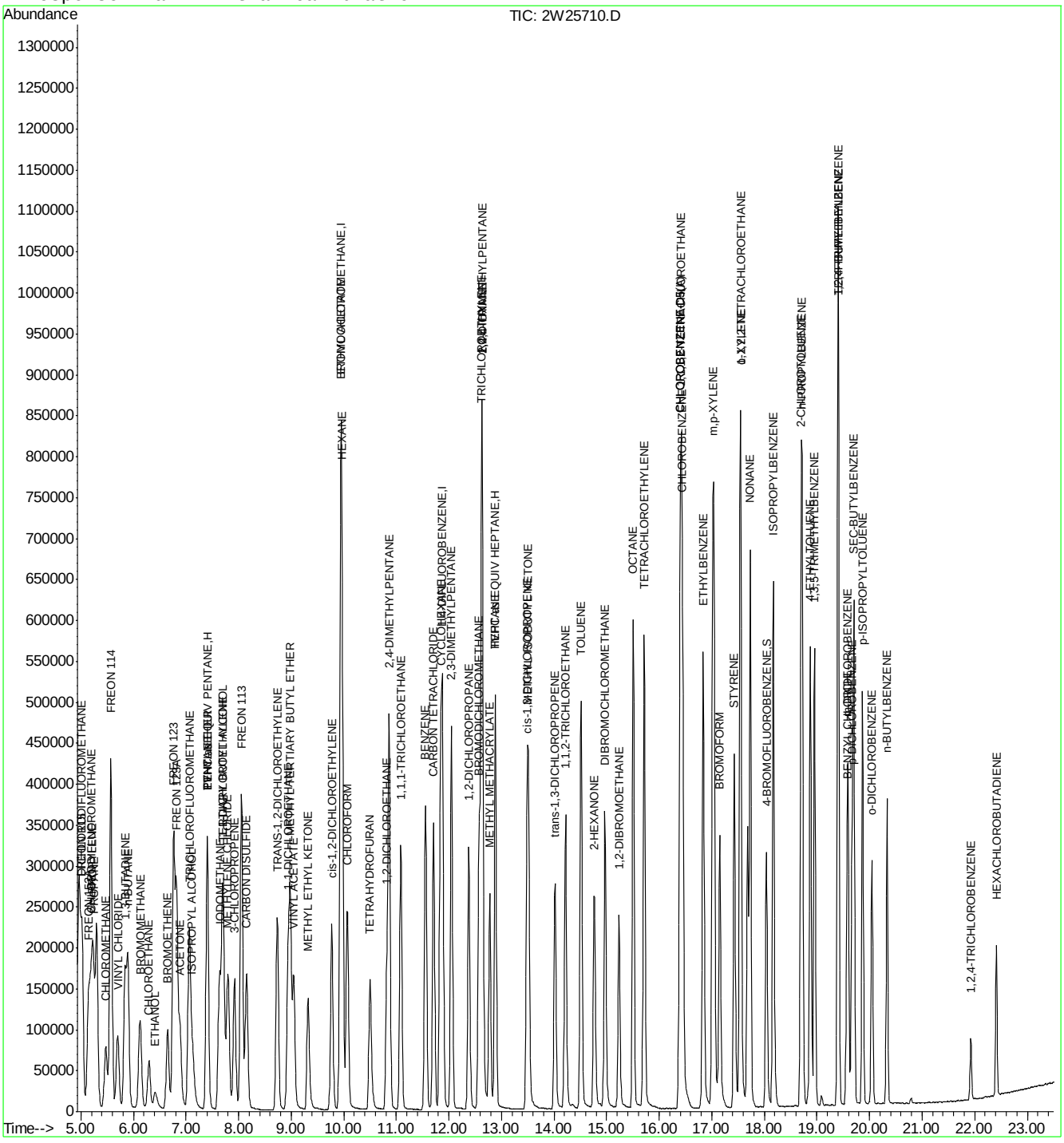
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	30295	10.67 PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25710.D Vial: 3
Acq On : 28 Sep 2009 8:11 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:28 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

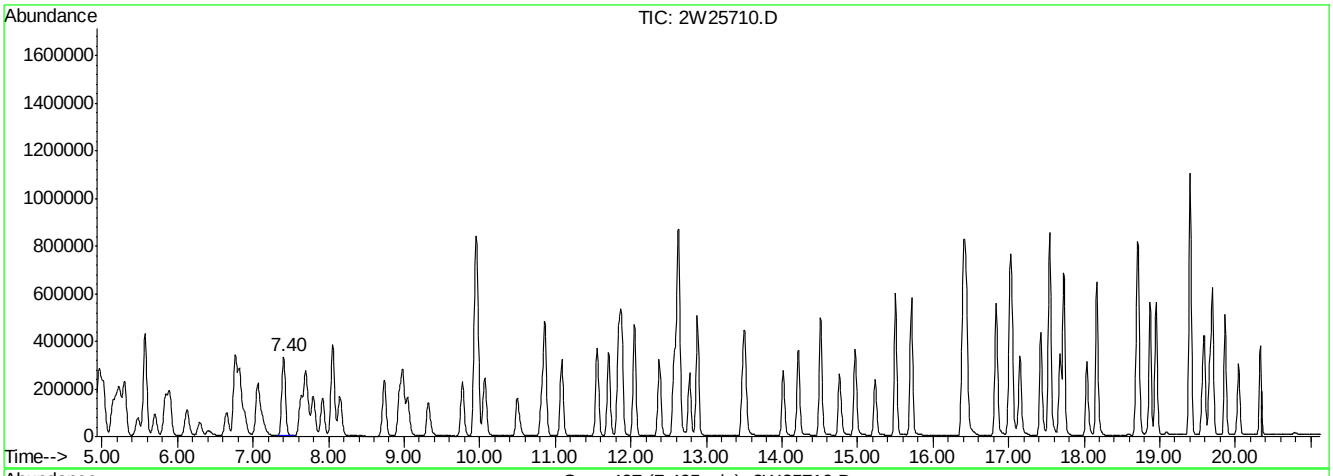


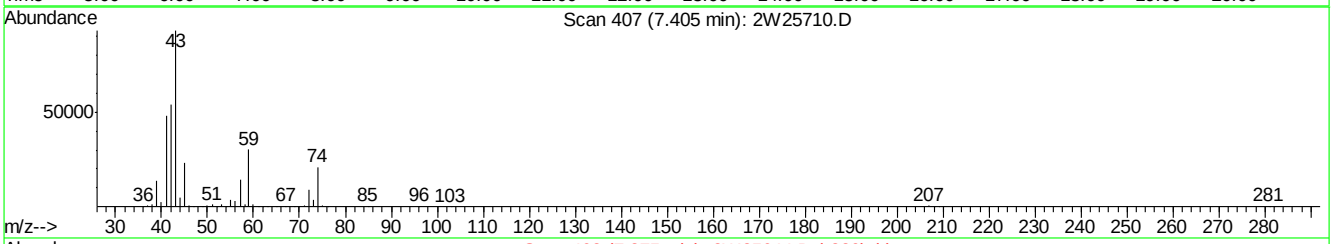
ACCUTEST Laboratories JA28238

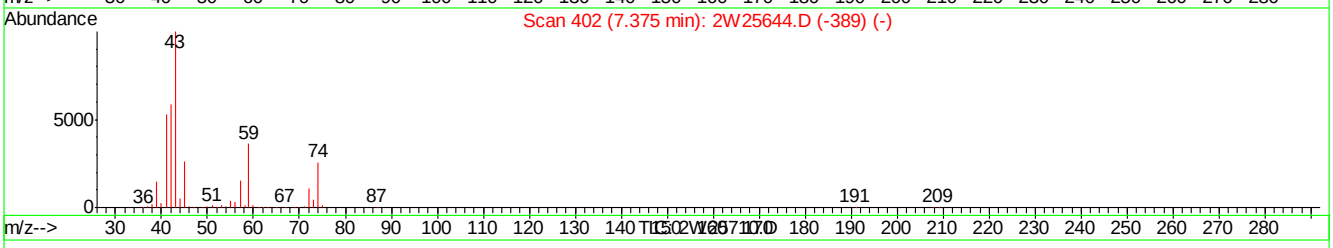
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25710.D Vial: 3
Acq On : 28 Sep 2009 8:11 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:28 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 11.69PPBV m

response 1136759

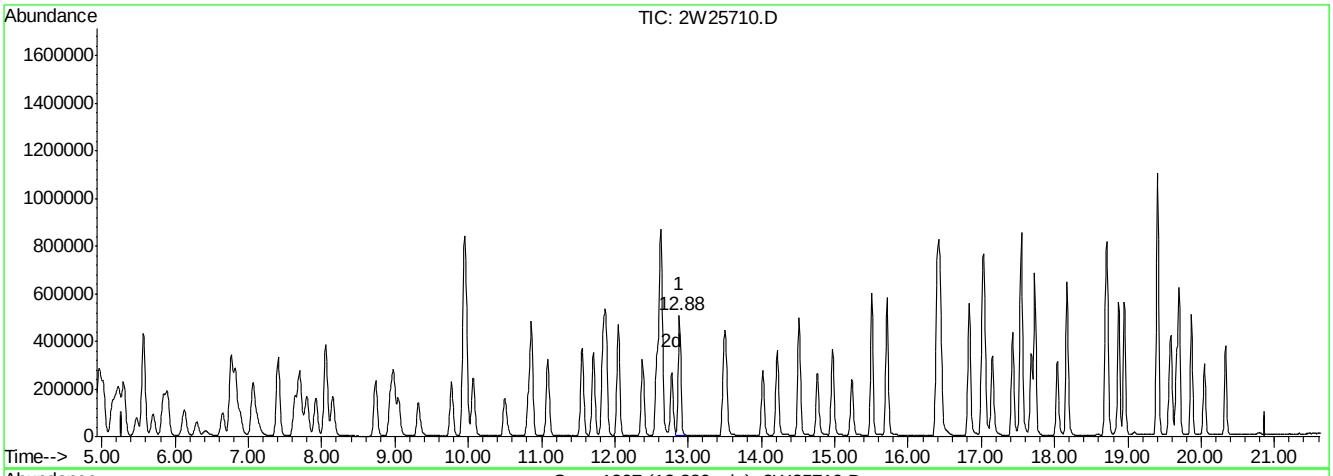
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

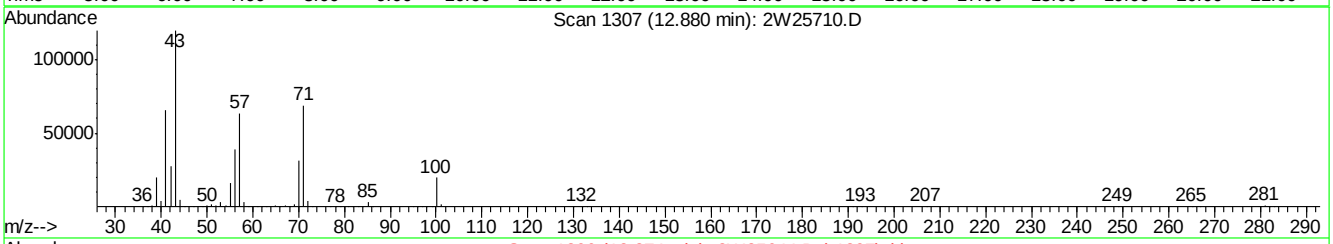
2W25710.D M2W1080.M Tue Sep 29 10:48:50 2009 MS2W

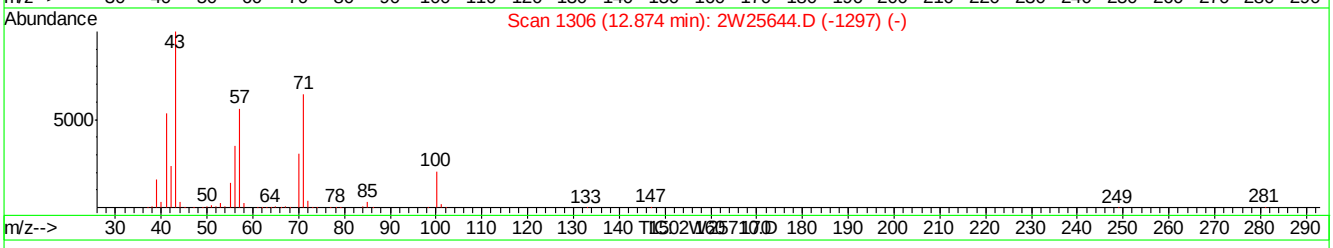
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25710.D Vial: 3
Acq On : 28 Sep 2009 8:11 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:28 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.88min 11.59PPBV m

response 1273242

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25710.D M2W1080.M Tue Sep 29 10:48:53 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25711.D Vial: 3
Acq On : 28 Sep 2009 8:56 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:22 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	115710	10.00	PPBV	0.03
46) 1,4-DIFLUOROBENZENE	11.88	114	555957	10.00	PPBV	0.01
63) CHLOROBENZENE-D5	16.39	82	289858	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	289668	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	152686	5.11	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 102.20%

Target Compounds						Qvalue
2) FREON 115	5.05	119	117380	9.36	PPBV	93
3) DICHLORODIFLUOROMETHANE	5.05	85	180259	10.34	PPBV	99
4) FREON 152A	5.17	65	123319	12.14	PPBV	97
5) CHLORODIFLUOROMETHANE	5.21	67	45540	11.78	PPBV	98
6) PROPYLENE	5.25	41	197247	12.98	PPBV	99
7) PROPANE	5.28	43	69656	12.54	PPBV #	100
8) FREON 114	5.59	85	475677	10.87	PPBV	96
9) CHLOROMETHANE	5.50	52	65464	12.14	PPBV #	88
10) VINYL CHLORIDE	5.73	62	209973	11.91	PPBV	100
11) 1,3-BUTADIENE	5.86	54	161648	12.14	PPBV	94
12) n-BUTANE	5.91	43	338417	12.84	PPBV	98
13) BROMOMETHANE	6.15	94	156037	10.15	PPBV	100
14) CHLOROETHANE	6.32	64	106449	11.13	PPBV	97
15) FREON 123	6.78	83	336162	9.73	PPBV #	99
16) FREON 123A	6.84	117	169042	8.92	PPBV	83
17) TRICHLOROFLUOROMETHANE	7.08	101	331183	9.36	PPBV	99
18) ISOPROPYL ALCOHOL	7.11	45	261665	11.66	PPBV	99
19) ACETONE	6.89	58	73958	9.32	PPBV #	82
20) PENTANE	7.42	42	192372	12.28	PPBV	99
21) TVHC as EQUIV PENTANE	7.42	TIC	1188545m	12.25	PPBV	
22) ETHYL ETHER	7.42	74	73860	11.20	PPBV	93
23) IODOMETHANE	7.65	142	372149	9.85	PPBV	96
24) 1,1-DICHLOROETHYLENE	7.71	96	139173	9.65	PPBV	89
25) CARBON DISULFIDE	8.17	76	481646	10.48	PPBV	98
26) ETHANOL	6.41	45	63043	11.66	PPBV	97
27) BROMOETHENE	6.67	106	138393	9.51	PPBV	98
28) METHYLENE CHLORIDE	7.81	84	131711	9.85	PPBV	91
29) 3-CHLOROPROPENE	7.93	76	72945	11.18	PPBV #	82
30) FREON 113	8.07	151	224040	9.47	PPBV	93
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	172190	10.05	PPBV	92
32) TERTIARY BUTYL ALCOHOL	7.71	59	263304	10.78	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.99	73	412257	11.52	PPBV	96
34) TETRAHYDROFURAN	10.50	42	205964	14.05	PPBV	92
35) HEXANE	9.98	57	261758	12.53	PPBV	97
36) VINYL ACETATE	9.05	86	36446	11.43	PPBV #	57
37) 1,1-DICHLOROETHANE	8.95	63	323603	11.77	PPBV	99
38) METHYL ETHYL KETONE	9.32	72	78542	11.79	PPBV #	73
39) cis-1,2-DICHLOROETHYLENE	9.78	96	174591	10.31	PPBV	94
40) ETHYL ACETATE	9.96	61	50053	12.59	PPBV #	89
41) CHLOROFORM	10.07	83	312423	11.15	PPBV	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25711.D Vial: 3
Acq On : 28 Sep 2009 8:56 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:22 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	310656	12.69 PPBV		99
43)	1,1,1-TRICHLOROETHANE	11.09	97	318422	10.96 PPBV		98
44)	CARBON TETRACHLORIDE	11.71	117	327846	10.81 PPBV		100
45)	1,2-DICHLOROETHANE	10.82	62	218341	12.00 PPBV		99
47)	BENZENE	11.55	78	538955	10.55 PPBV		99
48)	CYCLOHEXANE	11.84	84	232464	9.69 PPBV		92
49)	2,3-DIMETHYLPENTANE	12.05	71	115603	11.37 PPBV		92
50)	TRICHLOROETHYLENE	12.61	95	205947	10.30 PPBV		94
51)	1,2-DICHLOROPROPANE	12.38	63	210482	11.23 PPBV		98
52)	BROMODICHLOROMETHANE	12.57	83	337368	11.24 PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.64	57	740872	11.91 PPBV		99
54)	1,4-DIOXANE	12.62	88	98772	10.53 PPBV	#	37
55)	METHYL METHACRYLATE	12.77	69	161564	12.15 PPBV		91
56)	HEPTANE	12.88	43	312427	12.64 PPBV		94
57)	TVHC as EQUIV HEPTANE	12.88	TIC	1309636m	11.92 PPBV		
58)	METHYL ISOBUTYL KETONE	13.51	43	358150	13.11 PPBV		94
59)	cis-1,3-DICHLOROPROPENE	13.48	75	281034	11.43 PPBV		95
60)	TOLUENE	14.51	92	356105	10.67 PPBV		99
61)	trans-1,3-DICHLOROPROPENE	14.01	75	258633	11.68 PPBV		96
62)	1,1,2-TRICHLOROETHANE	14.21	83	171114	11.39 PPBV		98
64)	2-HEXANONE	14.75	58	166585	11.31 PPBV		91
65)	TETRACHLOROETHYLENE	15.71	164	217033	8.46 PPBV		96
66)	DIBROMOCHLOROMETHANE	14.97	129	319867	10.03 PPBV		100
67)	1,2-DIBROMOETHANE	15.23	107	270967	10.13 PPBV		100
68)	OCTANE	15.50	43	392071	12.41 PPBV		93
69)	1,1,1,2-TETRACHLOROETHANE	16.41	131	221907	9.85 PPBV	#	100
70)	CHLOROBENZENE	16.44	112	379721	9.49 PPBV		96
71)	ETHYLBENZENE	16.83	91	661634	9.74 PPBV		99
72)	m,p-XYLENE	17.03	106	500091	19.13 PPBV		99
73)	o-XYLENE	17.54	106	241622	9.90 PPBV		97
74)	STYRENE	17.42	104	351020	10.75 PPBV		98
75)	NONANE	17.73	43	359169	13.39 PPBV		94
76)	BROMOFORM	17.14	173	260296	10.52 PPBV		99
78)	1,1,2,2-TETRACHLOROETHANE	17.53	83	298394	11.90 PPBV		100
79)	ISOPROPYLBENZENE	18.17	105	642684	10.69 PPBV		98
80)	2-CHLOROTOLUENE	18.70	126	147191	10.72 PPBV	#	88
81)	n-PROPYLBENZENE	18.71	120	161912	11.35 PPBV		90
82)	4-ETHYLTOLUENE	18.87	105	520244	11.87 PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.95	105	434258	11.63 PPBV		97
84)	TERT-BUTYLBENZENE	19.40	134	111858	10.87 PPBV		92
85)	1,2,4-TRIMETHYLBENZENE	19.40	105	384290	12.39 PPBV		97
86)	m-DICHLOROBENZENE	19.59	146	210218	11.28 PPBV		99
87)	BENZYL CHLORIDE	19.57	91	211311	12.60 PPBV		98
88)	p-DICHLOROBENZENE	19.66	146	185788	11.13 PPBV		99
89)	SEC-BUTYLBENZENE	19.69	134	114932	11.02 PPBV		89
90)	p-ISOPROPYLTOLUENE	19.86	134	107255	11.51 PPBV		94
91)	o-DICHLOROBENZENE	20.04	146	172961	11.48 PPBV		99
92)	n-BUTYLBENZENE	20.33	134	69213	11.98 PPBV		88
93)	HEXACHLOROBUTADIENE	22.41	225	43132	10.30 PPBV		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25711.D Vial: 3
Acq On : 28 Sep 2009 8:56 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:22 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

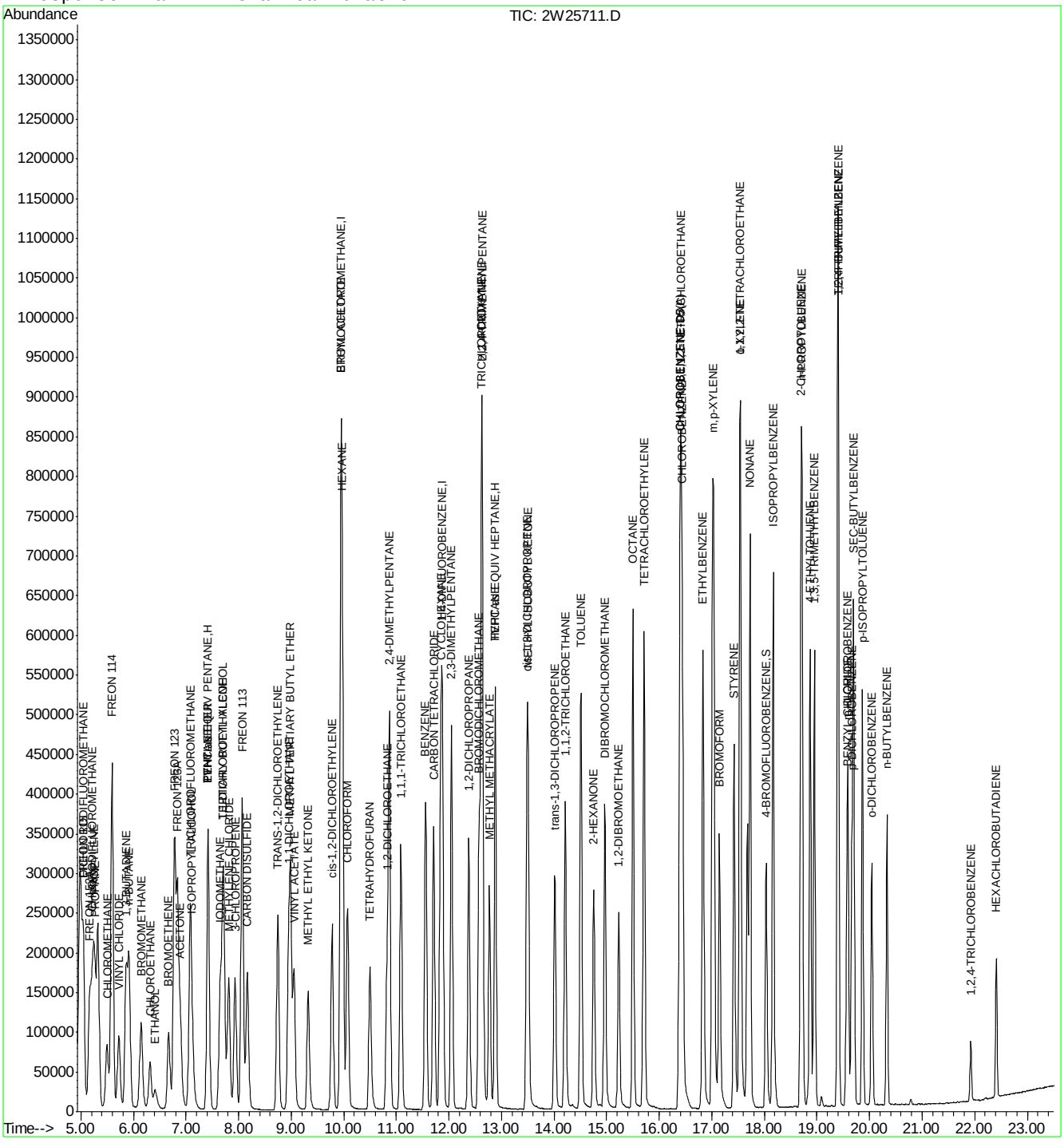
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	29992	10.74 PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25711.D Vial: 3
Acq On : 28 Sep 2009 8:56 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:28 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

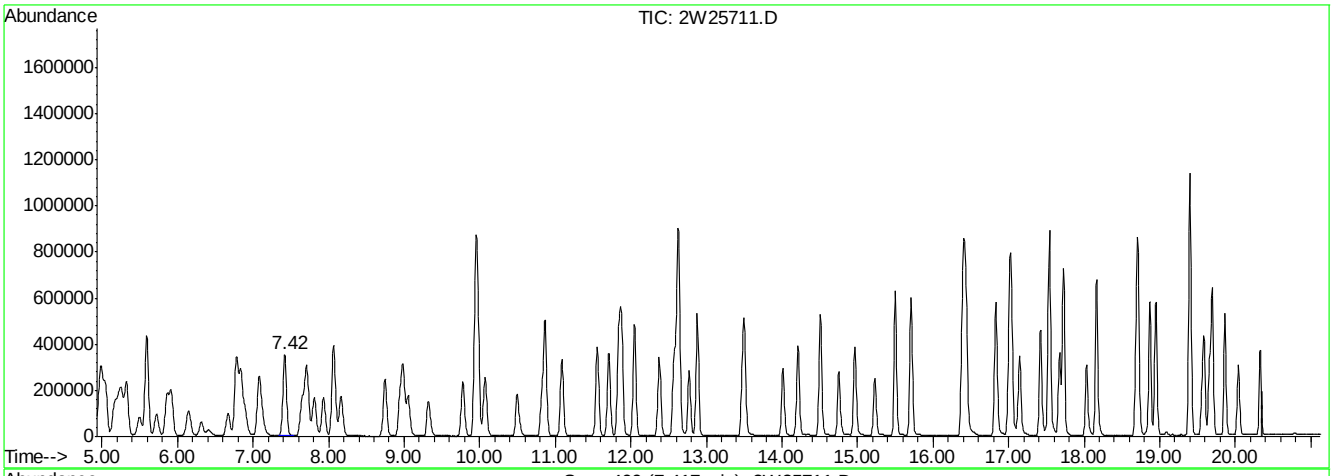


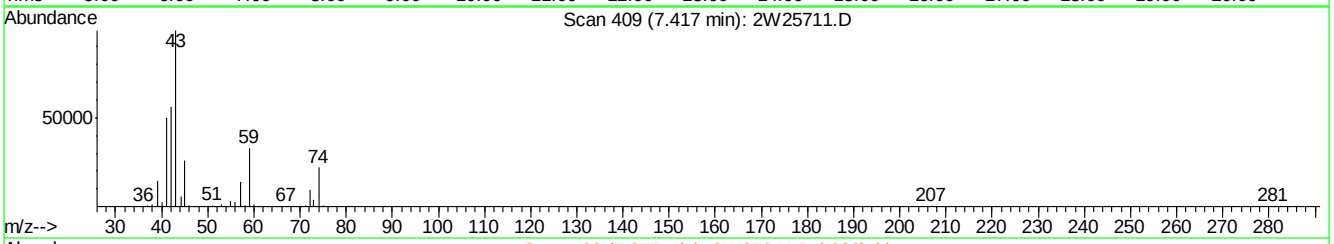
ACCUTEST Laboratories JA28238

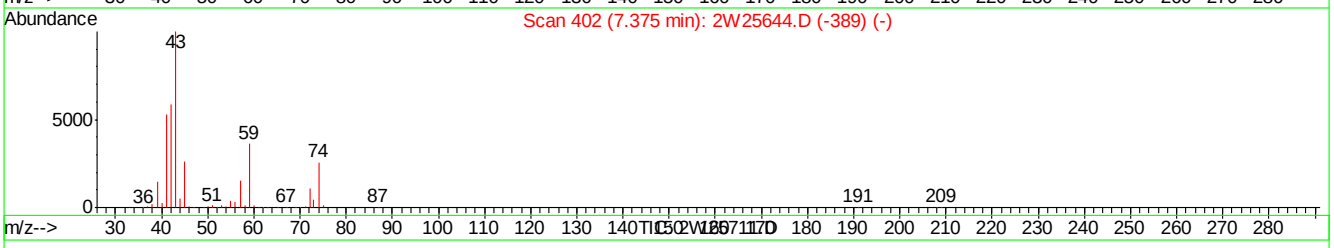
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25711.D Vial: 3
Acq On : 28 Sep 2009 8:56 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:28 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.42min 12.25PPBV m

response 1188545

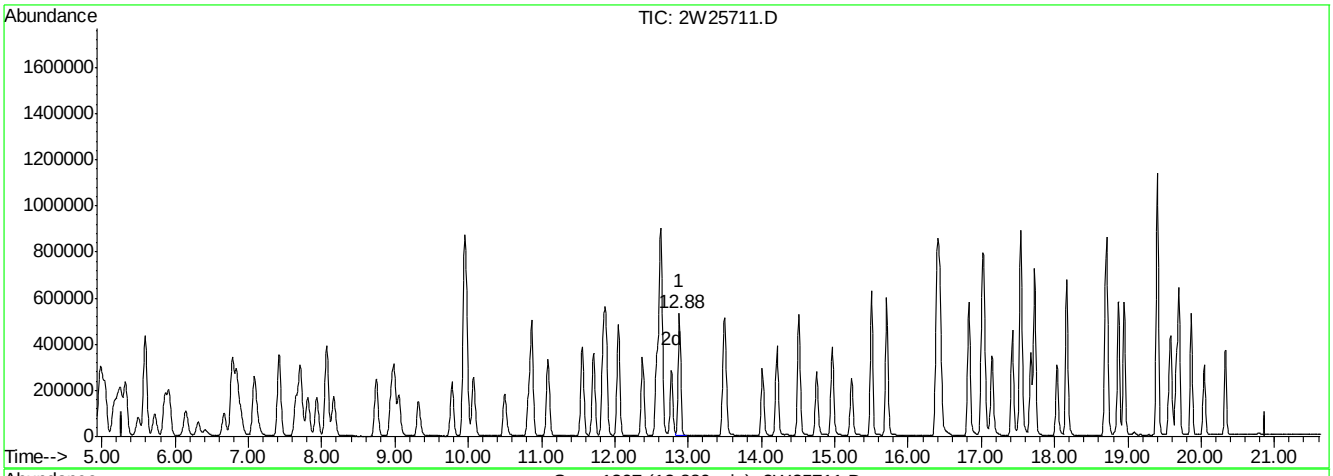
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

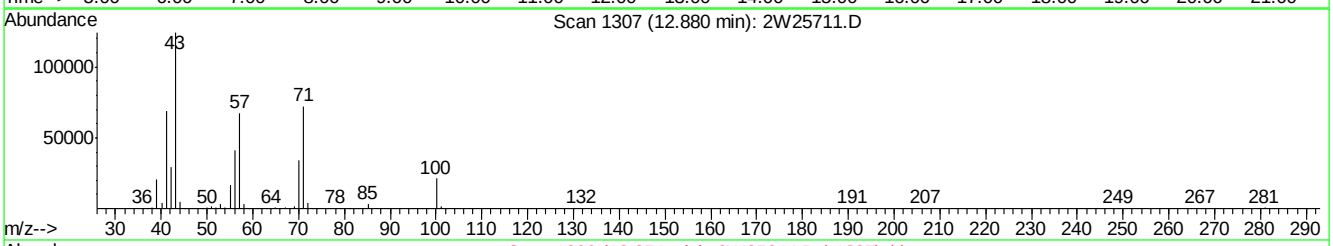
2W25711.D M2W1080.M Tue Sep 29 10:49:07 2009 MS2W

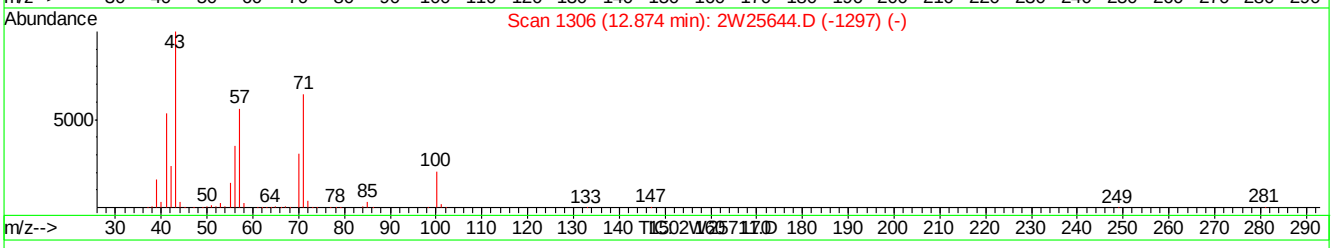
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25711.D Vial: 3
Acq On : 28 Sep 2009 8:56 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:28 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.88min 11.92PPBV m

response 1309636

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25711.D M2W1080.M Tue Sep 29 10:49:12 2009 MS2W

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25736.d
Acq On : 29 Sep 2009 11:05 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:20:42 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	9.923	128	121913	10.00	PPBV		0.00
46) 1,4-DIFLUOROBENZENE	11.858	114	577822	10.00	PPBV		0.00
63) CHLOROBENZENE-D5	16.384	82	319044	10.00	PPBV		0.00
95) CHLOROBENZENE-D5(A)	16.384	82	319358	10.00	PPBV		0.00
System Monitoring Compounds							
77) 4-BROMOFLUOROBENZENE	18.033	95	165127	5.02	PPBV		0.00
Spiked Amount 5.000	Range 65 - 128		Recovery	=	100.40%		
Target Compounds							Qvalue
2) FREON 115	5.002	119	101870	7.71	PPBV		95
3) DICHLORODIFLUOROMETHANE	5.002	85	151291	8.23	PPBV		99
4) FREON 152A	5.117	65	117802	11.00	PPBV		99
5) CHLORODIFLUOROMETHANE	5.166	67	45386	11.14	PPBV		98
6) PROPYLENE	5.203	41	187547	11.71	PPBV		99
7) PROPANE	5.221	43	65152	11.13	PPBV	#	100
8) FREON 114	5.543	85	487070	10.56	PPBV		92
9) CHLOROMETHANE	5.452	52	69377	12.21	PPBV		98
10) VINYL CHLORIDE	5.677	62	218907	11.79	PPBV		100
11) 1,3-BUTADIENE	5.811	54	170063	12.13	PPBV		94
12) n-BUTANE	5.866	43	350508	12.62	PPBV		98
13) BROMOMETHANE	6.097	94	159041	9.82	PPBV		100
14) CHLOROETHANE	6.267	64	111977	11.11	PPBV		98
15) FREON 123	6.736	83	343678	9.44	PPBV	#	99
16) FREON 123A	6.790	117	168826	8.45	PPBV		80
17) TRICHLOROFLUOROMETHANE	7.034	101	342699	9.19	PPBV		99
18) ISOPROPYL ALCOHOL	7.070	45	274052	11.59	PPBV		99
19) ACETONE	6.851	58	73223	8.76	PPBV	#	83
20) PENTANE	7.374	42	179417	10.87	PPBV		99
21) TVHC as EQUIV PENTANE	7.374	TIC	1134557m	11.09	PPBV		
22) ETHYL ETHER	7.381	74	70239	10.11	PPBV		95
23) IODOMETHANE	7.612	142	364278	9.15	PPBV		92
24) 1,1-DICHLOROETHYLENE	7.666	96	137248	9.03	PPBV		89
25) CARBON DISULFIDE	8.123	76	478200	9.87	PPBV		98
26) ETHANOL	6.371	45	66940	11.75	PPBV		95
27) BROMOETHENE	6.620	106	140455	9.16	PPBV	#	98
28) METHYLENE CHLORIDE	7.770	84	129879	9.22	PPBV		92
29) 3-CHLOROPROPENE	7.892	76	71381	10.38	PPBV	#	88
30) FREON 113	8.025	151	218125	8.75	PPBV		90
31) TRANS-1,2-DICHLOROETHY...	8.713	96	170667	9.45	PPBV		94
32) TERTIARY BUTYL ALCOHOL	7.673	59	280238	10.89	PPBV		97
33) METHYL TERTIARY BUTYL ...	8.956	73	385254	10.22	PPBV		97
34) TETRAHYDROFURAN	10.471	42	185578	12.01	PPBV		94
35) HEXANE	9.948	57	259252	11.78	PPBV		97
36) VINYL ACETATE	9.023	86	34078	10.14	PPBV	#	26
37) 1,1-DICHLOROETHANE	8.914	63	316283	10.92	PPBV		99
38) METHYL ETHYL KETONE	9.291	72	74290	10.58	PPBV	#	79
39) cis-1,2-DICHLOROETHYLENE	9.747	96	171939	9.63	PPBV		94
40) ETHYL ACETATE	9.936	61	48441	11.56	PPBV	#	88

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25736.d
Acq On : 29 Sep 2009 11:05 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:20:42 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41)	CHLOROFORM	10.045	83	314549	10.65	PPBV		98
42)	2,4-DIMETHYLPENTANE	10.842	57	301684	11.69	PPBV		98
43)	1,1,1-TRICHLOROETHANE	11.067	97	325435	10.63	PPBV		98
44)	CARBON TETRACHLORIDE	11.688	117	332899	10.42	PPBV		100
45)	1,2-DICHLOROETHANE	10.799	62	220579	11.50	PPBV		98
47)	BENZENE	11.536	78	530096	9.98	PPBV		99
48)	CYCLOHEXANE	11.822	84	229442	9.20	PPBV		91
49)	2,3-DIMETHYLPENTANE	12.028	71	114760	10.86	PPBV		92
50)	TRICHLOROETHYLENE	12.600	95	203275	9.78	PPBV		92
51)	1,2-DICHLOROPROPANE	12.363	63	203646	10.45	PPBV		99
52)	BROMODICHLOROMETHANE	12.558	83	340651	10.92	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.618	57	740630	11.46	PPBV		99
54)	1,4-DIOXANE	12.612	88	93506	9.59	PPBV	#	1
55)	METHYL METHACRYLATE	12.758	69	150116	10.86	PPBV		90
56)	HEPTANE	12.868	43	308110	11.99	PPBV		95
57)	TVHC as EQUIV HEPTANE	12.868	TIC	1316018m	11.52	PPBV		
58)	METHYL ISOBUTYL KETONE	13.495	43	353403	12.44	PPBV		94
59)	cis-1,3-DICHLOROPROPENE	13.470	75	278579	10.90	PPBV		92
60)	TOLUENE	14.498	92	350577	10.10	PPBV		98
61)	trans-1,3-DICHLOROPROPENE	14.006	75	255554	11.10	PPBV		94
62)	1,1,2-TRICHLOROETHANE	14.200	83	171145	10.96	PPBV		96
64)	2-HEXANONE	14.748	58	171070	10.55	PPBV		91
65)	TETRACHLOROETHYLENE	15.703	164	209917	7.44	PPBV		96
66)	DIBROMOCHLOROMETHANE	14.955	129	317559	9.04	PPBV		100
67)	1,2-DIBROMOETHANE	15.222	107	266296	9.05	PPBV		100
68)	OCTANE	15.496	43	395660	11.38	PPBV		91
69)	1,1,1,2-TETRACHLOROETHANE	16.409	131	213642	8.62	PPBV	#	99
70)	CHLOROBENZENE	16.433	112	364551	8.28	PPBV		95
71)	ETHYLBENZENE	16.828	91	655457	8.76	PPBV		98
72)	m,p-XYLENE	17.017	106	487682	16.95	PPBV		97
73)	o-XYLENE	17.540	106	231515	8.62	PPBV		96
74)	STYRENE	17.418	104	341786	9.51	PPBV		98
75)	NONANE	17.723	43	355006	12.02	PPBV		93
76)	BROMOFORM	17.139	173	249241	9.15	PPBV		98
78)	1,1,2,2-TETRACHLOROETHANE	17.534	83	288526	10.45	PPBV		99
79)	ISOPROPYLBENZENE	18.161	105	617476	9.33	PPBV		97
80)	2-CHLOROTOLUENE	18.690	126	141325	9.35	PPBV	#	82
81)	n-PROPYLBENZENE	18.714	120	151343	9.64	PPBV		79
82)	4-ETHYLTOLUENE	18.866	105	498743	10.34	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.945	105	411667	10.02	PPBV		97
84)	TERT-BUTYLBENZENE	19.396	134	101482	8.96	PPBV		84
85)	1,2,4-TRIMETHYLBENZENE	19.402	105	369522	10.82	PPBV		95
86)	m-DICHLOROBENZENE	19.584	146	201765	9.83	PPBV		99
87)	BENZYL CHLORIDE	19.560	91	209600	11.35	PPBV		97
88)	p-DICHLOROBENZENE	19.657	146	176651	9.61	PPBV		99
89)	SEC-BUTYLBENZENE	19.694	134	104830	9.13	PPBV		81
90)	p-ISOPROPYLTOLUENE	19.864	134	101706	9.92	PPBV		90
91)	o-DICHLOROBENZENE	20.040	146	167544	10.10	PPBV		99
92)	n-BUTYLBENZENE	20.332	134	66922	10.53	PPBV		82
93)	HEXACHLOROBUTADIENE	22.413	225	41359	8.97	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25736.d
Acq On : 29 Sep 2009 11:05 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:20:42 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.926	180	29014	9.44	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

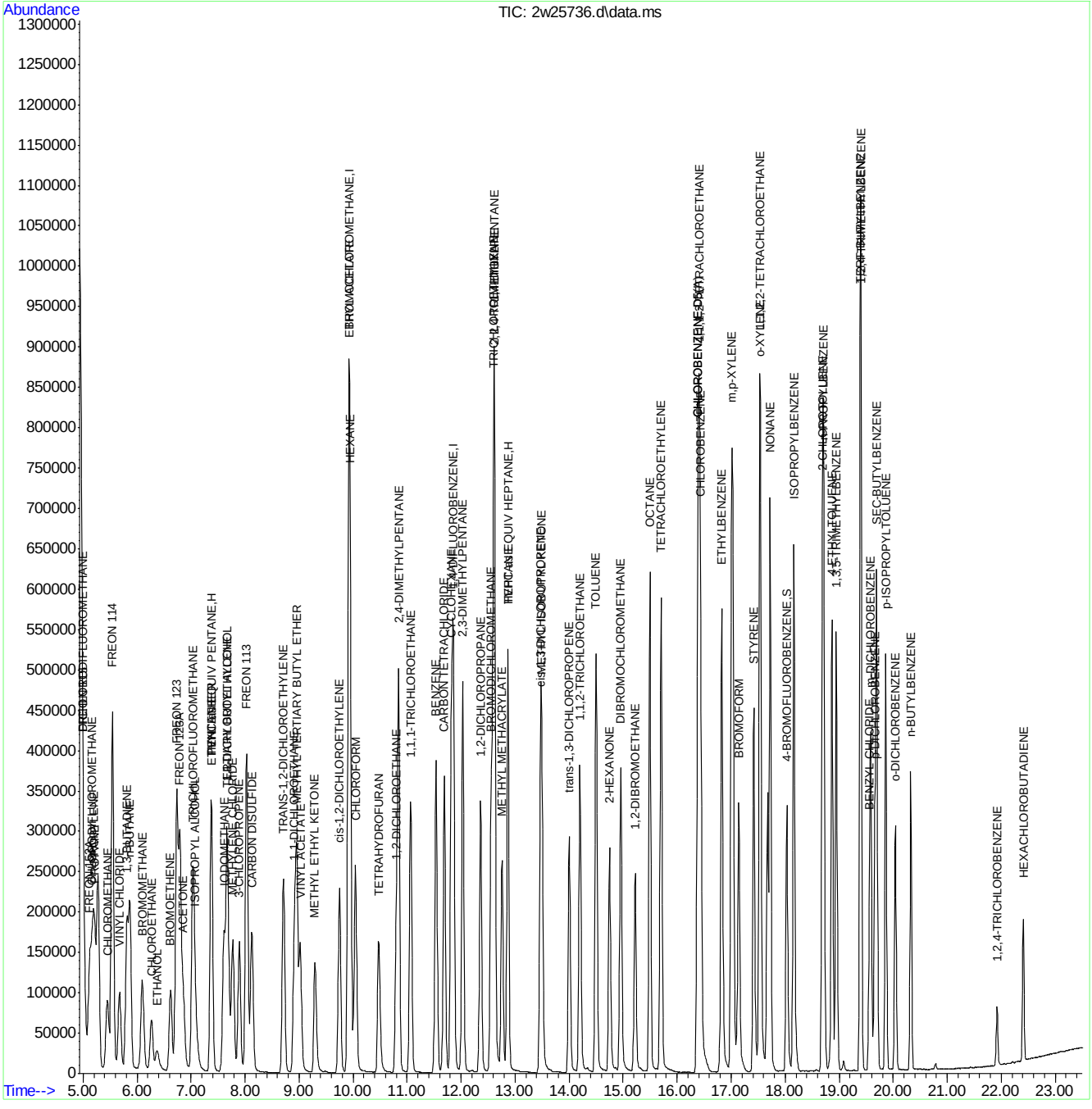
6.3.3

6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25736.d
Acq On : 29 Sep 2009 11:05 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

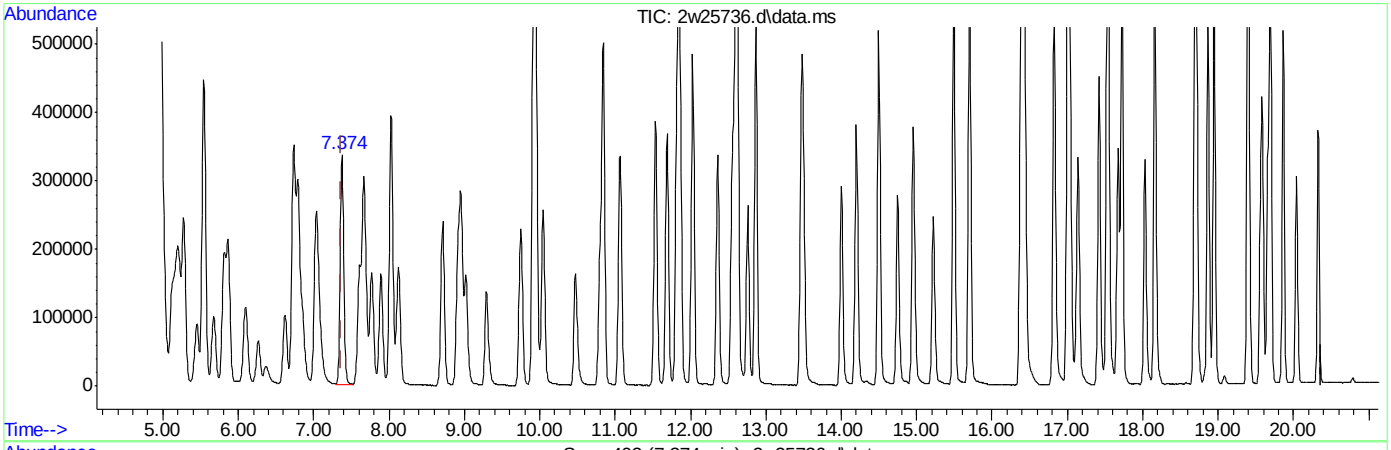
Quant Time: Sep 30 11:20:42 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

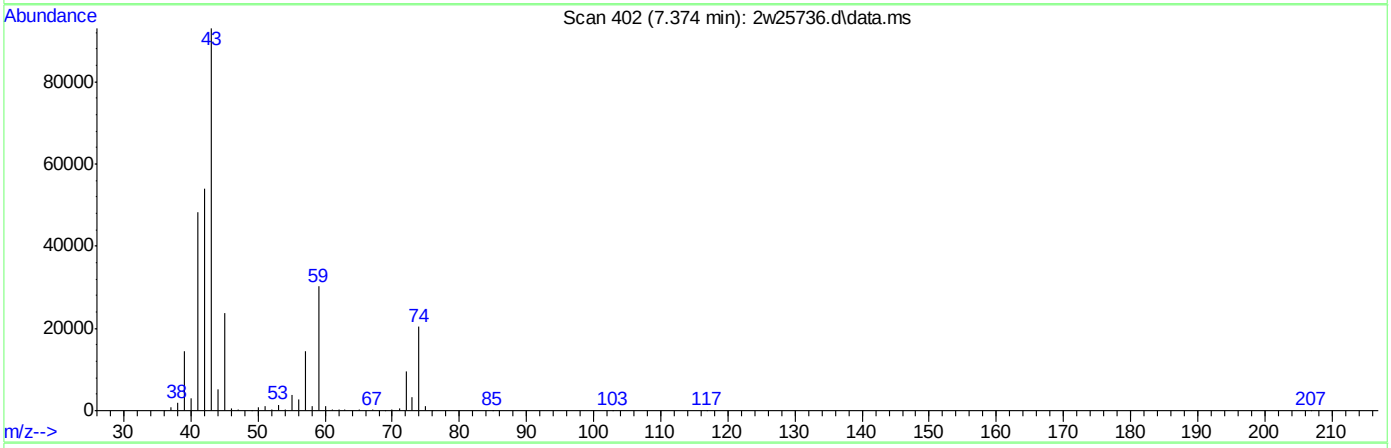


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25736.d
Acq On : 29 Sep 2009 11:05 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:19:42 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration





TIC: 2w25736.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.374min (-0.000) 11.09PPBV m

response 1134557

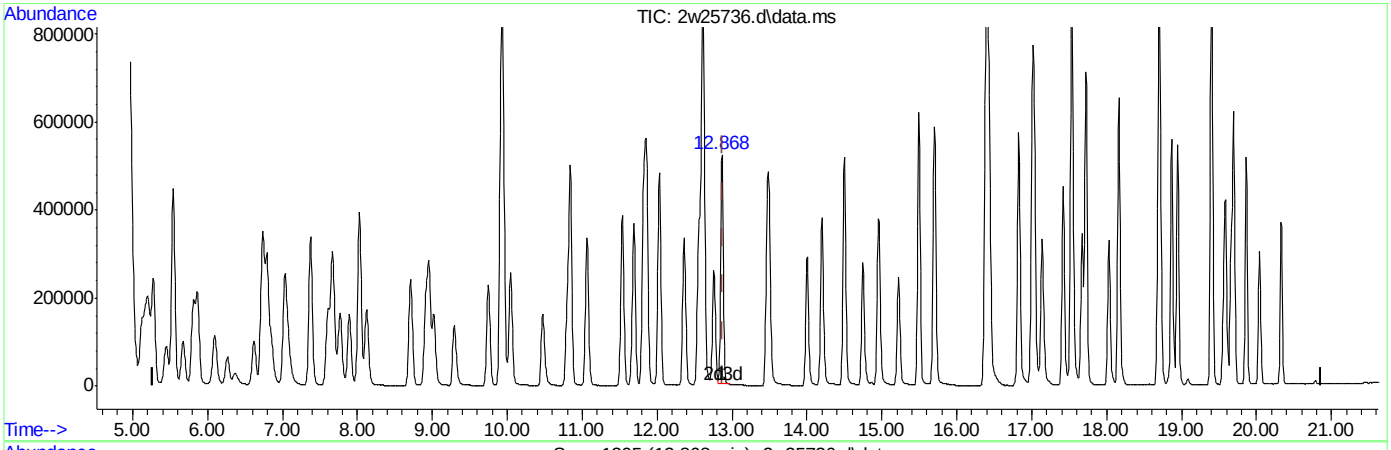
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25736.d
Acq On : 29 Sep 2009 11:05 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:19:42 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



TIC: 2w25736.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.868min (-0.006) 11.52PPBV m

response 1316018

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25737.d
Acq On : 29 Sep 2009 11:49 am
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:22:43 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.924	128	122626	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.858	114	590616	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.384	82	321472	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.384	82	321623	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.027	95	165479	5.00	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 100.00%			
Target Compounds						Qvalue
2) FREON 115	5.002	119	121629	9.15	PPBV	93
3) DICHLORODIFLUOROMETHANE	4.996	85	184661	9.99	PPBV	99
4) FREON 152A	5.117	65	121674	11.30	PPBV	98
5) CHLORODIFLUOROMETHANE	5.166	67	45746	11.16	PPBV	99
6) PROPYLENE	5.203	41	201276	12.50	PPBV	98
7) PROPANE	5.227	43	70332	11.94	PPBV #	100
8) FREON 114	5.537	85	475157	10.24	PPBV	93
9) CHLOROMETHANE	5.446	52	69619	12.18	PPBV	94
10) VINYL CHLORIDE	5.671	62	214450	11.48	PPBV	99
11) 1,3-BUTADIENE	5.805	54	168130	11.92	PPBV	93
12) n-BUTANE	5.866	43	351167	12.57	PPBV	97
13) BROMOMETHANE	6.097	94	157110	9.65	PPBV	99
14) CHLOROETHANE	6.261	64	109422	10.80	PPBV	97
15) FREON 123	6.736	83	342335	9.35	PPBV #	99
16) FREON 123A	6.790	117	169817	8.45	PPBV	81
17) TRICHLOROFLUOROMETHANE	7.028	101	339024	9.04	PPBV	100
18) ISOPROPYL ALCOHOL	7.070	45	276619	11.63	PPBV	99
19) ACETONE	6.845	58	74465	8.86	PPBV #	83
20) PENTANE	7.368	42	184446	11.11	PPBV	98
21) TVHC as EQUIV PENTANE	7.374	TIC	1162564m	11.30	PPBV	
22) ETHYL ETHER	7.374	74	71115	10.17	PPBV	93
23) IODOMETHANE	7.606	142	367258	9.17	PPBV	93
24) 1,1-DICHLOROETHYLENE	7.666	96	138318	9.05	PPBV	88
25) CARBON DISULFIDE	8.123	76	479769	9.85	PPBV	97
26) ETHANOL	6.371	45	67045	11.70	PPBV	98
27) BROMOETHENE	6.620	106	137397	8.91	PPBV #	99
28) METHYLENE CHLORIDE	7.770	84	132795	9.37	PPBV	91
29) 3-CHLOROPROPENE	7.892	76	72347	10.46	PPBV #	85
30) FREON 113	8.025	151	221567	8.84	PPBV	91
31) TRANS-1,2-DICHLOROETHY...	8.707	96	169655	9.34	PPBV	93
32) TERTIARY BUTYL ALCOHOL	7.666	59	274481	10.60	PPBV	96
33) METHYL TERTIARY BUTYL ...	8.956	73	398543	10.51	PPBV	96
34) TETRAHYDROFURAN	10.465	42	190788	12.28	PPBV	94
35) HEXANE	9.948	57	260591	11.77	PPBV	97
36) VINYL ACETATE	9.023	86	34633	10.25	PPBV #	61
37) 1,1-DICHLOROETHANE	8.914	63	324544	11.14	PPBV	99
38) METHYL ETHYL KETONE	9.291	72	76841	10.88	PPBV #	86
39) cis-1,2-DICHLOROETHYLENE	9.747	96	173798	9.68	PPBV	94
40) ETHYL ACETATE	9.930	61	48073	11.41	PPBV #	80

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25737.d
Acq On : 29 Sep 2009 11:49 am
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:22:43 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41)	CHLOROFORM	10.045	83	318828	10.74	PPBV		98
42)	2,4-DIMETHYLPENTANE	10.842	57	307289	11.84	PPBV		99
43)	1,1,1-TRICHLOROETHANE	11.061	97	328325	10.66	PPBV		98
44)	CARBON TETRACHLORIDE	11.688	117	332703	10.35	PPBV		100
45)	1,2-DICHLOROETHANE	10.800	62	221412	11.48	PPBV		99
47)	BENZENE	11.536	78	536978	9.89	PPBV		98
48)	CYCLOHEXANE	11.822	84	231085	9.07	PPBV		90
49)	2,3-DIMETHYLPENTANE	12.028	71	115445	10.69	PPBV		91
50)	TRICHLOROETHYLENE	12.594	95	205599	9.68	PPBV		92
51)	1,2-DICHLOROPROPANE	12.357	63	207335	10.41	PPBV		98
52)	BROMODICHLOROMETHANE	12.558	83	343253	10.77	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.619	57	747666	11.32	PPBV		99
54)	1,4-DIOXANE	12.606	88	97892	9.82	PPBV	#	34
55)	METHYL METHACRYLATE	12.758	69	155770	11.03	PPBV		89
56)	HEPTANE	12.868	43	309437	11.78	PPBV		94
57)	TVHC as EQUIV HEPTANE	12.868	TIC	1325113m	11.35	PPBV		
58)	METHYL ISOBUTYL KETONE	13.495	43	361574	12.45	PPBV		94
59)	cis-1,3-DICHLOROPROPENE	13.464	75	278607	10.67	PPBV		92
60)	TOLUENE	14.498	92	350681	9.89	PPBV		98
61)	trans-1,3-DICHLOROPROPENE	13.999	75	252429	10.73	PPBV		94
62)	1,1,2-TRICHLOROETHANE	14.200	83	171014	10.71	PPBV		97
64)	2-HEXANONE	14.742	58	169845	10.40	PPBV		92
65)	TETRACHLOROETHYLENE	15.703	164	212714	7.48	PPBV		97
66)	DIBROMOCHLOROMETHANE	14.955	129	317873	8.98	PPBV		100
67)	1,2-DIBROMOETHANE	15.222	107	264474	8.92	PPBV		100
68)	OCTANE	15.490	43	399226	11.40	PPBV		91
69)	1,1,1,2-TETRACHLOROETHANE	16.409	131	213993	8.57	PPBV	#	100
70)	CHLOROBENZENE	16.433	112	367209	8.28	PPBV		95
71)	ETHYLBENZENE	16.822	91	653223	8.67	PPBV		98
72)	m,p-XYLENE	17.017	106	488507	16.85	PPBV		96
73)	o-XYLENE	17.540	106	232352	8.58	PPBV		96
74)	STYRENE	17.418	104	339001	9.36	PPBV		97
75)	NONANE	17.723	43	358388	12.04	PPBV		93
76)	BROMOFORM	17.139	173	249608	9.10	PPBV		99
78)	1,1,2,2-TETRACHLOROETHANE	17.528	83	289456	10.41	PPBV		99
79)	ISOPROPYLBENZENE	18.161	105	619490	9.29	PPBV		97
80)	2-CHLOROTOLUENE	18.690	126	139719	9.18	PPBV	#	82
81)	n-PROPYLBENZENE	18.708	120	151917	9.60	PPBV		82
82)	4-ETHYLTOLUENE	18.866	105	499993	10.29	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.945	105	414025	10.00	PPBV		97
84)	TERT-BUTYLBENZENE	19.396	134	101998	8.94	PPBV		84
85)	1,2,4-TRIMETHYLBENZENE	19.402	105	368846	10.72	PPBV		96
86)	m-DICHLOROBENZENE	19.584	146	199578	9.65	PPBV		99
87)	BENZYL CHLORIDE	19.560	91	206645	11.11	PPBV		97
88)	p-DICHLOROBENZENE	19.657	146	172772	9.33	PPBV		98
89)	SEC-BUTYLBENZENE	19.694	134	107214	9.27	PPBV		84
90)	p-ISOPROPYLTOLUENE	19.864	134	100915	9.77	PPBV		90
91)	o-DICHLOROBENZENE	20.040	146	164116	9.82	PPBV		98
92)	n-BUTYLBENZENE	20.326	134	65266	10.19	PPBV		83
93)	HEXACHLOROBUTADIENE	22.407	225	41200	8.87	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25737.d
Acq On : 29 Sep 2009 11:49 am
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:22:43 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.926	180	28306	9.14	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

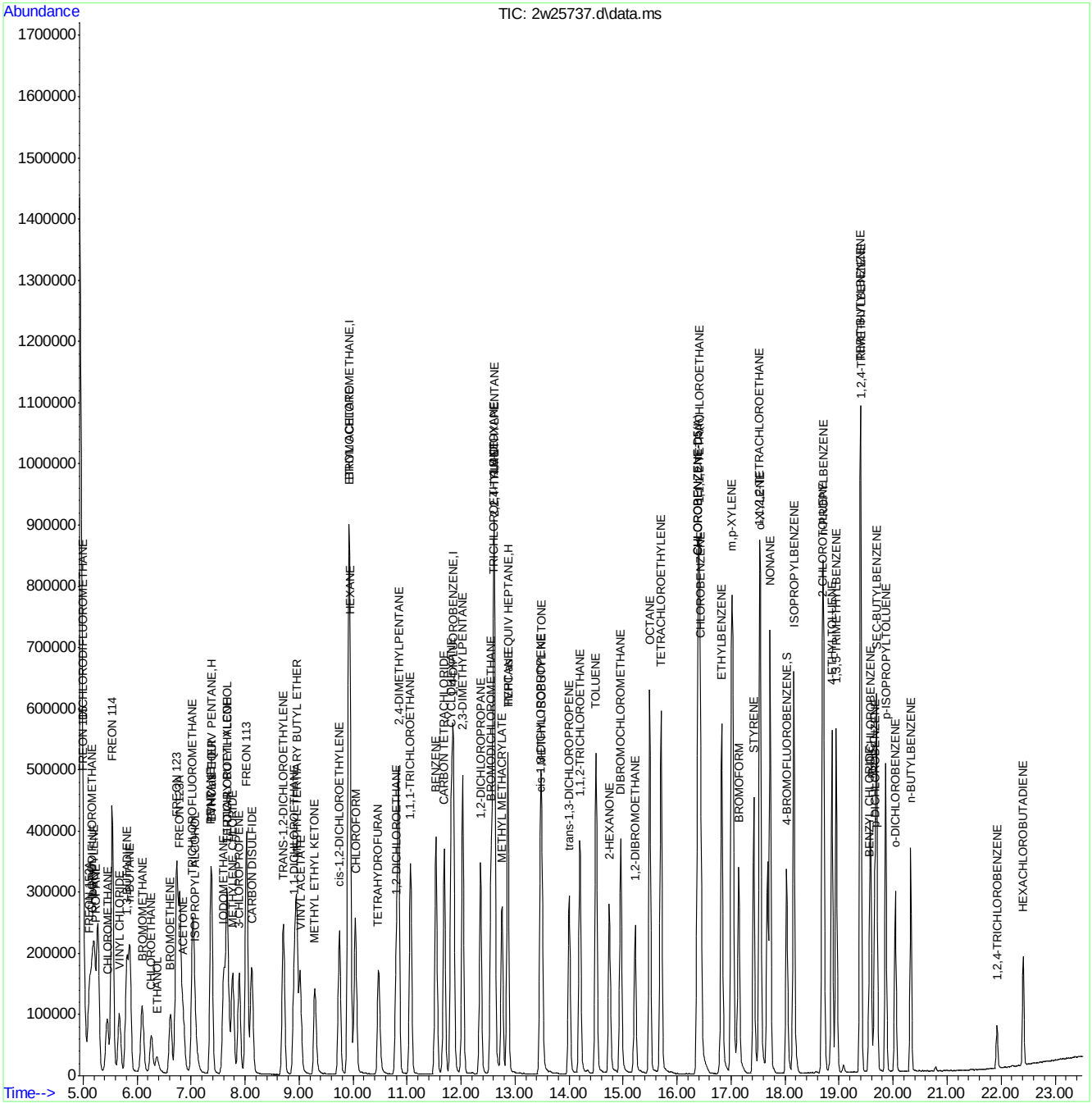
6.3.4

6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25737.d
Acq On : 29 Sep 2009 11:49 am
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:22:43 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

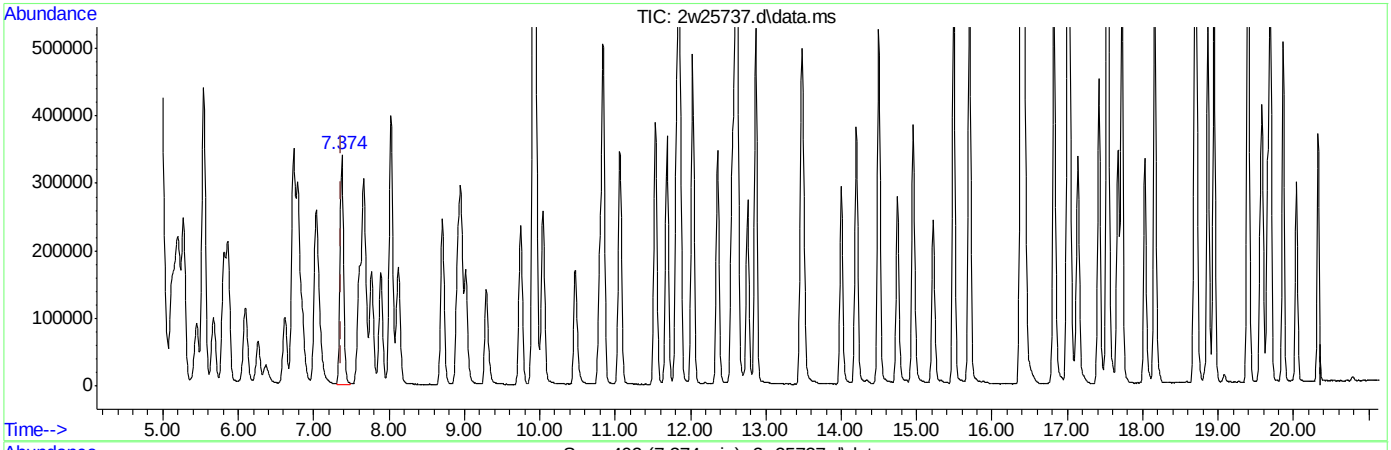


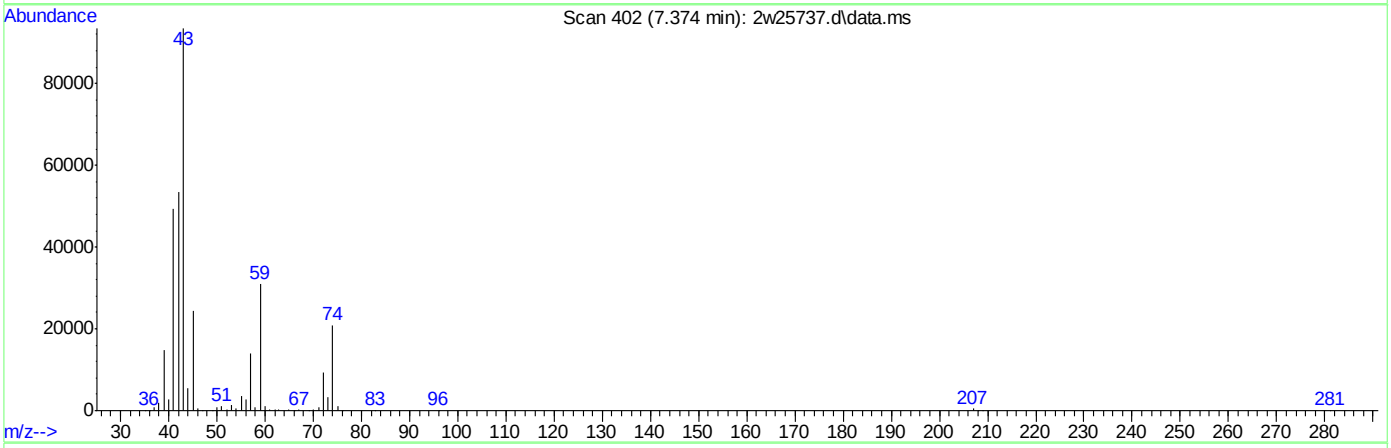
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25737.d
Acq On : 29 Sep 2009 11:49 am
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:21:26 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration





TIC: 2w25737.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.374min (-0.000) 11.30PPBV m

response 1162564

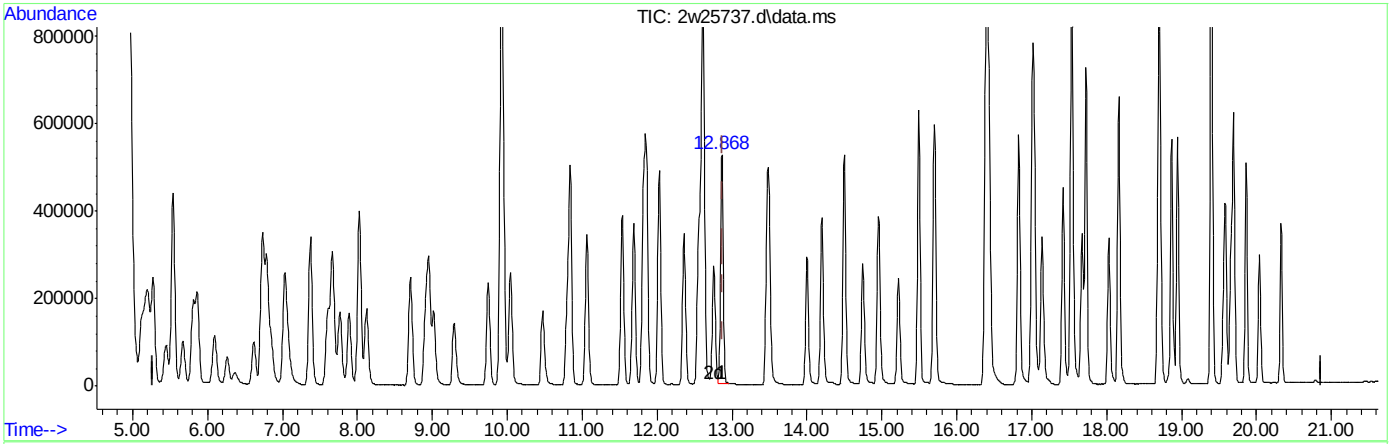
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

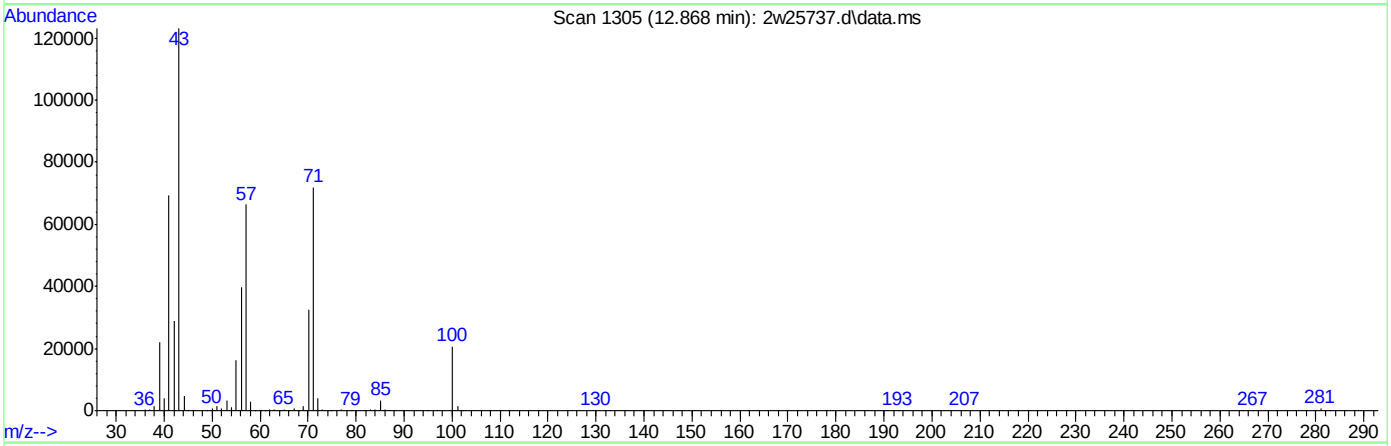
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25737.d
Acq On : 29 Sep 2009 11:49 am
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 30 11:21:26 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration





TIC: 2w25737.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.868min (-0.006) 11.35PPBV m

response 1325113

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:12:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	65111	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	277959	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	145677	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	145622	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	82545	5.77	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 115.40%

Target Compounds						Qvalue
2) FREON 115	5.00	119	54973	10.24	PPBV	97
3) DICHLORODIFLUOROMETHANE	5.00	85	72742	10.24	PPBV	97
4) FREON 152A	5.11	65	52139	10.35	PPBV	91
5) CHLORODIFLUOROMETHANE	5.16	67	31485	11.92	PPBV	99
6) PROPYLENE	5.20	41	58012	8.84	PPBV	95
7) PROPANE	5.23	43	20151	8.46	PPBV #	1
8) FREON 114	5.54	85	278483	10.16	PPBV	97
9) CHLOROMETHANE	5.45	52	22028	8.86	PPBV #	69
10) VINYL CHLORIDE	5.67	62	84853	8.91	PPBV	100
11) 1,3-BUTADIENE	5.81	54	58338	8.90	PPBV	92
12) n-BUTANE	5.86	43	101328	8.25	PPBV	99
13) BROMOMETHANE	6.09	94	96164	9.65	PPBV	100
14) CHLOROETHANE	6.26	64	47562	8.99	PPBV	97
15) FREON 123	6.73	83	225296	9.30	PPBV #	96
16) FREON 123A	6.78	117	154939	10.22	PPBV	87
17) TRICHLOROFLUOROMETHANE	7.02	101	328861	10.82	PPBV	100
18) ISOPROPYL ALCOHOL	7.07	45	112234	8.82	PPBV	97
19) ACETONE	6.85	58	32271	7.54	PPBV #	78
20) PENTANE	7.36	42	62123	8.08	PPBV	86
21) TVHC as EQUIV PENTANE	7.37	TIC	464499m	8.71	PPBV	
22) ETHYL ETHER	7.37	74	36332	9.30	PPBV	99
23) IODOMETHANE	7.60	142	254921	10.22	PPBV	90
24) 1,1-DICHLOROETHYLENE	7.66	96	79288	8.92	PPBV	94
25) CARBON DISULFIDE	8.12	76	225906	8.75	PPBV	96
26) ETHANOL	6.37	45	19822	7.48	PPBV	97
27) BROMOETHENE	6.61	106	104124	10.02	PPBV #	98
28) METHYLENE CHLORIDE	7.76	84	68443	8.64	PPBV	96
29) 3-CHLOROPROPENE	7.89	76	34620	9.41	PPBV #	90
30) FREON 113	8.02	151	157915	10.09	PPBV	96
31) TRANS-1,2-DICHLOROETHYLENE	8.70	96	90774	9.52	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.67	59	153373	10.14	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.95	73	225607	10.07	PPBV	97
34) TETRAHYDROFURAN	10.47	42	54297	8.89	PPBV	94
35) HEXANE	9.94	57	98054	8.98	PPBV	90
36) VINYL ACETATE	9.02	86	17047	9.92	PPBV	100
37) 1,1-DICHLOROETHANE	8.91	63	144169	9.67	PPBV	99
38) METHYL ETHYL KETONE	9.28	72	32175	9.47	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	9.74	96	89978	9.14	PPBV	97
40) ETHYL ACETATE	9.92	61	16917	8.79	PPBV #	80
41) CHLOROFORM	10.03	83	190823	10.53	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:12:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.84	57	115396	9.57	PPBV		98
43) 1,1,1-TRICHLOROETHANE	11.06	97	234158	11.58	PPBV		99
44) CARBON TETRACHLORIDE	11.68	117	252324	11.80	PPBV		99
45) 1,2-DICHLOROETHANE	10.79	62	141227	11.79	PPBV		99
47) BENZENE	11.53	78	241102	9.42	PPBV		99
48) CYCLOHEXANE	11.81	84	109520	9.18	PPBV		96
49) 2,3-DIMETHYLPENTANE	12.02	71	47402	9.63	PPBV		99
50) TRICHLOROETHYLENE	12.59	95	114557	10.33	PPBV		99
51) 1,2-DICHLOROPROPANE	12.35	63	76432	9.21	PPBV		89
52) BROMODICHLOROMETHANE	12.55	83	204660	11.70	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	281029	9.54	PPBV		98
54) 1,4-DIOXANE	12.61	88	46681	10.20	PPBV	#	52
55) METHYL METHACRYLATE	12.75	69	65402	10.33	PPBV		96
56) HEPTANE	12.86	43	98714	9.70	PPBV		98
57) TVHC as EQUIV HEPTANE	12.86	TIC	536303m	10.02	PPBV		
58) METHYL ISOBUTYL KETONE	13.49	43	119748	10.29	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.46	75	140199	11.33	PPBV		93
60) TOLUENE	14.49	92	181434	10.82	PPBV		99
61) trans-1,3-DICHLOROPROPENE	13.99	75	141112	11.98	PPBV		96
62) 1,1,2-TRICHLOROETHANE	14.19	83	79992	10.51	PPBV		96
64) 2-HEXANONE	14.74	58	60532	9.51	PPBV		96
65) TETRACHLOROETHYLENE	15.70	164	142898	10.09	PPBV		99
66) DIBROMOCHLOROMETHANE	14.95	129	220323	11.95	PPBV		100
67) 1,2-DIBROMOETHANE	15.22	107	153148	10.55	PPBV		100
68) OCTANE	15.48	43	124089	9.28	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.40	131	146175	10.88	PPBV	#	99
70) CHLOROBENZENE	16.43	112	219437	9.81	PPBV		99
71) ETHYLBENZENE	16.82	91	368339	10.44	PPBV		99
72) m,p-XYLENE	17.02	106	273228	19.90	PPBV		96
73) o-XYLENE	17.53	106	132430	10.24	PPBV		95
74) STYRENE	17.41	104	195830	11.88	PPBV		98
75) NONANE	17.72	43	116989	10.08	PPBV		98
76) BROMOFORM	17.13	173	185212	11.69	PPBV		100
78) 1,1,2,2-TETRACHLOROETHANE	17.53	83	133629	9.46	PPBV		98
79) ISOPROPYLBENZENE	18.15	105	379893	10.54	PPBV		98
80) 2-CHLOROTOLUENE	18.68	126	86619	11.07	PPBV		98
81) n-PROPYLBENZENE	18.71	120	93194	11.39	PPBV		97
82) 4-ETHYLTOLUENE	18.86	105	311386	11.75	PPBV		99
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	267964	10.97	PPBV		98
84) TERT-BUTYLBENZENE	19.39	134	62377	10.19	PPBV		92
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	238145	11.25	PPBV		98
86) m-DICHLOROBENZENE	19.58	146	141910	10.88	PPBV		99
87) BENZYL CHLORIDE	19.55	91	126706	11.44	PPBV		99
88) p-DICHLOROBENZENE	19.66	146	125881	10.62	PPBV		99
89) SEC-BUTYLBENZENE	19.69	134	69635	11.07	PPBV		99
90) p-ISOPROPYLTOLUENE	19.86	134	67098	10.72	PPBV		95
91) o-DICHLOROBENZENE	20.03	146	119111	10.95	PPBV		100
92) n-BUTYLBENZENE	20.33	134	45164	11.27	PPBV		98
93) HEXACHLOROBUTADIENE	22.41	225	35670	8.76	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:12:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

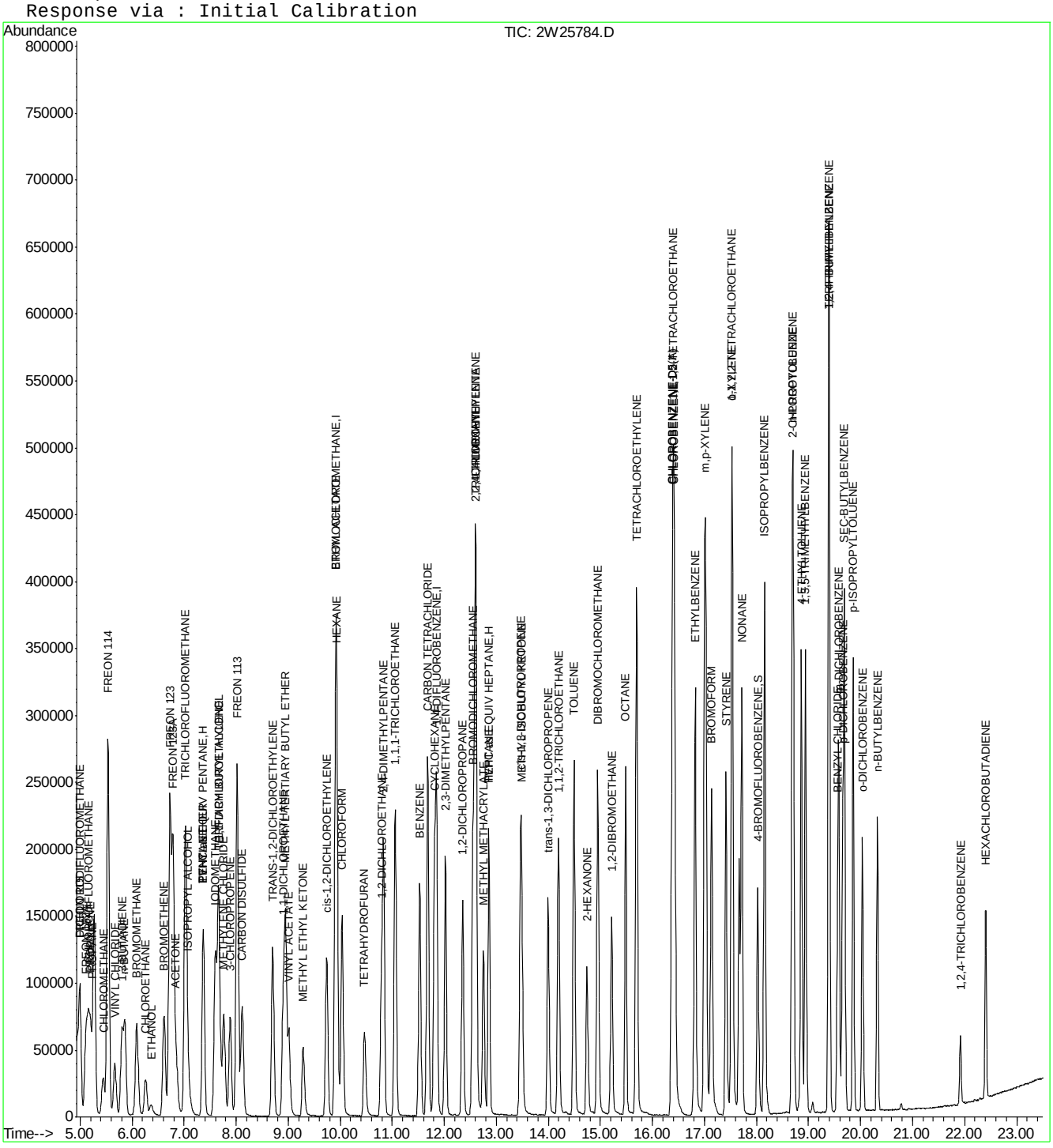
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	21787	11.62	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:12 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration



ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

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Data File : C:\MSDCHEM\1\DATA\2W25784.D                    Vial: 3
Acq On    :  5 Oct 2009   8:40 am                     Operator: YOUMINH
Sample    : ICV1085-10                                Inst    : MS2W
Misc      : MS49009,V2W1086,,,,,1                     Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct  6 11:09 2009              Quant Results File: temp.res

Method       : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title        : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update  : Mon Oct 05 09:33:25 2009
Response via : Multiple Level Calibration
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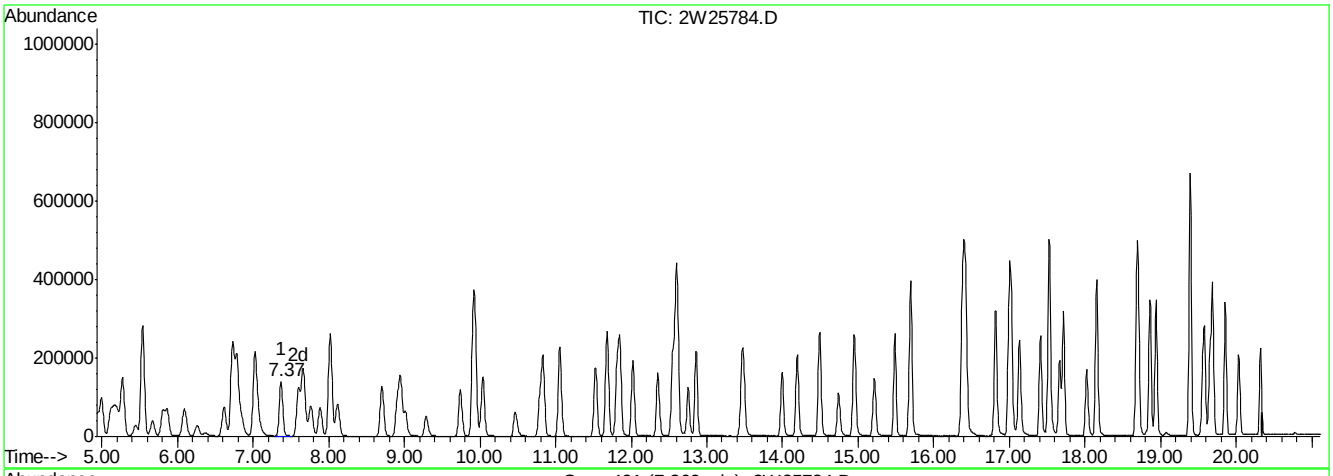
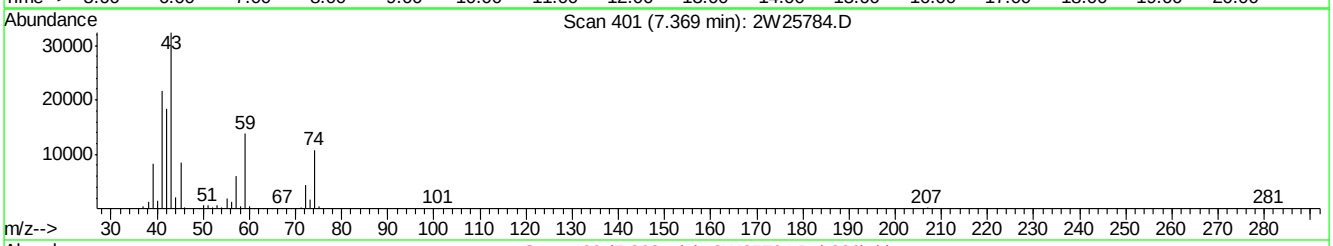
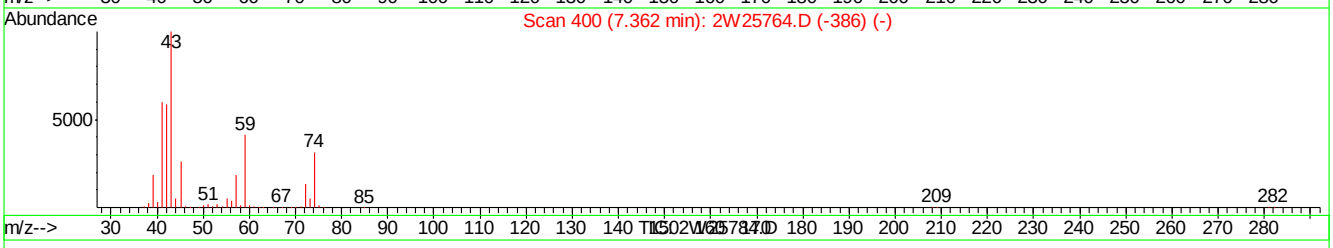






(21) TVHC as EQUIV PENTANE (H)

7.37min 8.71PPBV m

response 464487

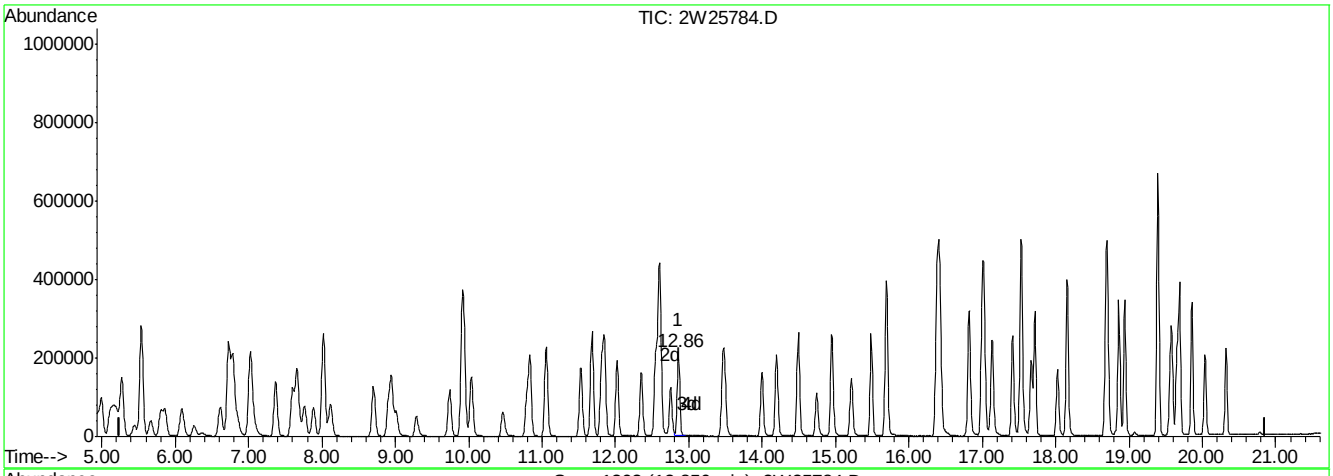
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

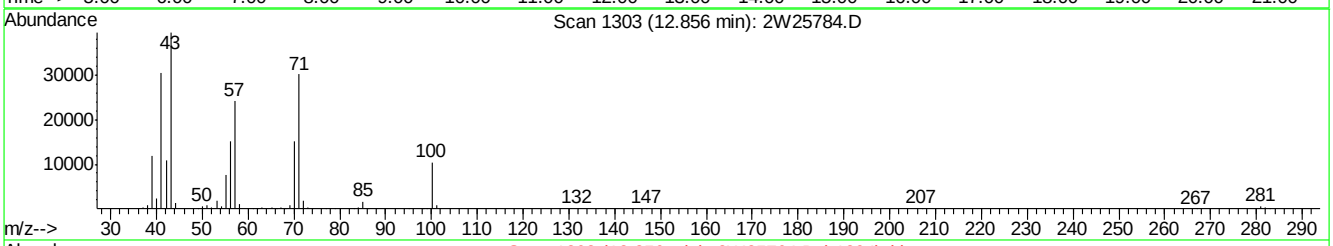
2W25784.D M2W1085.M Tue Oct 06 11:10:02 2009 MS2W

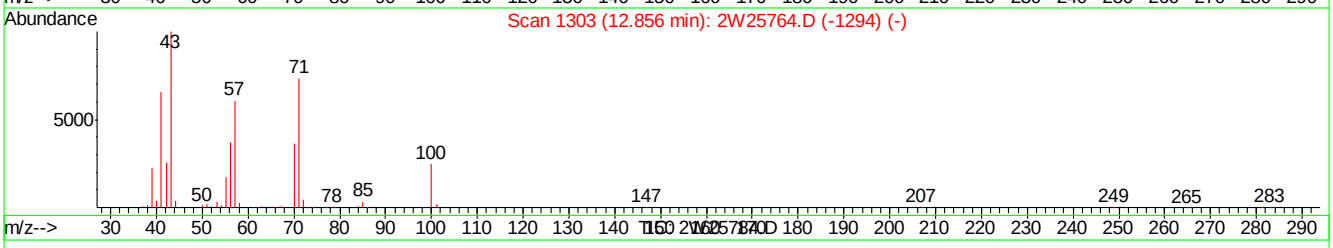
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : ICV1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:09 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 10.01PPBV m

response 535851

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25784.D M2W1085.M Tue Oct 06 11:10:06 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25785.D Vial: 3
Acq On : 5 Oct 2009 9:24 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:15:57 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	71015	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	301667	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	157372	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	157372	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	89064	5.76	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 115.20%

Target Compounds						Qvalue
2) FREON 115	5.00	119	54677	9.33	PPBV	99
3) DICHLORODIFLUOROMETHANE	5.00	85	73675	9.51	PPBV	99
4) FREON 152A	5.11	65	57361	10.44	PPBV	93
5) CHLORODIFLUOROMETHANE	5.16	67	32876	11.41	PPBV	100
6) PROPYLENE	5.20	41	65265	9.12	PPBV	95
7) PROPANE	5.23	43	23472	9.03	PPBV #	1
8) FREON 114	5.54	85	276632	9.25	PPBV	96
9) CHLOROMETHANE	5.45	52	21573	7.95	PPBV #	72
10) VINYL CHLORIDE	5.67	62	86811	8.36	PPBV	98
11) 1,3-BUTADIENE	5.80	54	60997	8.54	PPBV	91
12) n-BUTANE	5.87	43	109252	8.15	PPBV	99
13) BROMOMETHANE	6.09	94	103968	9.57	PPBV	100
14) CHLOROETHANE	6.26	64	52902	9.17	PPBV	98
15) FREON 123	6.72	83	243110	9.20	PPBV #	97
16) FREON 123A	6.78	117	164889	9.97	PPBV	88
17) TRICHLOROFLUOROMETHANE	7.02	101	338795	10.22	PPBV	100
18) ISOPROPYL ALCOHOL	7.07	45	119244	8.59	PPBV	97
19) ACETONE	6.85	58	35497	7.60	PPBV #	82
20) PENTANE	7.37	42	67079	8.00	PPBV	88
21) TVHC as EQUIV PENTANE	7.37	TIC	499709m	8.59	PPBV	
22) ETHYL ETHER	7.37	74	39295	9.22	PPBV	98
23) IODOMETHANE	7.60	142	272984	10.03	PPBV	93
24) 1,1-DICHLOROETHYLENE	7.65	96	86324	8.91	PPBV	97
25) CARBON DISULFIDE	8.12	76	245493	8.72	PPBV	96
26) ETHANOL	6.36	45	21788	7.54	PPBV	97
27) BROMOETHENE	6.61	106	112519	9.93	PPBV	97
28) METHYLENE CHLORIDE	7.76	84	73807	8.54	PPBV	96
29) 3-CHLOROPROPENE	7.89	76	37972	9.46	PPBV	90
30) FREON 113	8.02	151	167648	9.82	PPBV	96
31) TRANS-1,2-DICHLOROETHYLENE	8.70	96	98854	9.51	PPBV	99
32) TERTIARY BUTYL ALCOHOL	7.67	59	156604	9.50	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.95	73	239454	9.80	PPBV	97
34) TETRAHYDROFURAN	10.46	42	58831	8.83	PPBV	95
35) HEXANE	9.94	57	106239	8.92	PPBV	91
36) VINYL ACETATE	9.02	86	18936	10.10	PPBV #	91
37) 1,1-DICHLOROETHANE	8.90	63	155579	9.56	PPBV	99
38) METHYL ETHYL KETONE	9.29	72	35029	9.46	PPBV #	90
39) cis-1,2-DICHLOROETHYLENE	9.74	96	98049	9.13	PPBV	98
40) ETHYL ACETATE	9.92	61	18022	8.59	PPBV #	79
41) CHLOROFORM	10.03	83	203425	10.29	PPBV	99

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25785.D Vial: 3
Acq On : 5 Oct 2009 9:24 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:15:57 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.83	57	127280	9.68	PPBV		98
43)	1,1,1-TRICHLOROETHANE	11.06	97	243431	11.04	PPBV		99
44)	CARBON TETRACHLORIDE	11.68	117	264117	11.33	PPBV		100
45)	1,2-DICHLOROETHANE	10.79	62	146983	11.25	PPBV		99
47)	BENZENE	11.53	78	260818	9.39	PPBV		99
48)	CYCLOHEXANE	11.81	84	118418	9.15	PPBV		97
49)	2,3-DIMETHYLPENTANE	12.02	71	51631	9.66	PPBV		99
50)	TRICHLOROETHYLENE	12.59	95	122013	10.14	PPBV		99
51)	1,2-DICHLOROPROPANE	12.35	63	83566	9.27	PPBV		92
52)	BROMODICHLOROMETHANE	12.55	83	215136	11.33	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.61	57	306373	9.58	PPBV		98
54)	1,4-DIOXANE	12.60	88	49596	9.98	PPBV	#	66
55)	METHYL METHACRYLATE	12.75	69	69794	10.16	PPBV		98
56)	HEPTANE	12.86	43	107737	9.75	PPBV		98
57)	TVHC as EQUIV HEPTANE	12.86	TIC	580324m	9.99	PPBV		
58)	METHYL ISOBUTYL KETONE	13.49	43	126073	9.98	PPBV		97
59)	cis-1,3-DICHLOROPROPENE	13.46	75	148830	11.08	PPBV		94
60)	TOLUENE	14.49	92	194532	10.69	PPBV		98
61)	trans-1,3-DICHLOROPROPENE	13.99	75	151140	11.82	PPBV		97
62)	1,1,2-TRICHLOROETHANE	14.19	83	86987	10.53	PPBV		99
64)	2-HEXANONE	14.74	58	64801	9.43	PPBV		95
65)	TETRACHLOROETHYLENE	15.70	164	154093	10.07	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.95	129	231513	11.63	PPBV		100
67)	1,2-DIBROMOETHANE	15.22	107	164717	10.50	PPBV		100
68)	OCTANE	15.48	43	134465	9.31	PPBV		95
69)	1,1,1,2-TETRACHLOROETHANE	16.40	131	154216	10.63	PPBV	#	100
70)	CHLOROBENZENE	16.43	112	236966	9.81	PPBV		99
71)	ETHYLBENZENE	16.82	91	391803	10.28	PPBV		100
72)	m,p-XYLENE	17.01	106	296760	20.01	PPBV		97
73)	o-XYLENE	17.53	106	143108	10.24	PPBV		97
74)	STYRENE	17.41	104	208901	11.73	PPBV		98
75)	NONANE	17.72	43	127906	10.21	PPBV		98
76)	BROMOFORM	17.13	173	195600	11.43	PPBV		100
78)	1,1,2,2-TETRACHLOROETHANE	17.53	83	146103	9.57	PPBV		99
79)	ISOPROPYLBENZENE	18.15	105	406608	10.45	PPBV		100
80)	2-CHLOROTOLUENE	18.68	126	92588	10.95	PPBV		97
81)	n-PROPYLBENZENE	18.71	120	99838	11.30	PPBV		98
82)	4-ETHYLTOLUENE	18.86	105	334766	11.69	PPBV		100
83)	1,3,5-TRIMETHYLBENZENE	18.94	105	285745	10.83	PPBV		99
84)	TERT-BUTYLBENZENE	19.39	134	66956	10.13	PPBV		93
85)	1,2,4-TRIMETHYLBENZENE	19.40	105	251547	11.00	PPBV		99
86)	m-DICHLOROBENZENE	19.58	146	151046	10.72	PPBV		99
87)	BENZYL CHLORIDE	19.56	91	132527	11.08	PPBV		99
88)	p-DICHLOROBENZENE	19.65	146	133424	10.42	PPBV		100
89)	SEC-BUTYLBENZENE	19.69	134	75743	11.15	PPBV		99
90)	p-ISOPROPYLTOLUENE	19.86	134	71391	10.56	PPBV		98
91)	o-DICHLOROBENZENE	20.03	146	126168	10.74	PPBV		99
92)	n-BUTYLBENZENE	20.32	134	48368	11.17	PPBV		97
93)	HEXACHLOROBUTADIENE	22.40	225	37162	8.45	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25785.D Vial: 3
Acq On : 5 Oct 2009 9:24 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:15:57 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

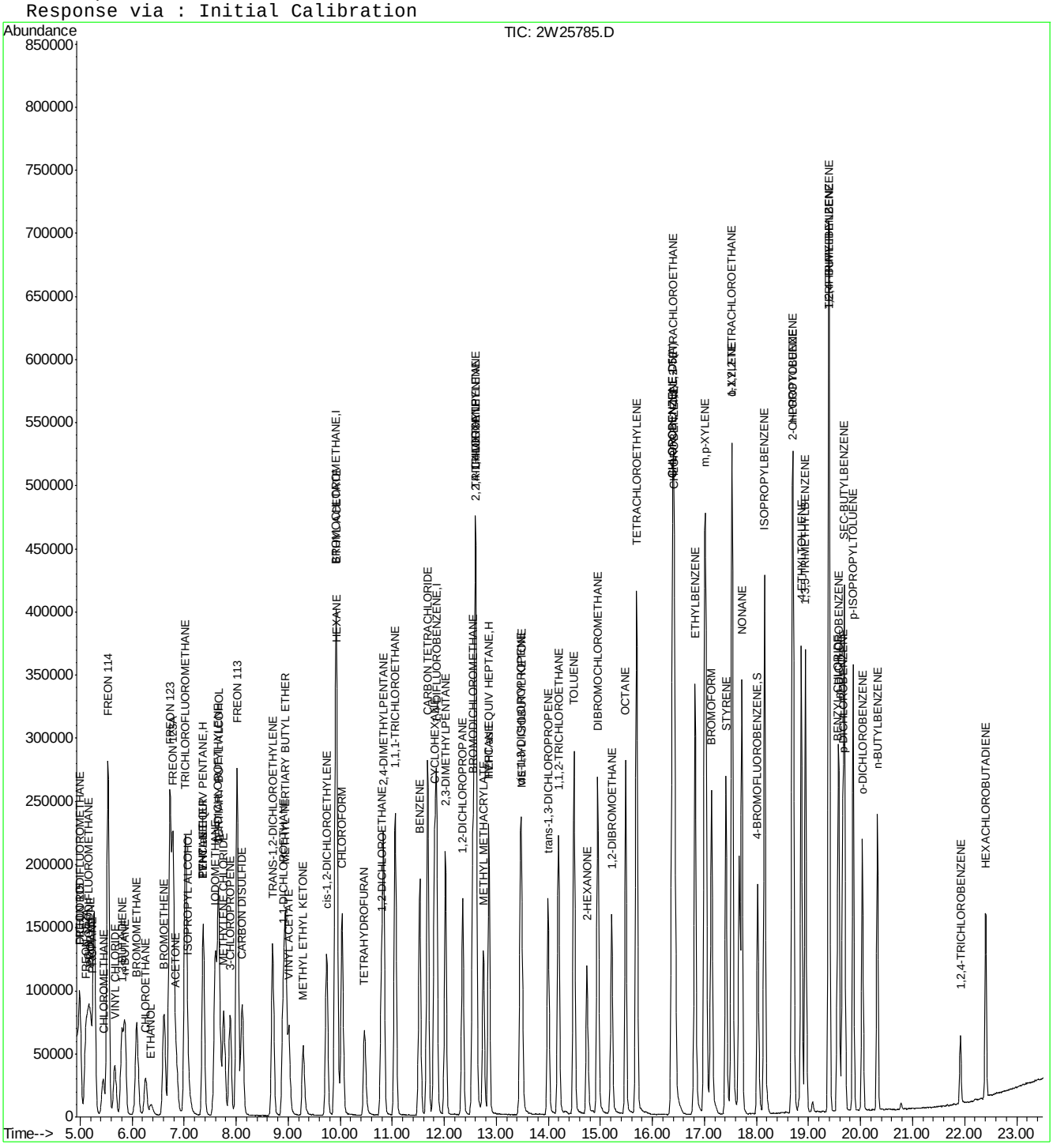
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	22669	11.19	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25785.D Vial: 3
Acq On : 5 Oct 2009 9:24 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:27 2009 Quant Results File: M2W1085.RES

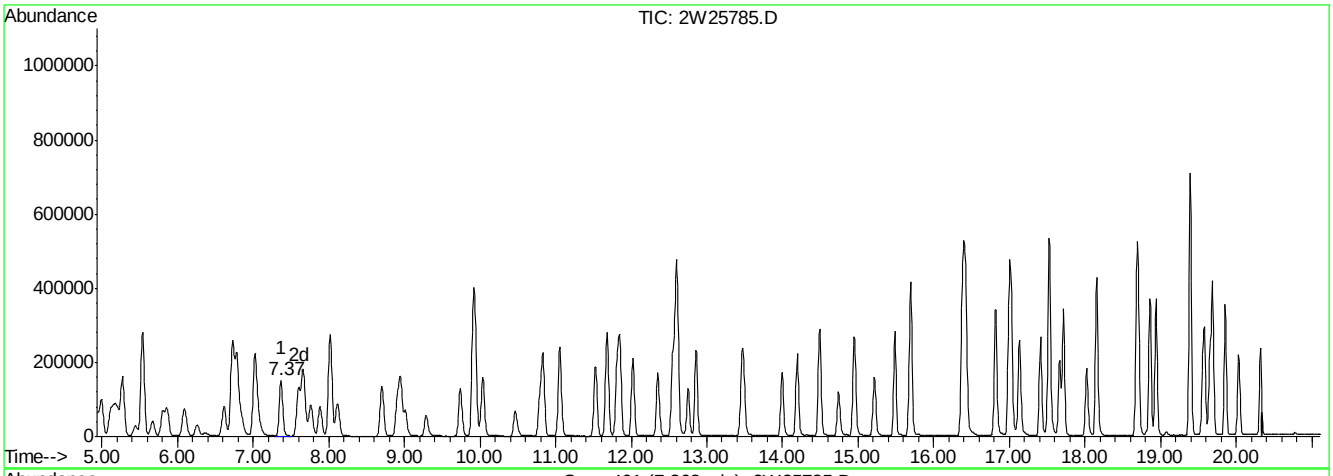
Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

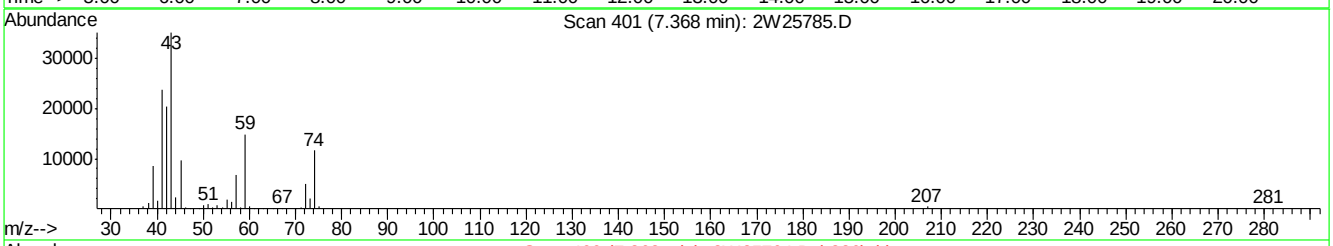


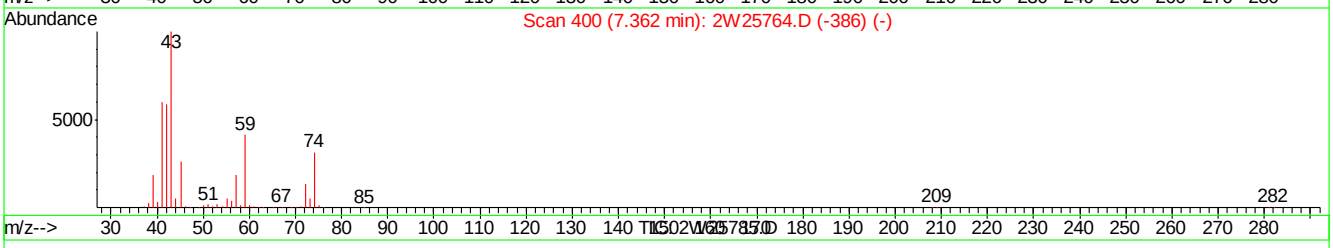
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25785.D Vial: 3
Acq On : 5 Oct 2009 9:24 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:27 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.37min 8.59PPBV m

response 499709

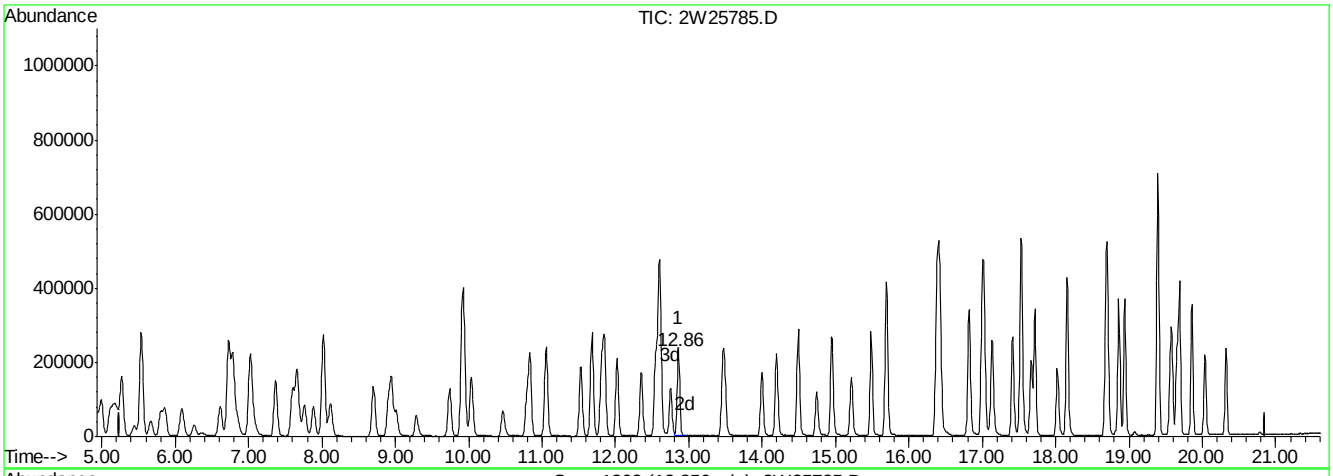
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

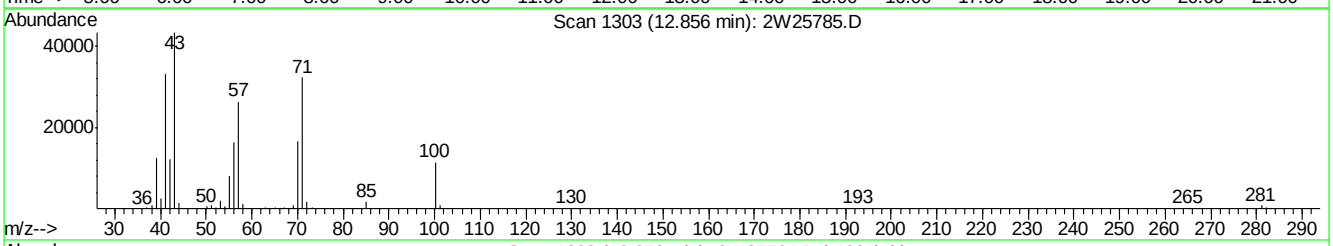
2W25785.D M2W1085.M Tue Oct 06 11:56:51 2009 MS2W

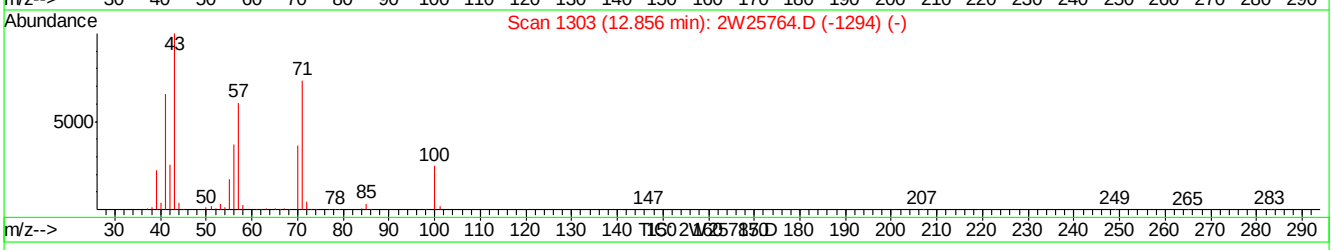
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25785.D Vial: 3
Acq On : 5 Oct 2009 9:24 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:27 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 9.99PPBV m

response 580324

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25785.D M2W1085.M Tue Oct 06 11:56:55 2009 MS2W

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	9.948	128	153257	10.00	PPBV		0.00
46) 1,4-DIFLUOROBENZENE	11.883	114	747829	10.00	PPBV		0.00
63) CHLOROBENZENE-D5	16.403	82	395550	10.00	PPBV		0.00
95) CHLOROBENZENE-D5(A)	16.403	82	395398	10.00	PPBV		0.00
System Monitoring Compounds							
77) 4-BROMOFLUOROBENZENE	18.045	95	228349	5.67	PPBV		0.00
Spiked Amount 5.000	Range 65 - 128		Recovery	=	113.40%		
Target Compounds							Qvalue
2) FREON 115	5.014	119	158803	10.07	PPBV		96
3) DICHLORODIFLUOROMETHANE	5.008	85	237305	9.96	PPBV		99
4) FREON 152A	5.130	65	146789	8.98	PPBV		96
5) CHLORODIFLUOROMETHANE	5.172	67	55127	8.64	PPBV		99
6) PROPYLENE	5.215	41	222325	8.28	PPBV		99
7) PROPANE	5.239	43	79926	7.65	PPBV	#	100
8) FREON 114	5.556	85	576126	9.18	PPBV		96
9) CHLOROMETHANE	5.458	52	77476	8.61	PPBV		96
10) VINYL CHLORIDE	5.689	62	261421	9.30	PPBV		99
11) 1,3-BUTADIENE	5.823	54	197385	9.18	PPBV		95
12) n-BUTANE	5.878	43	393979	8.51	PPBV		98
13) BROMOMETHANE	6.109	94	218902	9.73	PPBV		99
14) CHLOROETHANE	6.280	64	145038	9.76	PPBV		98
15) FREON 123	6.748	83	462128	9.52	PPBV	#	99
16) FREON 123A	6.809	117	250411	9.45	PPBV		93
17) TRICHLOROFLUOROMETHANE	7.052	101	487256	9.15	PPBV		100
18) ISOPROPYL ALCOHOL	7.083	45	345492	8.81	PPBV		99
19) ACETONE	6.857	58	96712	8.67	PPBV		92
20) PENTANE	7.393	42	266182	8.54	PPBV		99
21) TVHC as EQUIV PENTANE	7.393	TIC	1653447m	9.24	PPBV		
22) ETHYL ETHER	7.387	74	104445	9.78	PPBV		95
23) IODOMETHANE	7.624	142	525535	10.03	PPBV		99
24) 1,1-DICHLOROETHYLENE	7.685	96	194256	9.24	PPBV		93
25) CARBON DISULFIDE	8.147	76	656021	9.14	PPBV		98
26) ETHANOL	6.383	45	78588	8.58	PPBV		99
27) BROMOETHENE	6.638	106	207170	10.02	PPBV		99
28) METHYLENE CHLORIDE	7.788	84	185866	8.80	PPBV		94
29) 3-CHLOROPROPENE	7.916	76	102896	9.67	PPBV	#	86
30) FREON 113	8.050	151	312126	9.41	PPBV		98
31) TRANS-1,2-DICHLOROETHY...	8.731	96	233826	9.40	PPBV		95
32) TERTIARY BUTYL ALCOHOL	7.685	59	386251	8.70	PPBV		96
33) METHYL TERTIARY BUTYL ...	8.969	73	544267	9.28	PPBV		98
34) TETRAHYDROFURAN	10.477	42	275456	9.15	PPBV		94
35) HEXANE	9.972	57	339248	9.10	PPBV		97
36) VINYL ACETATE	9.041	86	48138	9.82	PPBV	#	83
37) 1,1-DICHLOROETHANE	8.932	63	430386	9.21	PPBV		99
38) METHYL ETHYL KETONE	9.303	72	108448	9.64	PPBV	#	86
39) cis-1,2-DICHLOROETHYLENE	9.772	96	230794	9.48	PPBV		96
40) ETHYL ACETATE	9.942	61	64397	9.08	PPBV	#	86

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41) CHLOROFORM	10.070	83	422269	9.49	PPBV		99
42) 2,4-DIMETHYLPENTANE	10.867	57	408054	9.33	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.092	97	431276	9.47	PPBV		99
44) CARBON TETRACHLORIDE	11.712	117	449638	9.51	PPBV		100
45) 1,2-DICHLOROETHANE	10.818	62	298743	9.35	PPBV		99
47) BENZENE	11.560	78	702589	9.10	PPBV		99
48) CYCLOHEXANE	11.846	84	306411	8.85	PPBV		95
49) 2,3-DIMETHYLPENTANE	12.053	71	152855	9.51	PPBV		96
50) TRICHLOROETHYLENE	12.619	95	257259	9.16	PPBV		99
51) 1,2-DICHLOROPROPANE	12.381	63	271245	9.44	PPBV		99
52) BROMODICHLOROMETHANE	12.576	83	442145	9.64	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.643	57	921815	8.70	PPBV		100
54) 1,4-DIOXANE	12.613	88	129417	9.20	PPBV	#	70
55) METHYL METHACRYLATE	12.771	69	216521	9.67	PPBV		93
56) HEPTANE	12.892	43	406026	8.69	PPBV		96
57) TVHC as EQUIV HEPTANE	12.892	TIC	1730384m	9.20	PPBV		
58) METHYL ISOBUTYL KETONE	13.507	43	467686	8.67	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.489	75	370373	9.90	PPBV		96
60) TOLUENE	14.523	92	462903	9.88	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.024	75	346447	9.82	PPBV		97
62) 1,1,2-TRICHLOROETHANE	14.225	83	220669	9.67	PPBV		98
64) 2-HEXANONE	14.760	58	225850	8.07	PPBV		96
65) TETRACHLOROETHYLENE	15.727	164	285554	9.18	PPBV		100
66) DIBROMOCHLOROMETHANE	14.979	129	430466	9.94	PPBV		100
67) 1,2-DIBROMOETHANE	15.241	107	357466	9.44	PPBV		100
68) OCTANE	15.514	43	508271	9.14	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.433	131	280518	9.65	PPBV	#	99
70) CHLOROBENZENE	16.457	112	484363	8.98	PPBV		99
71) ETHYLBENZENE	16.847	91	857019	9.45	PPBV		99
72) m,p-XYLENE	17.041	106	625614	19.09	PPBV		97
73) o-XYLENE	17.558	106	297461	9.72	PPBV		98
74) STYRENE	17.437	104	464682	10.63	PPBV		99
75) NONANE	17.741	43	441493	9.70	PPBV		97
76) BROMOFORM	17.163	173	354625	10.55	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.546	83	360127	9.76	PPBV		100
79) ISOPROPYLBENZENE	18.179	105	800275	9.98	PPBV		99
80) 2-CHLOROTOLUENE	18.708	126	188973	10.42	PPBV	#	92
81) n-PROPYLBENZENE	18.733	120	202022	10.50	PPBV		95
82) 4-ETHYLTOLUENE	18.885	105	662113	10.65	PPBV		99
83) 1,3,5-TRIMETHYLBENZENE	18.964	105	546330	10.49	PPBV		100
84) TERT-BUTYLBENZENE	19.414	134	136346	10.45	PPBV		98
85) 1,2,4-TRIMETHYLBENZENE	19.420	105	468663	10.73	PPBV		99
86) m-DICHLOROBENZENE	19.603	146	267164	10.27	PPBV		100
87) BENZYL CHLORIDE	19.578	91	265550	9.74	PPBV		99
88) p-DICHLOROBENZENE	19.676	146	239302	9.97	PPBV		100
89) SEC-BUTYLBENZENE	19.712	134	144641	10.48	PPBV		98
90) p-ISOPROPYLTOLUENE	19.876	134	139317	10.86	PPBV		99
91) o-DICHLOROBENZENE	20.059	146	223088	10.40	PPBV		100
92) n-BUTYLBENZENE	20.345	134	88834	10.32	PPBV		98
93) HEXACHLOROBUTADIENE	22.425	225	57866	7.65	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.939	180	37566	7.71	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

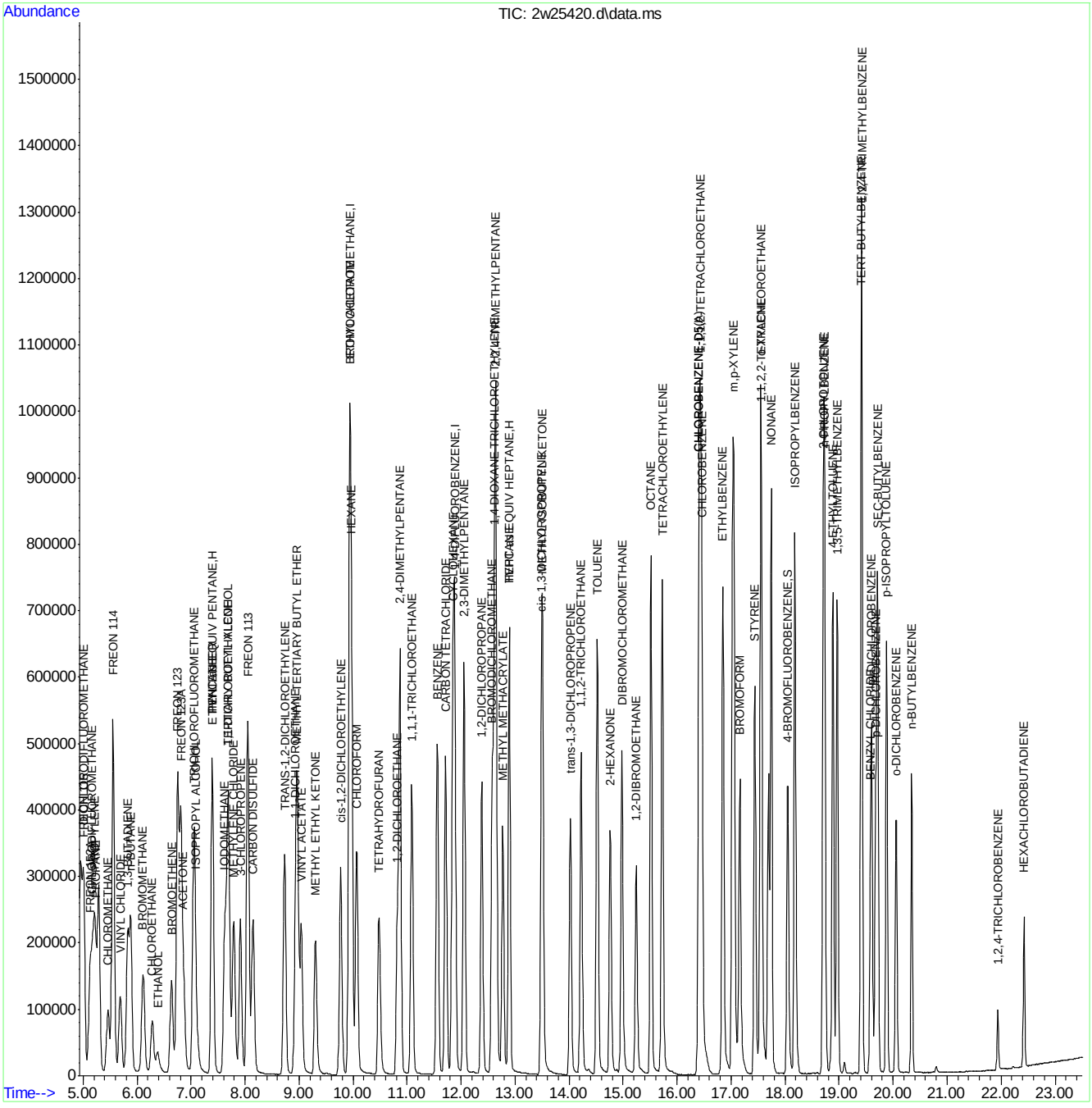
6.3.7

6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

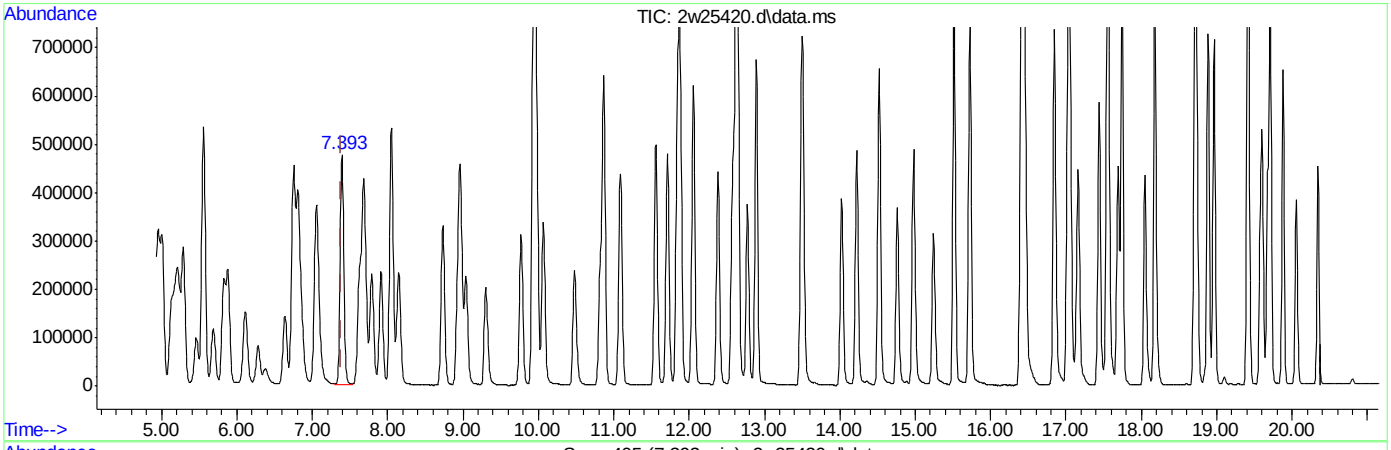
Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

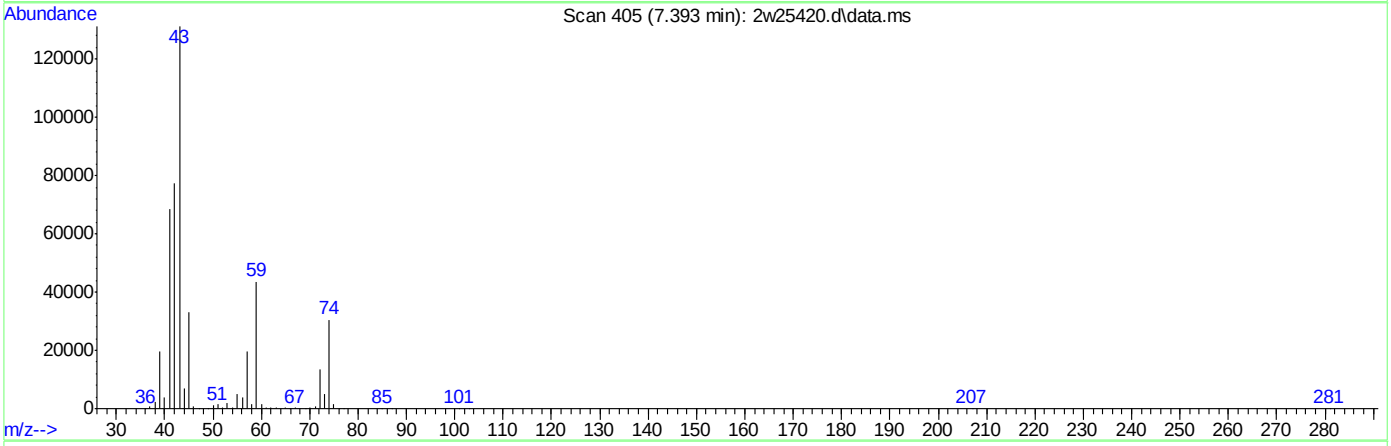


Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:15:24 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25420.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.393min (+0.000) 9.24PPBV m

response 1653447

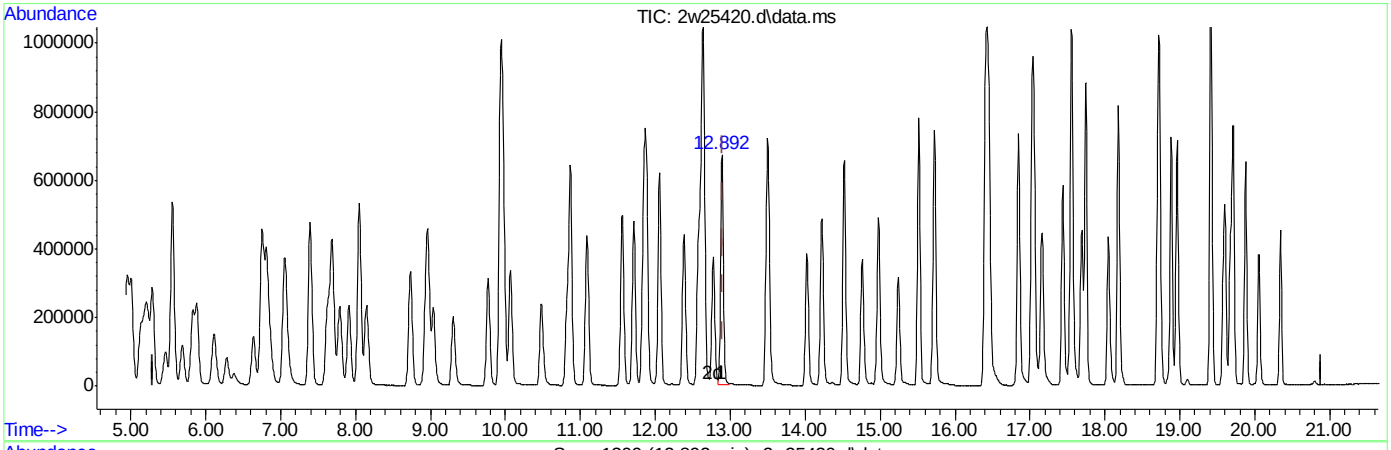
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

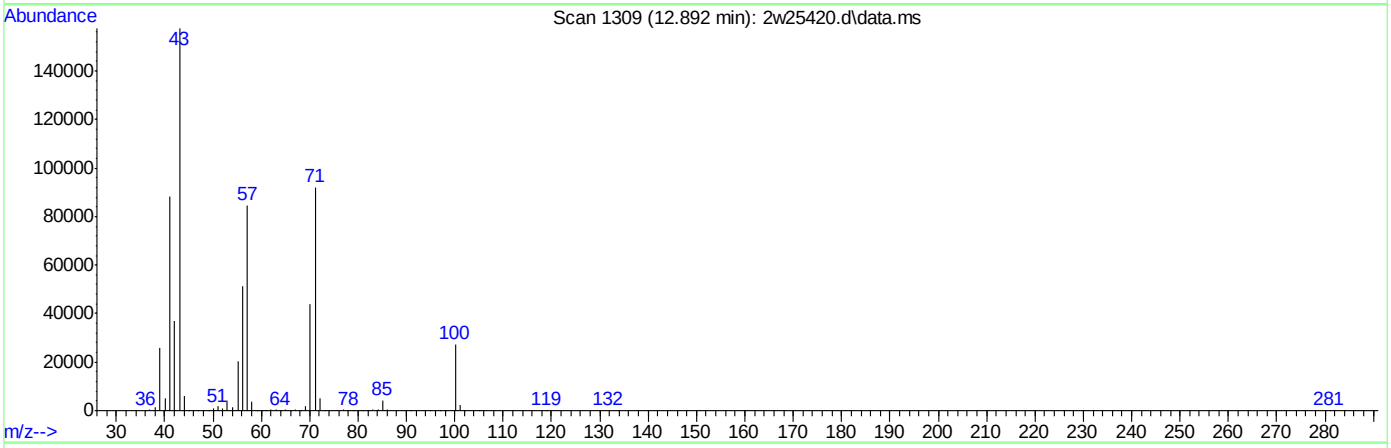
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:15:24 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25420.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.892min (-0.006) 9.20PPBV m

response 1730384

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	9.954	128	153051	10.00	PPBV		0.00
46) 1,4-DIFLUOROBENZENE	11.889	114	740990	10.00	PPBV		0.00
63) CHLOROBENZENE-D5	16.409	82	381950	10.00	PPBV		0.00
95) CHLOROBENZENE-D5(A)	16.409	82	381950	10.00	PPBV		0.00
System Monitoring Compounds							
77) 4-BROMOFLUOROBENZENE	18.051	95	222345	5.71	PPBV		0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 114.20%				
Target Compounds							Qvalue
2) FREON 115	5.020	119	167617	10.64	PPBV		96
3) DICHLORODIFLUOROMETHANE	5.020	85	251313	10.57	PPBV		99
4) FREON 152A	5.136	65	146848	9.00	PPBV		97
5) CHLORODIFLUOROMETHANE	5.184	67	55632	8.73	PPBV		99
6) PROPYLENE	5.227	41	220645	8.23	PPBV		98
7) PROPANE	5.245	43	77819	7.46	PPBV	#	100
8) FREON 114	5.562	85	576250	9.19	PPBV		97
9) CHLOROMETHANE	5.470	52	78280	8.72	PPBV		93
10) VINYL CHLORIDE	5.695	62	261481	9.32	PPBV		100
11) 1,3-BUTADIENE	5.835	54	197153	9.18	PPBV		95
12) n-BUTANE	5.890	43	394760	8.54	PPBV		98
13) BROMOMETHANE	6.121	94	218235	9.71	PPBV		100
14) CHLOROETHANE	6.286	64	143727	9.69	PPBV		98
15) FREON 123	6.760	83	466343	9.62	PPBV	#	100
16) FREON 123A	6.821	117	252867	9.55	PPBV		92
17) TRICHLOROFLUOROMETHANE	7.058	101	494701	9.30	PPBV		100
18) ISOPROPYL ALCOHOL	7.101	45	349195	8.92	PPBV		97
19) ACETONE	6.870	58	99692	8.94	PPBV	#	90
20) PENTANE	7.399	42	262130	8.42	PPBV		99
21) TVHC as EQUIV PENTANE	7.399	TIC	1640785m	9.18	PPBV		
22) ETHYL ETHER	7.399	74	106290	9.97	PPBV		94
23) IODOMETHANE	7.636	142	524337	10.02	PPBV		98
24) 1,1-DICHLOROETHYLENE	7.697	96	192669	9.17	PPBV		93
25) CARBON DISULFIDE	8.153	76	654781	9.13	PPBV		98
26) ETHANOL	6.389	45	77937	8.52	PPBV		95
27) BROMOETHENE	6.645	106	208591	10.10	PPBV		100
28) METHYLENE CHLORIDE	7.794	84	182250	8.64	PPBV		93
29) 3-CHLOROPROPENE	7.922	76	101180	9.52	PPBV	#	87
30) FREON 113	8.056	151	312839	9.44	PPBV		97
31) TRANS-1,2-DICHLOROETHY...	8.737	96	232858	9.37	PPBV		95
32) TERTIARY BUTYL ALCOHOL	7.697	59	405668	9.15	PPBV		99
33) METHYL TERTIARY BUTYL ...	8.975	73	550737	9.40	PPBV		98
34) TETRAHYDROFURAN	10.489	42	273585	9.10	PPBV		94
35) HEXANE	9.978	57	335059	9.00	PPBV		97
36) VINYL ACETATE	9.048	86	48496	9.91	PPBV	#	85
37) 1,1-DICHLOROETHANE	8.944	63	426308	9.13	PPBV		99
38) METHYL ETHYL KETONE	9.309	72	107663	9.58	PPBV	#	87
39) cis-1,2-DICHLOROETHYLENE	9.778	96	229973	9.46	PPBV		95
40) ETHYL ACETATE	9.954	61	63083	8.91	PPBV	#	89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41) CHLOROFORM	10.070	83	421302	9.48	PPBV		99
42) 2,4-DIMETHYLPENTANE	10.873	57	403596	9.24	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.092	97	427948	9.41	PPBV		98
44) CARBON TETRACHLORIDE	11.718	117	446234	9.45	PPBV		100
45) 1,2-DICHLOROETHANE	10.830	62	294283	9.23	PPBV		99
47) BENZENE	11.566	78	692166	9.05	PPBV		99
48) CYCLOHEXANE	11.852	84	301937	8.81	PPBV		96
49) 2,3-DIMETHYLPENTANE	12.059	71	152023	9.55	PPBV		96
50) TRICHLOROETHYLENE	12.625	95	255946	9.19	PPBV		98
51) 1,2-DICHLOROPROPANE	12.387	63	269564	9.47	PPBV		100
52) BROMODICHLOROMETHANE	12.582	83	439357	9.67	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.649	57	916827	8.73	PPBV		100
54) 1,4-DIOXANE	12.631	88	125639	9.02	PPBV	#	1
55) METHYL METHACRYLATE	12.783	69	214057	9.65	PPBV		93
56) HEPTANE	12.898	43	400703	8.66	PPBV		95
57) TVHC as EQUIV HEPTANE	12.898	TIC	1722808m	9.25	PPBV		
58) METHYL ISOBUTYL KETONE	13.519	43	460309	8.62	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.495	75	367518	9.92	PPBV		97
60) TOLUENE	14.529	92	459430	9.89	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.030	75	345463	9.88	PPBV		97
62) 1,1,2-TRICHLOROETHANE	14.225	83	219840	9.72	PPBV		98
64) 2-HEXANONE	14.772	58	225368	8.34	PPBV		95
65) TETRACHLOROETHYLENE	15.727	164	284900	9.49	PPBV		99
66) DIBROMOCHLOROMETHANE	14.985	129	430220	10.29	PPBV		99
67) 1,2-DIBROMOETHANE	15.247	107	354935	9.71	PPBV		99
68) OCTANE	15.520	43	500544	9.32	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.433	131	282201	10.06	PPBV	#	100
70) CHLOROBENZENE	16.463	112	485850	9.33	PPBV		98
71) ETHYLBENZENE	16.853	91	856999	9.79	PPBV		99
72) m,p-XYLENE	17.047	106	632152	19.98	PPBV		96
73) o-XYLENE	17.565	106	300958	10.18	PPBV		98
74) STYRENE	17.443	104	465885	11.03	PPBV		99
75) NONANE	17.747	43	441506	10.05	PPBV		97
76) BROMOFORM	17.163	173	357412	11.01	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.552	83	362819	10.19	PPBV		99
79) ISOPROPYLBENZENE	18.185	105	811877	10.49	PPBV		99
80) 2-CHLOROTOLUENE	18.714	126	187002	10.68	PPBV	#	93
81) n-PROPYLBENZENE	18.733	120	205260	11.05	PPBV		91
82) 4-ETHYLTOLUENE	18.885	105	660583	11.01	PPBV		98
83) 1,3,5-TRIMETHYLBENZENE	18.964	105	558643	11.11	PPBV		100
84) TERT-BUTYLBENZENE	19.414	134	138045	10.95	PPBV		96
85) 1,2,4-TRIMETHYLBENZENE	19.420	105	471947	11.19	PPBV		99
86) m-DICHLOROBENZENE	19.609	146	274902	10.94	PPBV		100
87) BENZYL CHLORIDE	19.578	91	264785	10.05	PPBV		99
88) p-DICHLOROBENZENE	19.676	146	237706	10.25	PPBV		100
89) SEC-BUTYLBENZENE	19.712	134	149465	11.21	PPBV		95
90) p-ISOPROPYLTOLUENE	19.882	134	140382	11.33	PPBV		99
91) o-DICHLOROBENZENE	20.059	146	226961	10.95	PPBV		99
92) n-BUTYLBENZENE	20.345	134	89412	10.76	PPBV		97
93) HEXACHLOROBUTADIENE	22.425	225	58824	8.06	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

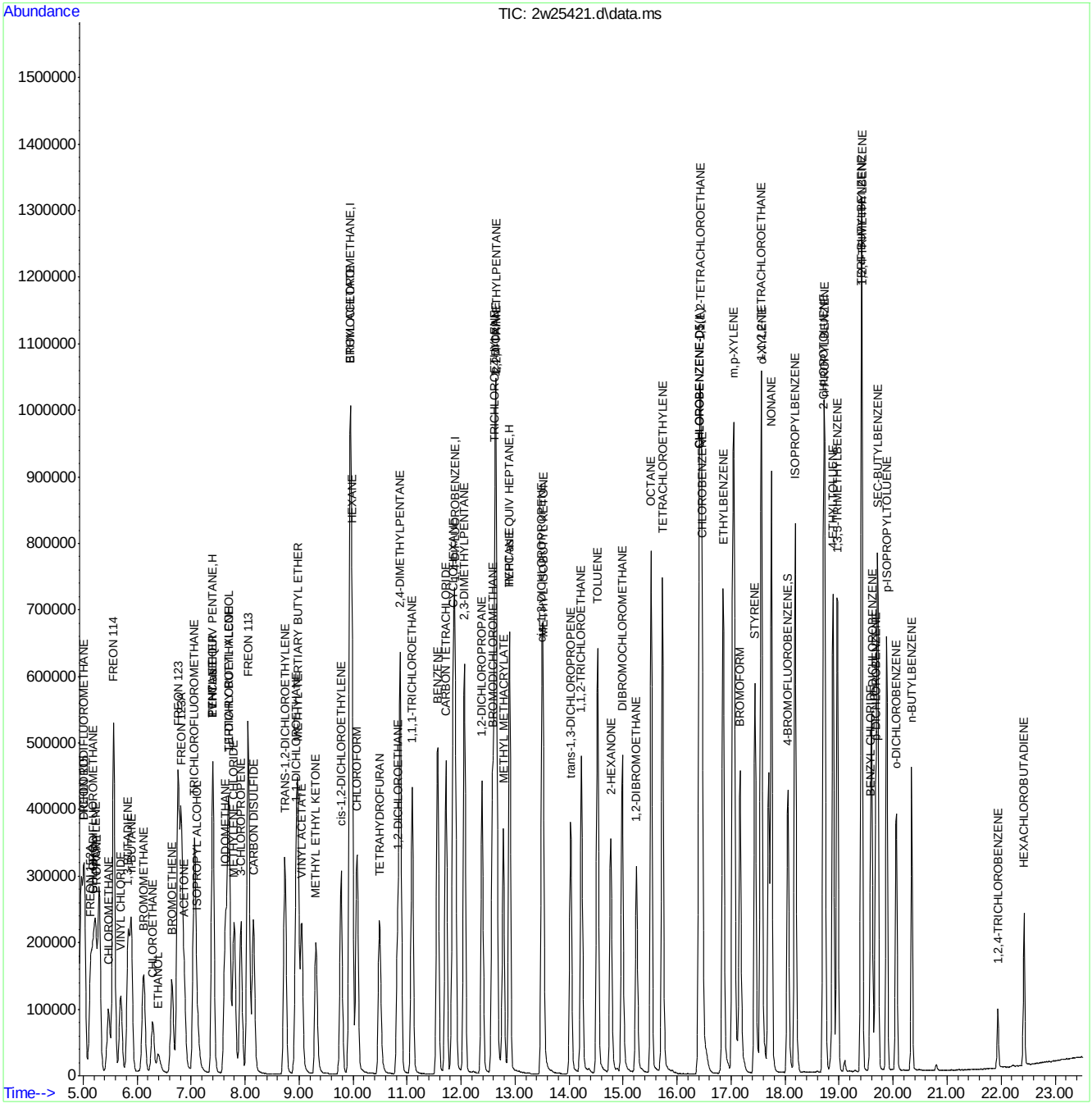
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.939	180	37816	8.04	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

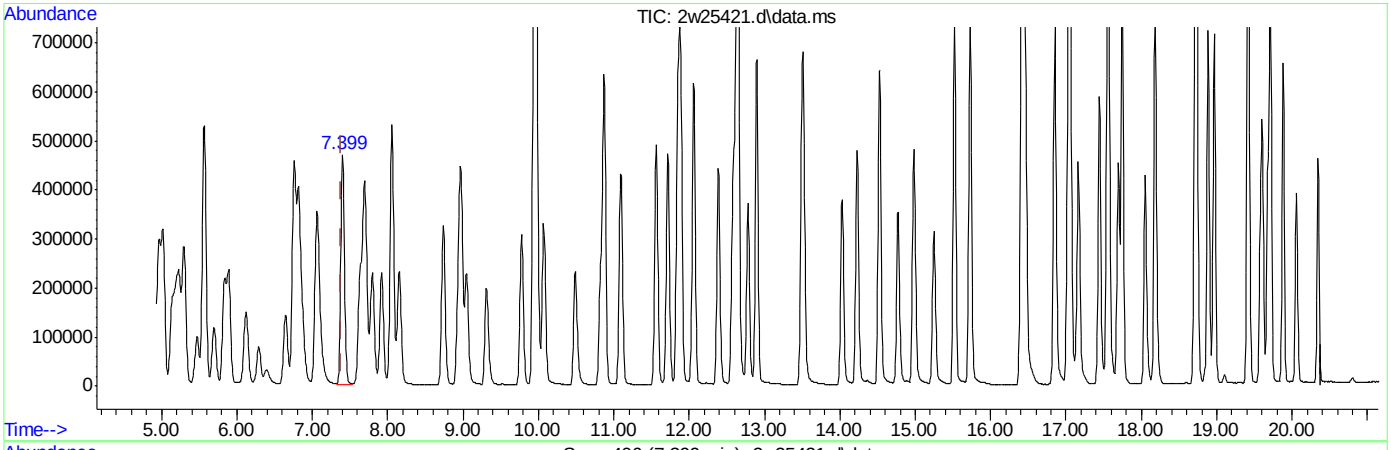


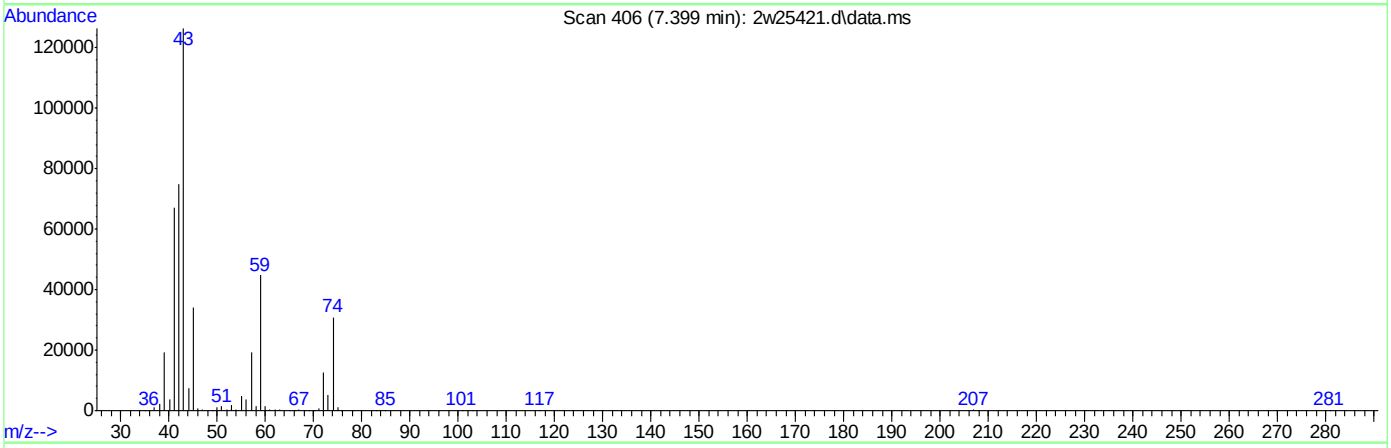
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:39 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25421.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.399min (+0.006) 9.18PPBV m

response 1640785

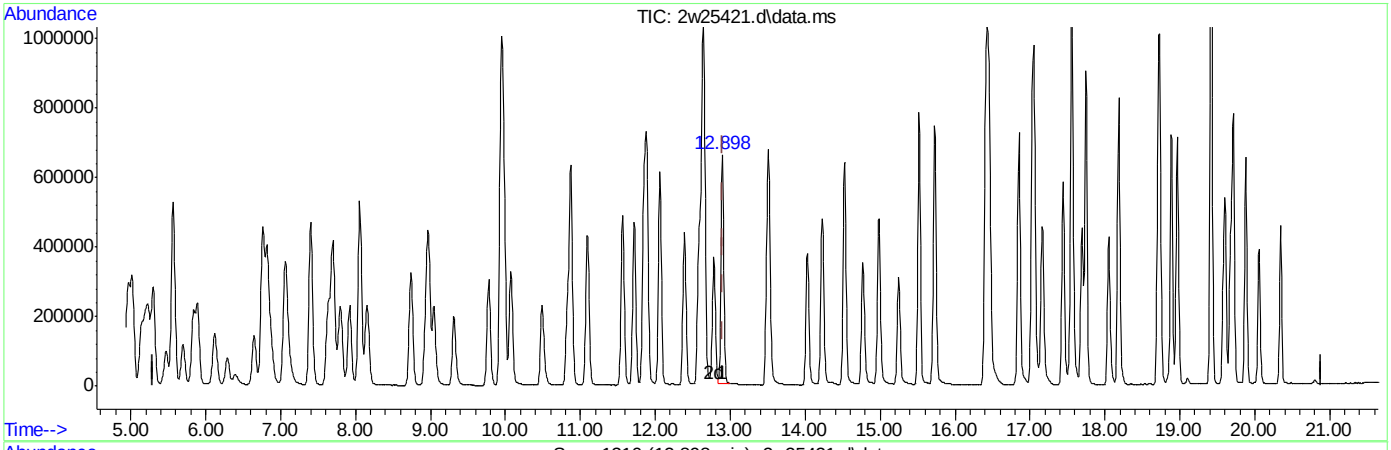
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

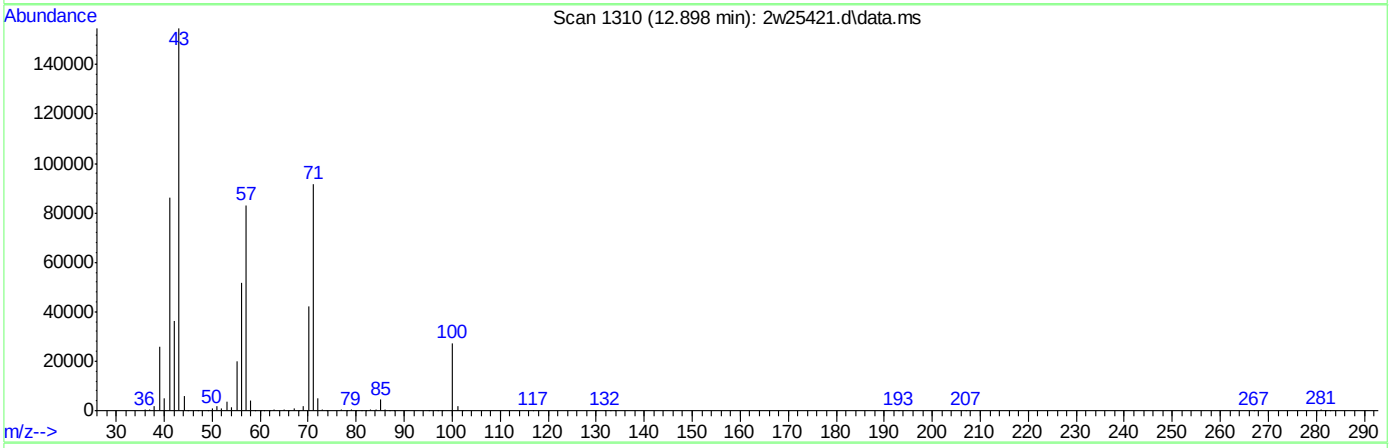
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:39 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25421.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.898min (+0.000) 9.25PPBV m

response 1722808

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:02 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	117415	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	552536	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	294205	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	294107	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	161641	5.39	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 107.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	103875	8.59	PPBV	99
3) DICHLORODIFLUOROMETHANE	5.01	85	159971	8.77	PPBV	99
4) FREON 152A	5.13	65	125934	10.06	PPBV	95
5) CHLORODIFLUOROMETHANE	5.18	67	47411	9.70	PPBV	96
6) PROPYLENE	5.22	41	195415	9.50	PPBV	100
7) PROPANE	5.23	43	69975	8.74	PPBV #	100
8) FREON 114	5.56	85	498222	10.36	PPBV	99
9) CHLOROMETHANE	5.46	52	68232	9.90	PPBV #	88
10) VINYL CHLORIDE	5.69	62	226062	10.50	PPBV	100
11) 1,3-BUTADIENE	5.83	54	170809	10.36	PPBV	96
12) n-BUTANE	5.88	43	347483	9.80	PPBV	98
13) BROMOMETHANE	6.12	94	184586	10.71	PPBV	100
14) CHLOROETHANE	6.29	64	125921	11.06	PPBV	98
15) FREON 123	6.76	83	402185	10.81	PPBV #	100
16) FREON 123A	6.82	117	212648	10.47	PPBV	97
17) TRICHLOROFLUOROMETHANE	7.06	101	424648	10.41	PPBV	100
18) ISOPROPYL ALCOHOL	7.10	45	293248	9.76	PPBV	98
19) ACETONE	6.88	58	85686	10.02	PPBV #	90
20) PENTANE	7.40	42	229119	9.59	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1394660m	10.18	PPBV	
22) ETHYL ETHER	7.41	74	86786	10.61	PPBV	98
23) IODOMETHANE	7.64	142	421301	10.50	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.70	96	161641	10.03	PPBV	96
25) CARBON DISULFIDE	8.15	76	557058	10.13	PPBV	99
26) ETHANOL	6.40	45	67669	9.64	PPBV	98
27) BROMOETHENE	6.64	106	172056	10.86	PPBV	100
28) METHYLENE CHLORIDE	7.80	84	154087	9.52	PPBV	96
29) 3-CHLOROPROPENE	7.92	76	86455	10.61	PPBV #	88
30) FREON 113	8.06	151	252627	9.94	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	193727	10.16	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.70	59	317136	9.33	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.98	73	444815	9.90	PPBV	99
34) TETRAHYDROFURAN	10.50	42	224432	9.73	PPBV	96
35) HEXANE	9.98	57	288272	10.09	PPBV	97
36) VINYL ACETATE	9.05	86	40558	10.80	PPBV #	87
37) 1,1-DICHLOROETHANE	8.94	63	370597	10.35	PPBV	99
38) METHYL ETHYL KETONE	9.32	72	86729	10.06	PPBV #	90
39) cis-1,2-DICHLOROETHYLENE	9.78	96	191924	10.29	PPBV	97
40) ETHYL ACETATE	9.95	61	52159	9.60	PPBV #	94
41) CHLOROFORM	10.07	83	359758	10.56	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:02 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	347619	10.38	PPBV		100
43) 1,1,1-TRICHLOROETHANE	11.09	97	368054	10.55	PPBV		99
44) CARBON TETRACHLORIDE	11.72	117	380476	10.50	PPBV		100
45) 1,2-DICHLOROETHANE	10.82	62	254858	10.42	PPBV		100
47) BENZENE	11.56	78	594252	10.42	PPBV		99
48) CYCLOHEXANE	11.85	84	254223	9.94	PPBV		98
49) 2,3-DIMETHYLPENTANE	12.06	71	130071	10.95	PPBV		98
50) TRICHLOROETHYLENE	12.62	95	217509	10.48	PPBV		99
51) 1,2-DICHLOROPROPANE	12.39	63	231771	10.92	PPBV		99
52) BROMODICHLOROMETHANE	12.58	83	379341	11.20	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.65	57	808699	10.32	PPBV		100
54) 1,4-DIOXANE	12.64	88	102184	9.84	PPBV	#	1
55) METHYL METHACRYLATE	12.78	69	171872	10.39	PPBV		94
56) HEPTANE	12.89	43	355958	10.31	PPBV		98
57) TVHC as EQUIV HEPTANE	12.89	TIC	1485101m	10.69	PPBV		
58) METHYL ISOBUTYL KETONE	13.52	43	381047	9.57	PPBV		98
59) cis-1,3-DICHLOROPROPENE	13.49	75	311052	11.26	PPBV		97
60) TOLUENE	14.52	92	383251	11.07	PPBV		100
61) trans-1,3-DICHLOROPROPENE	14.03	75	287732	11.04	PPBV		97
62) 1,1,2-TRICHLOROETHANE	14.22	83	185187	10.98	PPBV		99
64) 2-HEXANONE	14.77	58	180457	8.67	PPBV		99
65) TETRACHLOROETHYLENE	15.73	164	231557	10.01	PPBV		99
66) DIBROMOCHLOROMETHANE	14.98	129	355835	11.05	PPBV		100
67) 1,2-DIBROMOETHANE	15.25	107	294193	10.45	PPBV		100
68) OCTANE	15.52	43	441609	10.68	PPBV		97
69) 1,1,1,2-TETRACHLOROETHANE	16.43	131	234861	10.86	PPBV	#	99
70) CHLOROBENZENE	16.46	112	402120	10.02	PPBV		100
71) ETHYLBENZENE	16.85	91	718893	10.66	PPBV		100
72) m,p-XYLENE	17.04	106	521768	21.41	PPBV		99
73) o-XYLENE	17.56	106	249200	10.95	PPBV		100
74) STYRENE	17.44	104	377607	11.61	PPBV		100
75) NONANE	17.75	43	386483	11.42	PPBV		98
76) BROMOFORM	17.16	173	290452	11.61	PPBV		100
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	306350	11.17	PPBV		100
79) ISOPROPYLBENZENE	18.18	105	682262	11.44	PPBV		100
80) 2-CHLOROTOLUENE	18.71	126	155315	11.51	PPBV		99
81) n-PROPYLBENZENE	18.73	120	167245	11.69	PPBV		99
82) 4-ETHYLTOLUENE	18.88	105	545482	11.80	PPBV		99
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	459758	11.87	PPBV		98
84) TERT-BUTYLBENZENE	19.41	134	111681	11.50	PPBV		99
85) 1,2,4-TRIMETHYLBENZENE	19.42	105	388938	11.97	PPBV		99
86) m-DICHLOROBENZENE	19.60	146	217854	11.26	PPBV		100
87) BENZYL CHLORIDE	19.58	91	219796	10.83	PPBV		100
88) p-DICHLOROBENZENE	19.68	146	193051	10.81	PPBV		100
89) SEC-BUTYLBENZENE	19.71	134	118686	11.56	PPBV		97
90) p-ISOPROPYLTOLUENE	19.88	134	110796	11.61	PPBV		99
91) o-DICHLOROBENZENE	20.06	146	180874	11.33	PPBV		99
92) n-BUTYLBENZENE	20.34	134	71665	11.20	PPBV		97
93) HEXACHLOROBUTADIENE	22.43	225	52795	9.39	PPBV		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:02 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

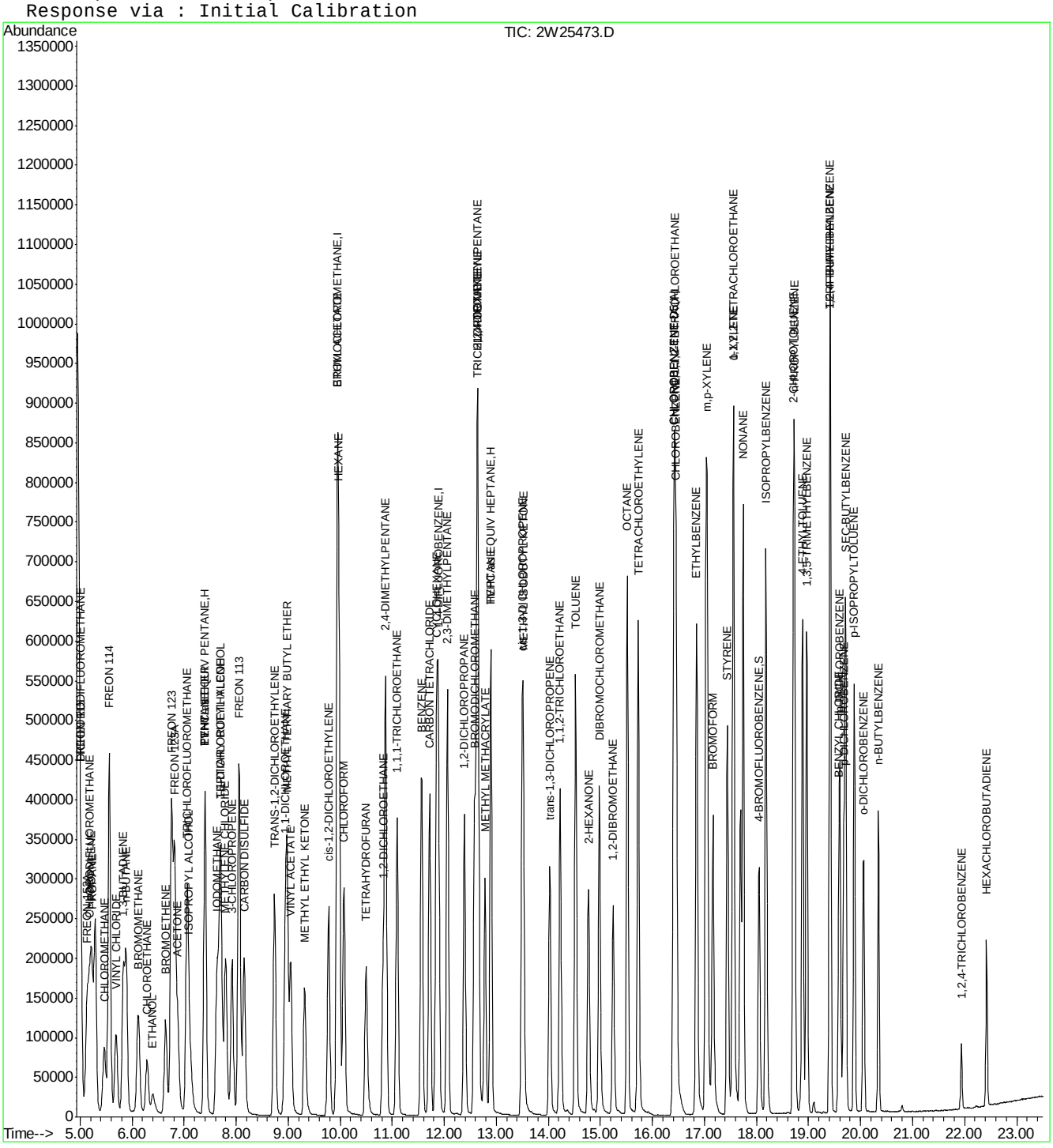
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	34290	9.46	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



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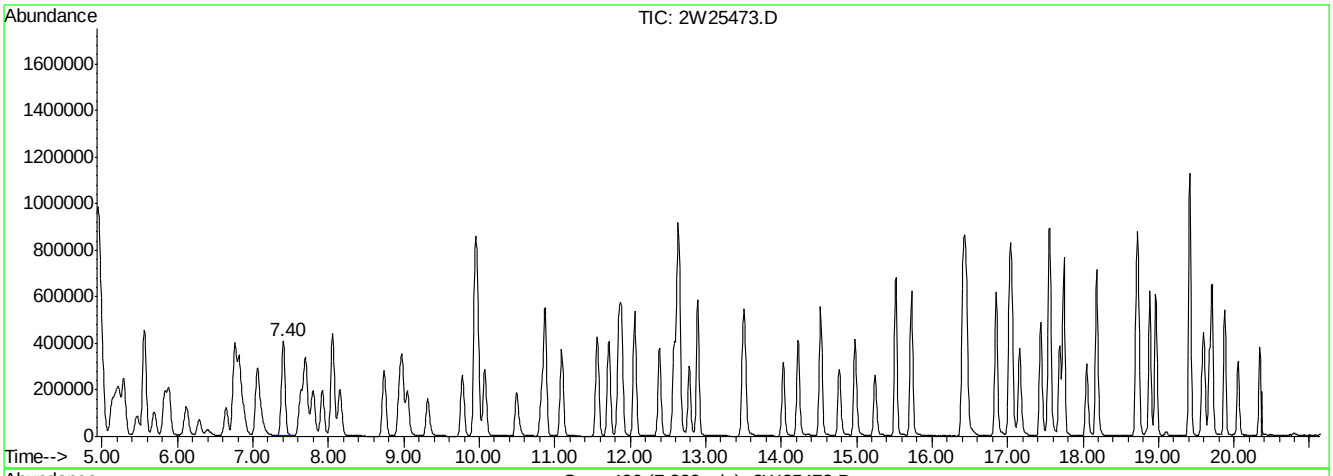
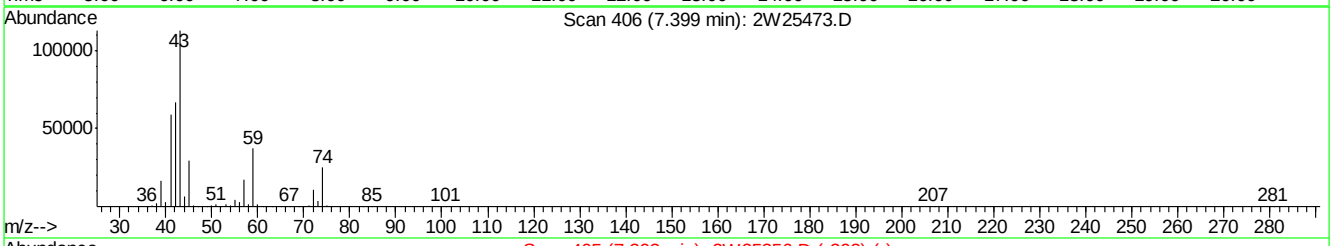
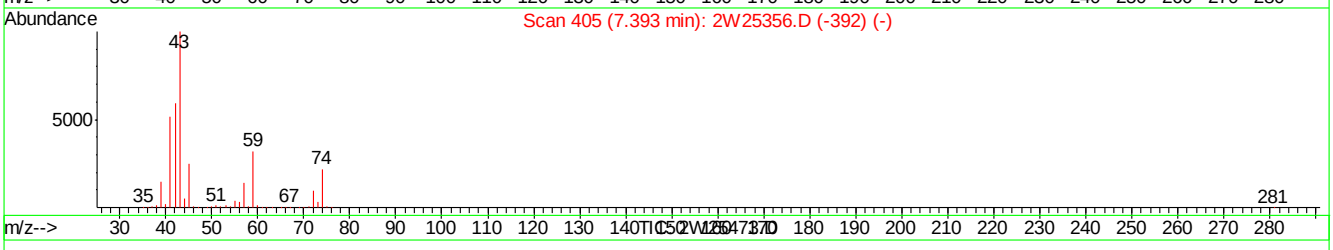
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 10.18PPBV m

response 1394660

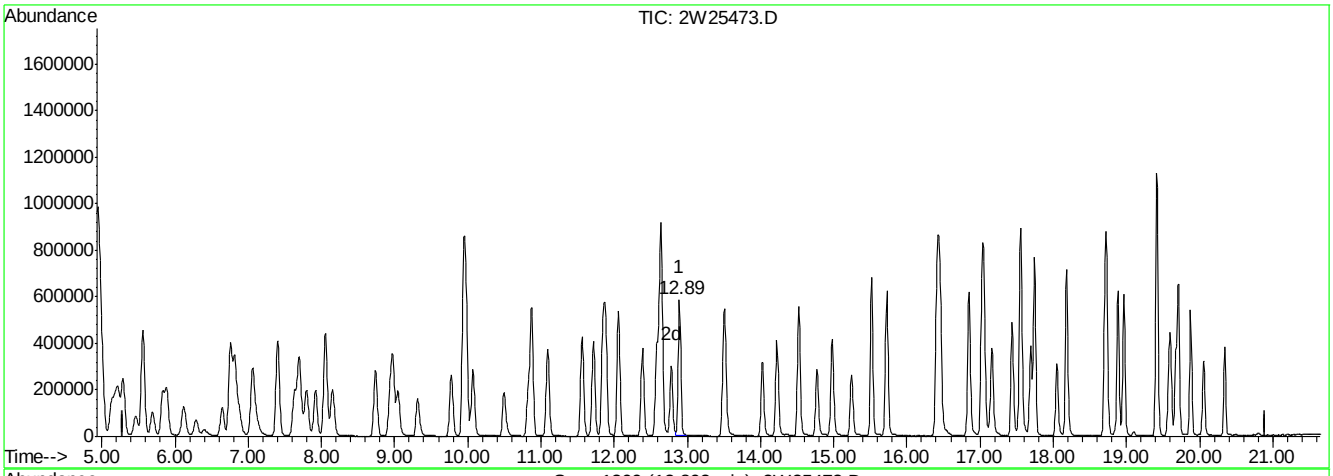
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

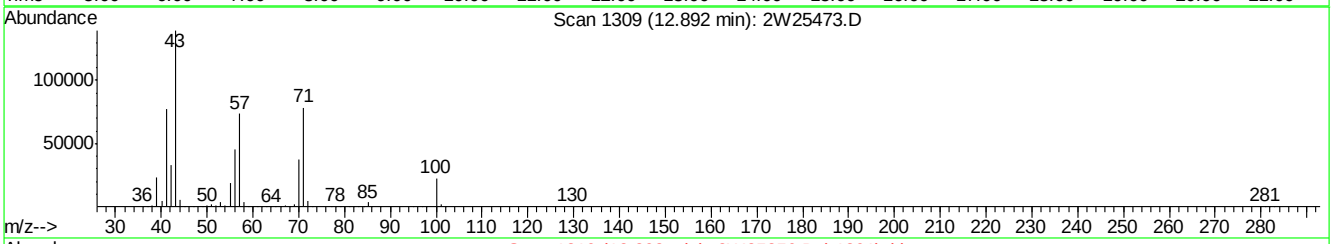
2W25473.D M2W1070.M Sun Sep 13 11:35:28 2009 MS2W

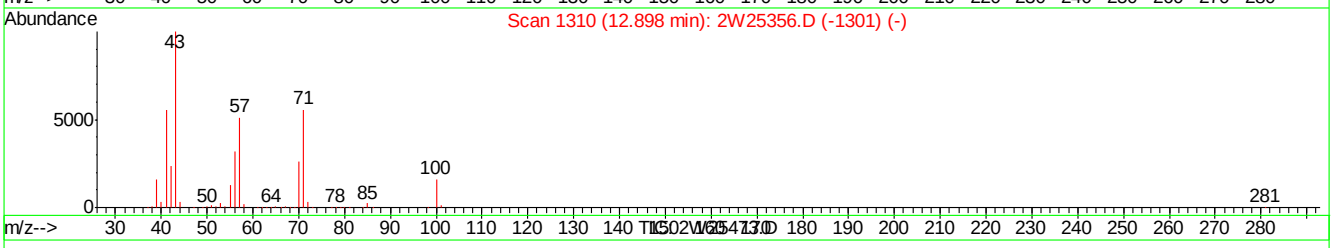
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 10.69PPBV m

response 1485101

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25473.D M2W1070.M Sun Sep 13 11:35:31 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:05 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	120727	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	567505	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.40	82	298489	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.40	82	298389	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	163044	5.36	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 107.20%

Target Compounds						Qvalue
2) FREON 115	5.01	119	97785	7.87	PPBV	99
3) DICHLORODIFLUOROMETHANE	5.01	85	151288	8.06	PPBV	99
4) FREON 152A	5.13	65	125916	9.78	PPBV	96
5) CHLORODIFLUOROMETHANE	5.18	67	47786	9.51	PPBV	98
6) PROPYLENE	5.22	41	194709	9.20	PPBV	99
7) PROPANE	5.23	43	70056	8.51	PPBV #	100
8) FREON 114	5.56	85	502128	10.15	PPBV	99
9) CHLOROMETHANE	5.46	52	68591	9.68	PPBV	96
10) VINYL CHLORIDE	5.69	62	227430	10.27	PPBV	99
11) 1,3-BUTADIENE	5.84	54	171241	10.11	PPBV	95
12) n-BUTANE	5.88	43	347541	9.53	PPBV	98
13) BROMOMETHANE	6.12	94	183721	10.36	PPBV	99
14) CHLOROETHANE	6.29	64	125439	10.72	PPBV	99
15) FREON 123	6.76	83	401113	10.49	PPBV #	100
16) FREON 123A	6.81	117	211574	10.13	PPBV	96
17) TRICHLOROFLUOROMETHANE	7.06	101	422970	10.09	PPBV	100
18) ISOPROPYL ALCOHOL	7.09	45	289395	9.37	PPBV	99
19) ACETONE	6.87	58	84565	9.62	PPBV	91
20) PENTANE	7.40	42	229724	9.36	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1411997m	10.02	PPBV	
22) ETHYL ETHER	7.40	74	87765	10.44	PPBV	98
23) IODOMETHANE	7.63	142	429275	10.40	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.69	96	163547	9.87	PPBV	95
25) CARBON DISULFIDE	8.15	76	562927	9.95	PPBV	98
26) ETHANOL	6.39	45	66503	9.22	PPBV	100
27) BROMOETHENE	6.64	106	171869	10.55	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	158714	9.54	PPBV	95
29) 3-CHLOROPROPENE	7.92	76	87112	10.40	PPBV #	88
30) FREON 113	8.06	151	257393	9.85	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	196284	10.01	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.69	59	321700	9.20	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	448692	9.71	PPBV	99
34) TETRAHYDROFURAN	10.49	42	225967	9.53	PPBV	95
35) HEXANE	9.98	57	292464	9.96	PPBV	96
36) VINYL ACETATE	9.05	86	39639	10.27	PPBV #	92
37) 1,1-DICHLOROETHANE	8.94	63	374337	10.17	PPBV	99
38) METHYL ETHYL KETONE	9.31	72	86771	9.79	PPBV #	92
39) cis-1,2-DICHLOROETHYLENE	9.78	96	195324	10.18	PPBV	97
40) ETHYL ACETATE	9.95	61	52083	9.32	PPBV #	96
41) CHLOROFORM	10.07	83	363603	10.38	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:05 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	351281	10.20 PPBV	99
43) 1,1,1-TRICHLOROETHANE	11.09	97	372959	10.40 PPBV	99
44) CARBON TETRACHLORIDE	11.71	117	384506	10.32 PPBV	100
45) 1,2-DICHLOROETHANE	10.82	62	257124	10.22 PPBV	100
47) BENZENE	11.56	78	599782	10.24 PPBV	99
48) CYCLOHEXANE	11.85	84	256974	9.78 PPBV	97
49) 2,3-DIMETHYLPENTANE	12.06	71	131240	10.76 PPBV	98
50) TRICHLOROETHYLENE	12.62	95	218613	10.25 PPBV	100
51) 1,2-DICHLOROPROPANE	12.38	63	232501	10.66 PPBV	100
52) BROMODICHLOROMETHANE	12.58	83	381380	10.96 PPBV	99
53) 2,2,4-TRIMETHYLPENTANE	12.65	57	814352	10.12 PPBV	100
54) 1,4-DIOXANE	12.62	88	102677	9.62 PPBV #	1
55) METHYL METHACRYLATE	12.78	69	174561	10.27 PPBV	94
56) HEPTANE	12.89	43	356853	10.07 PPBV	96
57) TVHC as EQUIV HEPTANE	12.89	TIC	1504992m	10.55 PPBV	
58) METHYL ISOBUTYL KETONE	13.51	43	383676	9.38 PPBV	98
59) cis-1,3-DICHLOROPROPENE	13.49	75	314296	11.08 PPBV	97
60) TOLUENE	14.52	92	388478	10.92 PPBV	100
61) trans-1,3-DICHLOROPROPENE	14.02	75	289433	10.81 PPBV	98
62) 1,1,2-TRICHLOROETHANE	14.22	83	186891	10.79 PPBV	99
64) 2-HEXANONE	14.77	58	183183	8.67 PPBV	96
65) TETRACHLOROETHYLENE	15.73	164	234616	10.00 PPBV	99
66) DIBROMOCHLOROMETHANE	14.98	129	361154	11.05 PPBV	99
67) 1,2-DIBROMOETHANE	15.24	107	297228	10.40 PPBV	100
68) OCTANE	15.51	43	444661	10.60 PPBV	97
69) 1,1,1,2-TETRACHLOROETHANE	16.43	131	235952	10.76 PPBV #	100
70) CHLOROBENZENE	16.46	112	405165	9.95 PPBV	100
71) ETHYLBENZENE	16.85	91	722722	10.56 PPBV	100
72) m,p-XYLENE	17.04	106	525980	21.27 PPBV	100
73) o-XYLENE	17.56	106	249481	10.80 PPBV	100
74) STYRENE	17.44	104	380292	11.53 PPBV	100
75) NONANE	17.74	43	386292	11.25 PPBV	98
76) BROMOFORM	17.16	173	290099	11.43 PPBV	99
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	306389	11.01 PPBV	100
79) ISOPROPYLBENZENE	18.18	105	683810	11.30 PPBV	100
80) 2-CHLOROTOLUENE	18.71	126	154666	11.30 PPBV	100
81) n-PROPYLBENZENE	18.73	120	167753	11.56 PPBV	100
82) 4-ETHYLTOLUENE	18.88	105	555054	11.84 PPBV	100
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	456780	11.62 PPBV	99
84) TERT-BUTYLBENZENE	19.41	134	111810	11.35 PPBV	99
85) 1,2,4-TRIMETHYLBENZENE	19.41	105	391196	11.87 PPBV	99
86) m-DICHLOROBENZENE	19.60	146	219308	11.17 PPBV	100
87) BENZYL CHLORIDE	19.58	91	224177	10.89 PPBV	100
88) p-DICHLOROBENZENE	19.68	146	194735	10.75 PPBV	100
89) SEC-BUTYLBENZENE	19.71	134	120198	11.54 PPBV	98
90) p-ISOPROPYLTOLUENE	19.88	134	111389	11.50 PPBV	97
91) o-DICHLOROBENZENE	20.05	146	181720	11.22 PPBV	100
92) n-BUTYLBENZENE	20.34	134	72567	11.17 PPBV	97
93) HEXACHLOROBUTADIENE	22.43	225	55280	9.69 PPBV	100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:05 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

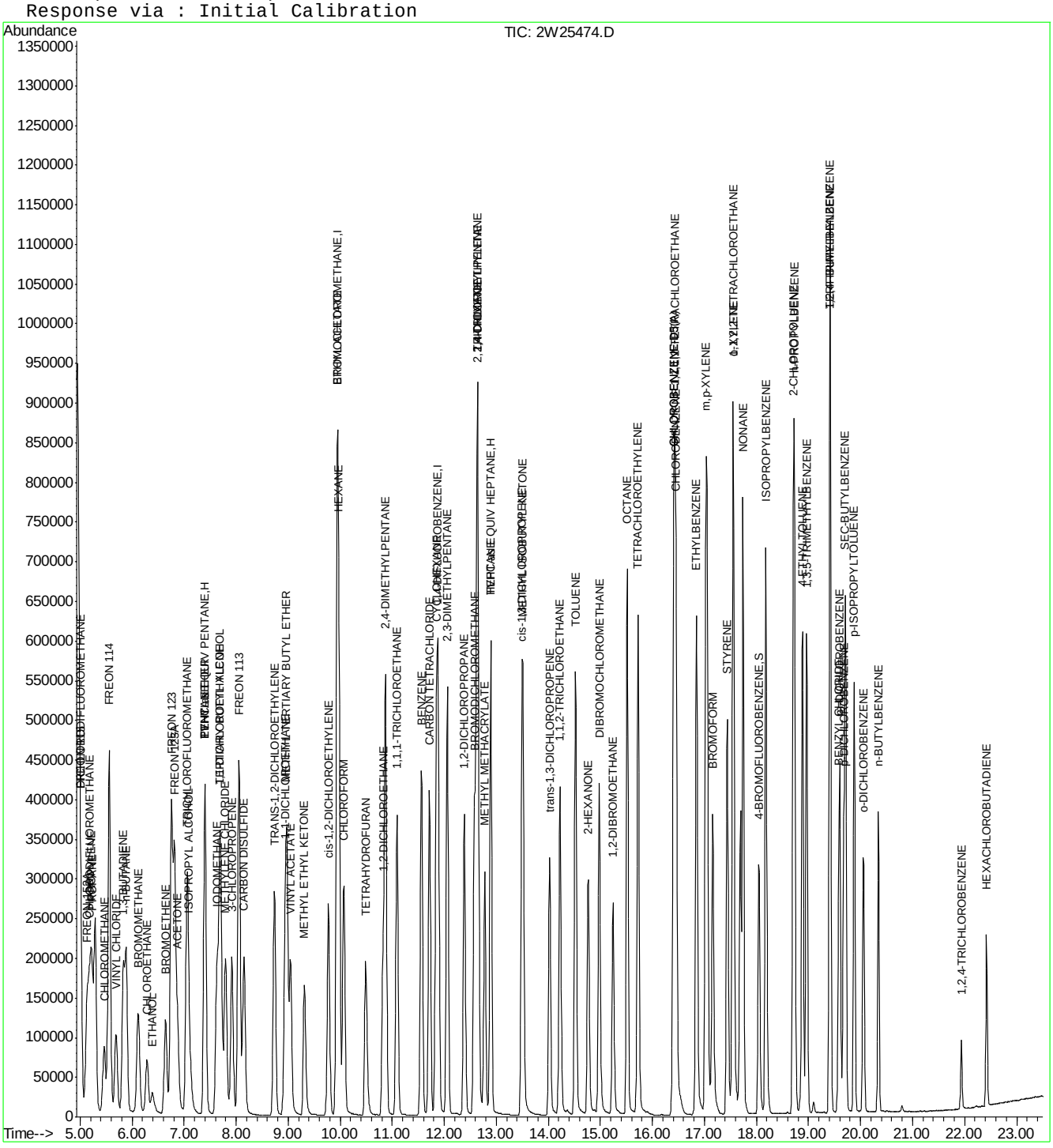
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	35283	9.60	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009 Quant Results File: M2W1070.RES

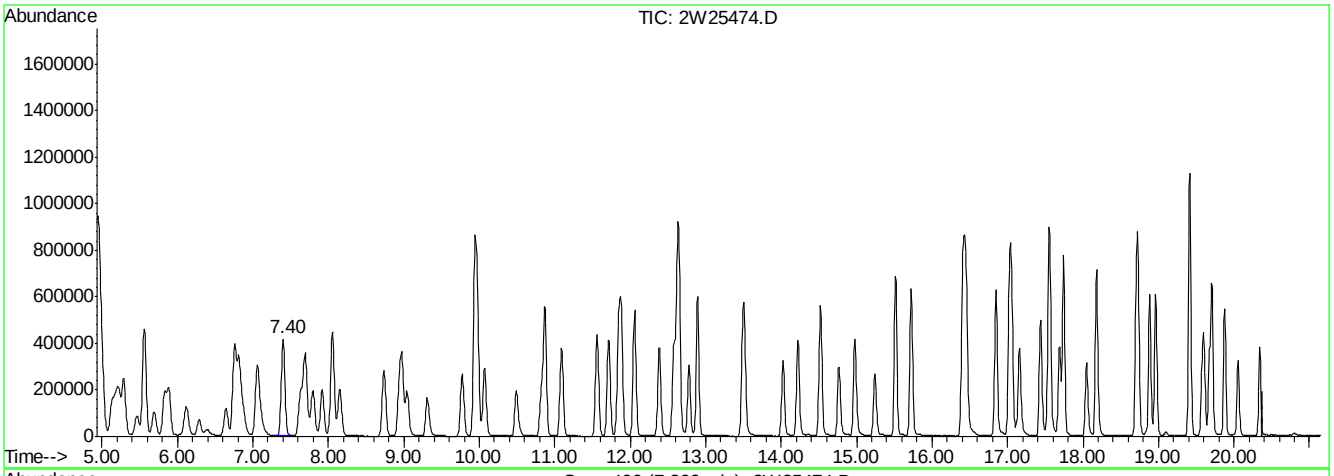
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

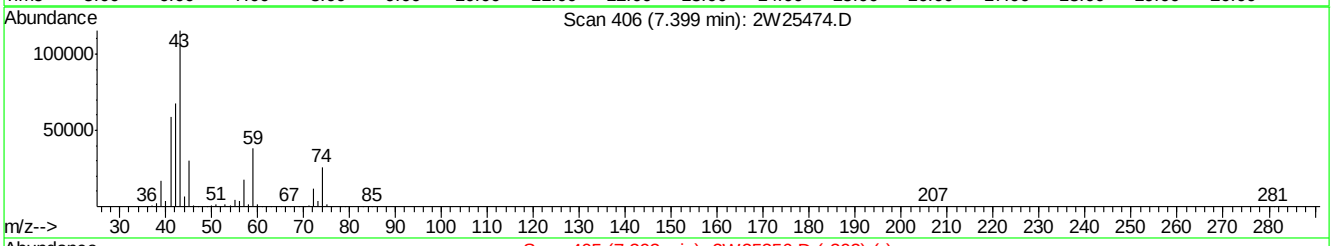


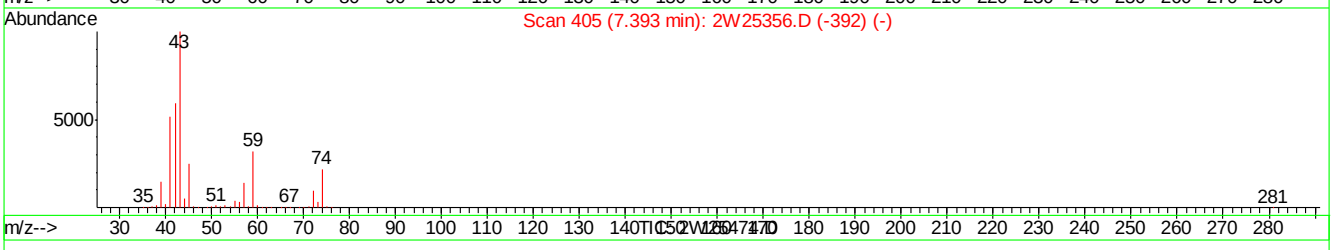
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 10.02PPBV m

response 1411997

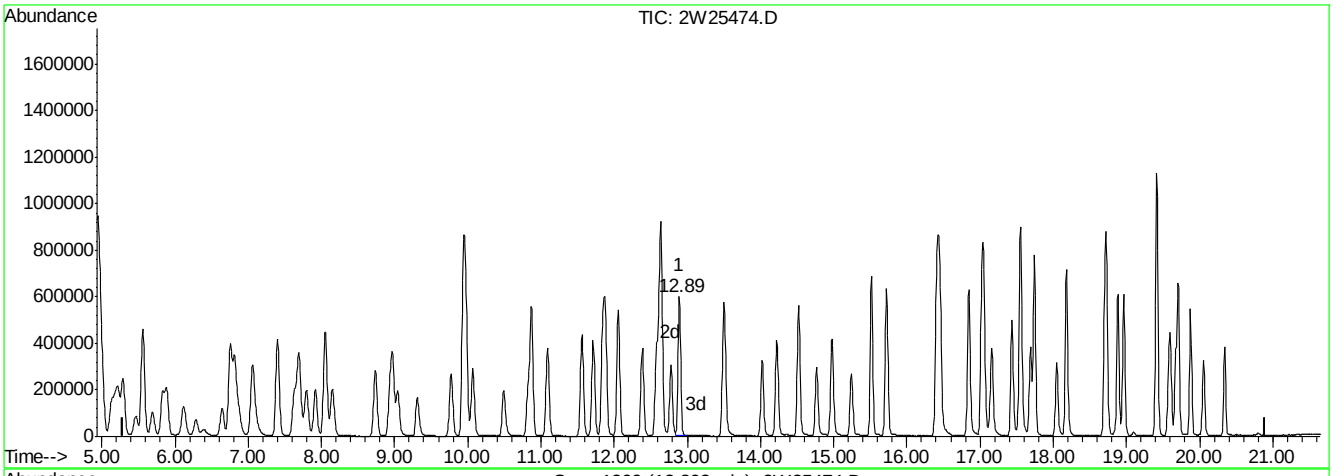
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

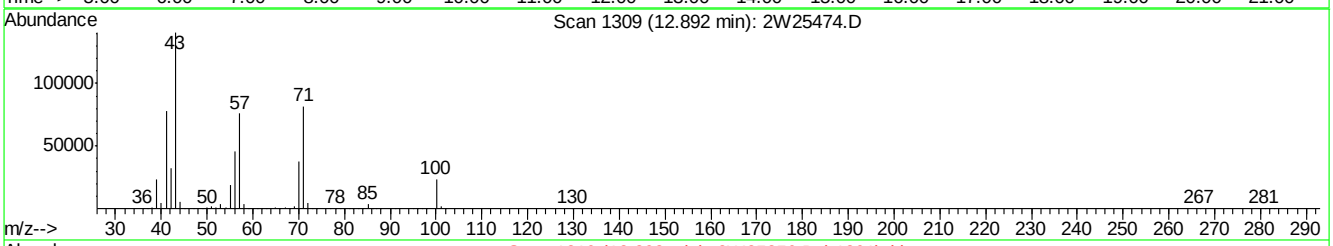
2W25474.D M2W1070.M Sun Sep 13 11:35:43 2009 MS2W

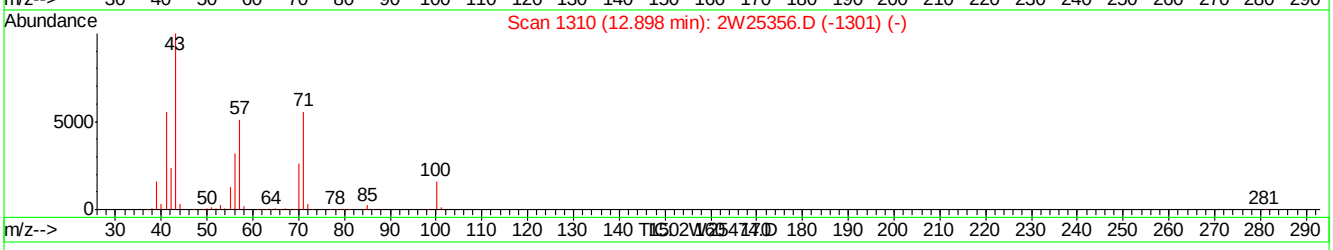
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 10.55PPBV m

response 1504992

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25474.D M2W1070.M Sun Sep 13 11:35:47 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	95784	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	413899	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	194989	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	194989	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	105871	5.18	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 103.60%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	248315	8.83	PPBV	96
3) FREON 152A	4.16	65	85161	9.62	PPBV	98
4) CHLORODIFLUOROMETHANE	4.19	67	37104	8.64	PPBV	96
5) DICHLORODIFLUOROMETHANE	4.26	85	337424	8.74	PPBV	100
6) PROPANE	4.23	43	46797	9.79	PPBV	100
7) PROPYLENE	4.21	41	137362	10.05	PPBV	98
8) FREON 114	4.44	85	370213	9.13	PPBV	97
9) CHLOROMETHANE	4.38	50	121560	8.71	PPBV	99
10) VINYL CHLORIDE	4.53	62	141331	10.17	PPBV	100
11) 1,3-BUTADIENE	4.62	54	104530	10.54	PPBV	98
12) n-BUTANE	4.64	43	207799	9.62	PPBV	99
13) BROMOMETHANE	4.82	94	134361	9.76	PPBV	99
14) CHLOROETHANE	4.92	64	75475	10.51	PPBV	99
15) FREON 123	5.26	83	312099	10.20	PPBV	99
16) FREON 123A	5.29	117	185857	9.68	PPBV	91
17) TRICHLOROFLUOROMETHANE	5.46	101	350879	9.09	PPBV	100
18) ISOPROPYL ALCOHOL	5.52	45	193157	10.62	PPBV	97
19) ACETONE	5.34	58	55160	10.23	PPBV	92
20) PENTANE	5.67	42	142947	10.93	PPBV	95
21) TVHC as EQUIV PENTANE	5.67	TIC	892082m	12.01	PPBV	
22) ETHYL ETHER	5.70	74	56560	10.69	PPBV	99
23) IODOMETHANE	5.88	142	357370	9.70	PPBV	97
24) 1,1-DICHLOROETHYLENE	5.93	96	119748	9.51	PPBV	99
25) CARBON DISULFIDE	6.26	76	364133	9.77	PPBV	99
26) ETHANOL	5.03	45	41554	9.60	PPBV	99
27) BROMOETHENE	5.18	106	131284	9.89	PPBV	98
28) METHYLENE CHLORIDE	6.03	84	107173	9.27	PPBV	94
29) 3-CHLOROPROPENE	6.10	76	55581	10.45	PPBV #	93
30) FREON 113	6.19	151	212480	9.40	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	124082	9.59	PPBV	96
32) TERTIARY BUTYL ALCOHOL	5.94	59	245937	11.59	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	313462	9.95	PPBV	97
34) TETRAHYDROFURAN	8.18	72	50388	10.93	PPBV	91
35) HEXANE	7.67	57	187433	10.74	PPBV	99
36) VINYL ACETATE	7.00	86	23941	11.14	PPBV #	77
37) 1,1-DICHLOROETHANE	6.89	63	232243	10.39	PPBV	99
38) METHYL ETHYL KETONE	7.20	72	48824	10.65	PPBV #	86
39) cis-1,2-DICHLOROETHYLENE	7.63	96	123151	9.63	PPBV	96
40) DIISOPROPYL ETHER	7.67	45	342683	11.46	PPBV	99
41) ETHYL ACETATE	7.75	61	29650	10.03	PPBV #	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.85	83	258226	9.73	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.43	57	213908	10.78	PPBV		99
44)	1,1,1-TRICHLOROETHANE	8.71	97	270721	9.51	PPBV		98
45)	CARBON TETRACHLORIDE	9.27	117	287630	9.68	PPBV		100
46)	1,2-DICHLOROETHANE	8.49	62	178473	10.30	PPBV		100
48)	BENZENE	9.14	78	368521	10.65	PPBV		99
49)	CYCLOHEXANE	9.32	56	187085	10.85	PPBV	#	80
50)	2,3-DIMETHYLPENTANE	9.50	71	79331	10.23	PPBV		96
51)	TRICHLOROETHYLENE	10.10	95	163202	10.42	PPBV		98
52)	1,2-DICHLOROPROPANE	9.86	63	131324	10.54	PPBV		94
53)	BROMODICHLOROMETHANE	10.08	83	268533	11.12	PPBV		100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	562488	11.04	PPBV		99
55)	1,4-DIOXANE	10.14	88	68093	9.98	PPBV		92
56)	HEPTANE	10.28	43	222782	11.01	PPBV		96
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1449604m	11.13	PPBV		
58)	METHYL METHACRYLATE	10.29	69	103126	11.41	PPBV		94
59)	METHYL ISOBUTYL KETONE	10.92	43	225399	12.08	PPBV		97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	196431	11.23	PPBV		99
61)	TOLUENE	11.88	92	248573	10.81	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	184275	11.41	PPBV		98
63)	1,1,2-TRICHLOROETHANE	11.62	83	118555	11.22	PPBV		98
65)	2-HEXANONE	12.11	43	207338	12.38	PPBV		97
66)	TETRACHLOROETHYLENE	13.03	164	191081	9.31	PPBV		98
67)	DIBROMOCHLOROMETHANE	12.33	129	267126	11.27	PPBV		99
68)	1,2-DIBROMOETHANE	12.55	107	205031	10.93	PPBV		100
69)	OCTANE	12.78	43	288898	11.17	PPBV		94
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	192225	9.85	PPBV		100
71)	CHLOROBENZENE	13.76	112	318926	10.15	PPBV		99
72)	ETHYLBENZENE	14.12	91	498778	10.42	PPBV		100
73)	m,p-XYLENE	14.30	106	382379	21.10	PPBV		99
74)	o-XYLENE	14.82	106	184522	10.70	PPBV		100
75)	STYRENE	14.72	104	253301	11.47	PPBV		100
76)	NONANE	14.97	43	271169	11.39	PPBV		97
77)	BROMOFORM	14.43	173	239101	11.42	PPBV		99
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	234447	10.64	PPBV		99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	184972	10.77	PPBV		95
81)	ISOPROPYLBENZENE	15.46	105	519454	10.23	PPBV		100
82)	2-CHLOROTOLUENE	16.04	126	122559	10.72	PPBV		100
83)	n-PROPYLBENZENE	16.05	120	134349	10.07	PPBV		99
84)	4-ETHYLTOLUENE	16.22	105	444717	10.16	PPBV		99
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	372500	10.11	PPBV		100
86)	tert-BUTYLBENZENE	16.79	134	94897	9.72	PPBV		99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	342315	10.38	PPBV		99
88)	m-DICHLOROBENZENE	17.01	146	216925	10.27	PPBV		99
89)	BENZYL CHLORIDE	17.00	91	225006	11.13	PPBV		98
90)	p-DICHLOROBENZENE	17.08	146	200359	9.97	PPBV		99
91)	sec-BUTYLBENZENE	17.11	134	109108	9.89	PPBV		94
92)	p-ISOPROPYLTOLUENE	17.29	134	107525	9.59	PPBV		99
93)	o-DICHLOROBENZENE	17.50	146	195150	10.19	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

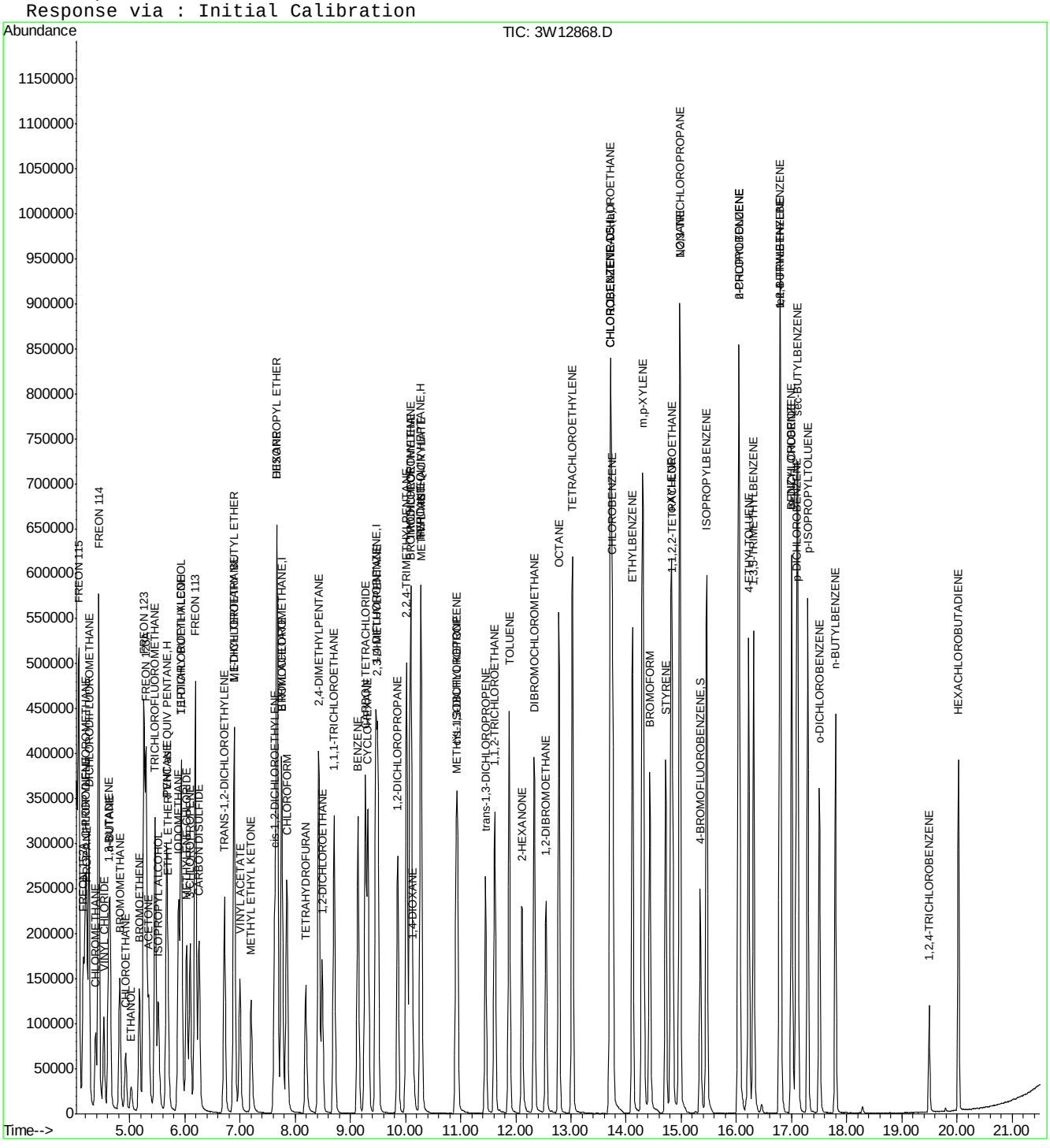
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	79800	10.92	PPBV	91
95)	HEXACHLOROBUTADIENE	20.03	225	86805	11.60	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.49	180	46397	12.71	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: M3W523.RES

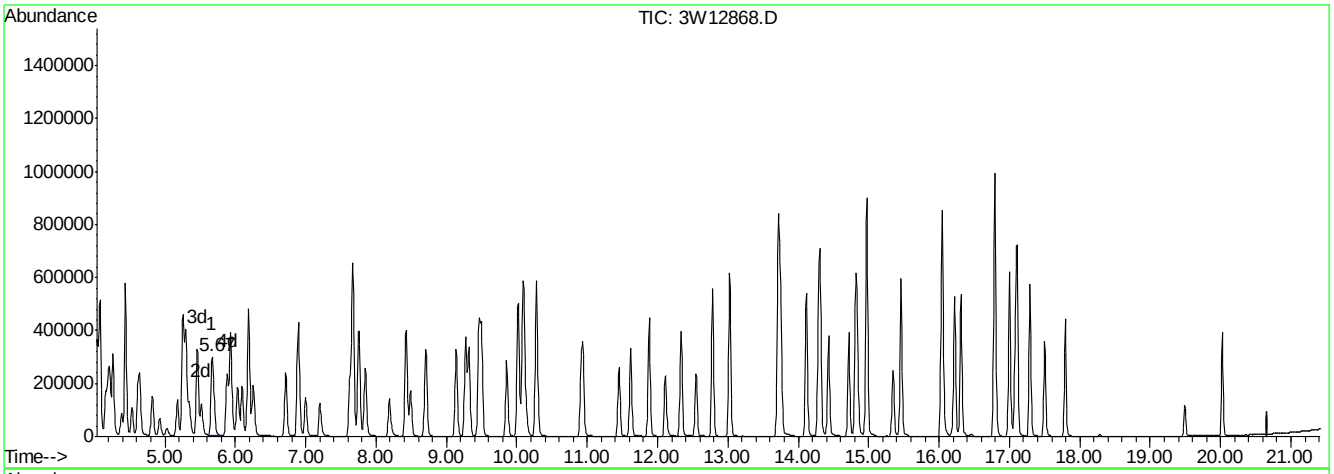
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

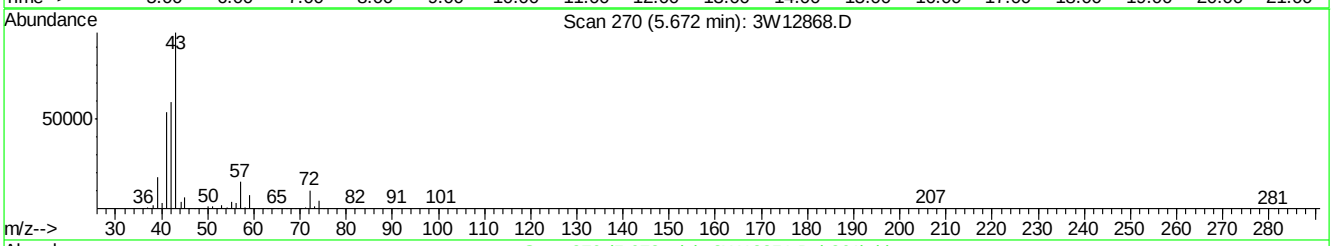


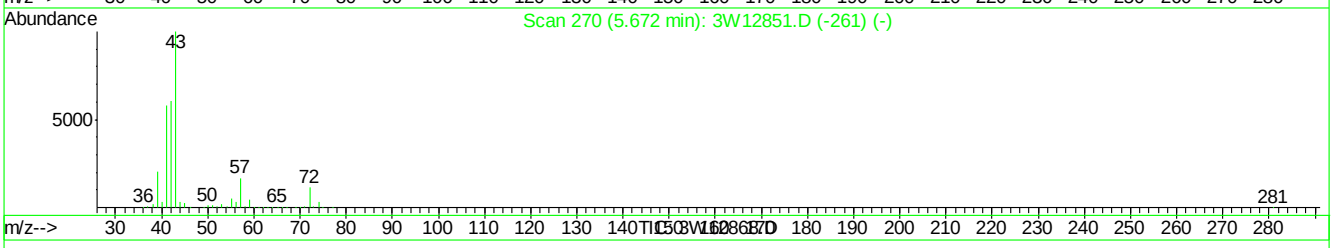
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.01PPBV m

response 892082

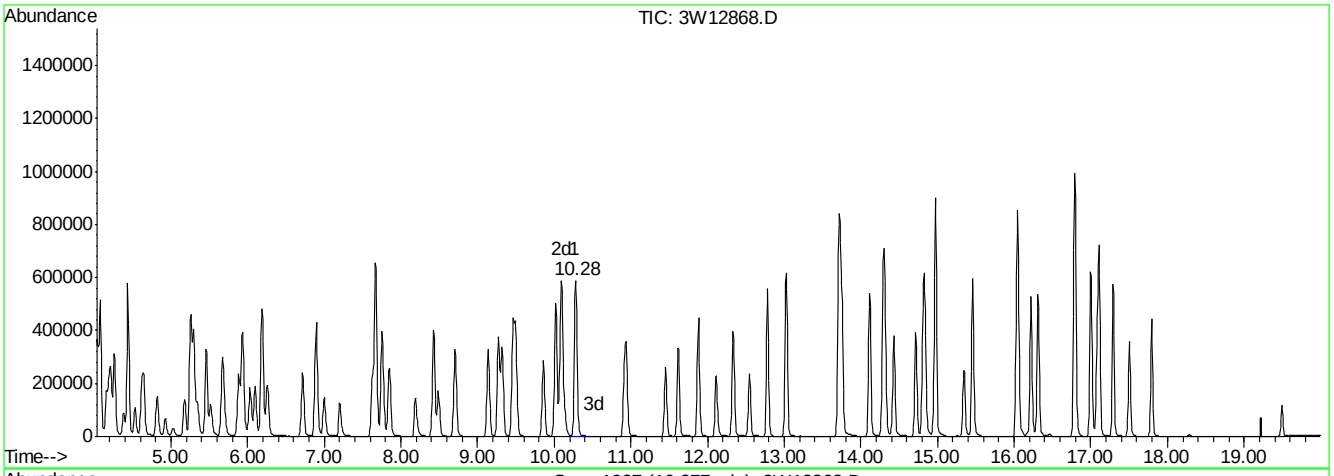
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:07 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 11.13PPBV m

response 1449604

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:10 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:53 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	96953	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	423905	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	198824	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	198824	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	106193	5.09	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.80%			
Target Compounds						Qvalue
2) FREON 115	4.07	85	261716	9.19	PPBV	96
3) FREON 152A	4.15	65	90589	10.10	PPBV	99
4) CHLORODIFLUOROMETHANE	4.19	67	39476	9.08	PPBV	97
5) DICHLORODIFLUOROMETHANE	4.25	85	376744	9.64	PPBV	100
6) PROPANE	4.22	43	48559	10.04	PPBV	100
7) PROPYLENE	4.21	41	148395	10.73	PPBV	98
8) FREON 114	4.43	85	400935	9.77	PPBV	98
9) CHLOROMETHANE	4.38	50	134403	9.51	PPBV	96
10) VINYL CHLORIDE	4.52	62	151071	10.74	PPBV	100
11) 1,3-BUTADIENE	4.61	54	110961	11.05	PPBV	97
12) n-BUTANE	4.64	43	234122	10.71	PPBV	99
13) BROMOMETHANE	4.81	94	142082	10.20	PPBV	100
14) CHLOROETHANE	4.92	64	81170	11.17	PPBV	99
15) FREON 123	5.25	83	323069	10.43	PPBV	99
16) FREON 123A	5.29	117	192202	9.89	PPBV	90
17) TRICHLOROFLUOROMETHANE	5.45	101	369519	9.46	PPBV	100
18) ISOPROPYL ALCOHOL	5.51	45	193570	10.51	PPBV	97
19) ACETONE	5.34	58	54252	9.94	PPBV	95
20) PENTANE	5.66	42	152006	11.49	PPBV	96
21) TVHC as EQUIV PENTANE	5.67	TIC	937681m	12.48	PPBV	
22) ETHYL ETHER	5.69	74	57035	10.65	PPBV	99
23) IODOMETHANE	5.88	142	373836	10.03	PPBV	97
24) 1,1-DICHLOROETHYLENE	5.92	96	127422	10.00	PPBV	99
25) CARBON DISULFIDE	6.25	76	394338	10.45	PPBV	100
26) ETHANOL	5.01	45	41593	9.49	PPBV	98
27) BROMOETHENE	5.17	106	140411	10.45	PPBV	99
28) METHYLENE CHLORIDE	6.02	84	113762	9.72	PPBV	95
29) 3-CHLOROPROPENE	6.09	76	58650	10.90	PPBV #	94
30) FREON 113	6.18	151	222445	9.72	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.71	96	133475	10.19	PPBV	96
32) TERTIARY BUTYL ALCOHOL	5.93	59	244634	11.39	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	6.88	73	312158	9.79	PPBV	97
34) TETRAHYDROFURAN	8.18	72	50256	10.77	PPBV	92
35) HEXANE	7.66	57	200651	11.36	PPBV	97
36) VINYL ACETATE	6.99	86	23797	10.94	PPBV #	74
37) 1,1-DICHLOROETHANE	6.89	63	246111	10.88	PPBV	98
38) METHYL ETHYL KETONE	7.19	72	48436	10.44	PPBV #	86
39) cis-1,2-DICHLOROETHYLENE	7.62	96	131871	10.19	PPBV	97
40) DIISOPROPYL ETHER	7.66	45	340878	11.26	PPBV	98
41) ETHYL ACETATE	7.75	61	29433	9.84	PPBV	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:53 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.84	83	272354	10.14	PPBV	99
43)	2,4-DIMETHYLPENTANE	8.42	57	225338	11.21	PPBV	99
44)	1,1,1-TRICHLOROETHANE	8.70	97	282669	9.81	PPBV	98
45)	CARBON TETRACHLORIDE	9.27	117	302556	10.06	PPBV	100
46)	1,2-DICHLOROETHANE	8.48	62	185699	10.59	PPBV	99
48)	BENZENE	9.13	78	391085	11.04	PPBV	99
49)	CYCLOHEXANE	9.32	56	201424	11.41	PPBV	92
50)	2,3-DIMETHYLPENTANE	9.49	71	84942	10.69	PPBV	98
51)	TRICHLOROETHYLENE	10.09	95	171174	10.67	PPBV	98
52)	1,2-DICHLOROPROPANE	9.85	63	137306	10.76	PPBV	94
53)	BROMODICHLOROMETHANE	10.08	83	280677	11.34	PPBV	100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	594615	11.39	PPBV	99
55)	1,4-DIOXANE	10.13	88	70258	10.05	PPBV	94
56)	HEPTANE	10.27	43	235034	11.34	PPBV	96
57)	TVHC as EQUIV HEPTANE	10.27	TIC	1497146m	11.22	PPBV	
58)	METHYL METHACRYLATE	10.28	69	101654	10.98	PPBV	91
59)	METHYL ISOBUTYL KETONE	10.91	43	227412	11.90	PPBV	97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	205930	11.50	PPBV	100
61)	TOLUENE	11.88	92	257616	10.94	PPBV	99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	192282	11.63	PPBV	98
63)	1,1,2-TRICHLOROETHANE	11.62	83	122944	11.36	PPBV	98
65)	2-HEXANONE	12.11	43	206417	12.09	PPBV	98
66)	TETRACHLOROETHYLENE	13.03	164	201061	9.61	PPBV	98
67)	DIBROMOCHLOROMETHANE	12.33	129	280008	11.59	PPBV	100
68)	1,2-DIBROMOETHANE	12.55	107	214732	11.23	PPBV	99
69)	OCTANE	12.78	43	302219	11.46	PPBV	95
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	196838	9.90	PPBV	99
71)	CHLOROBENZENE	13.76	112	333219	10.40	PPBV	98
72)	ETHYLBENZENE	14.12	91	513319	10.52	PPBV	99
73)	m,p-XYLENE	14.30	106	386194	20.90	PPBV	100
74)	o-XYLENE	14.82	106	184476	10.49	PPBV	99
75)	STYRENE	14.72	104	257115	11.42	PPBV	100
76)	NONANE	14.97	43	279021	11.49	PPBV	97
77)	BROMOFORM	14.43	173	245766	11.52	PPBV	100
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	235305	10.47	PPBV	99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	185188	10.58	PPBV	95
81)	ISOPROPYLBENZENE	15.46	105	519559	10.04	PPBV	100
82)	2-CHLOROTOLUENE	16.04	126	125217	10.74	PPBV	99
83)	n-PROPYLBENZENE	16.05	120	134289	9.87	PPBV	100
84)	4-ETHYLTOLUENE	16.22	105	440954	9.88	PPBV	100
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	370862	9.87	PPBV	100
86)	tert-BUTYLBENZENE	16.79	134	93910	9.43	PPBV	99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	341407	10.15	PPBV	99
88)	m-DICHLOROBENZENE	17.01	146	220656	10.24	PPBV	99
89)	BENZYL CHLORIDE	17.00	91	225025	10.92	PPBV	99
90)	p-DICHLOROBENZENE	17.08	146	205000	10.00	PPBV	99
91)	sec-BUTYLBENZENE	17.11	134	108674	9.66	PPBV	94
92)	p-ISOPROPYLTOLUENE	17.29	134	106918	9.35	PPBV	99
93)	o-DICHLOROBENZENE	17.50	146	196469	10.07	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:53 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

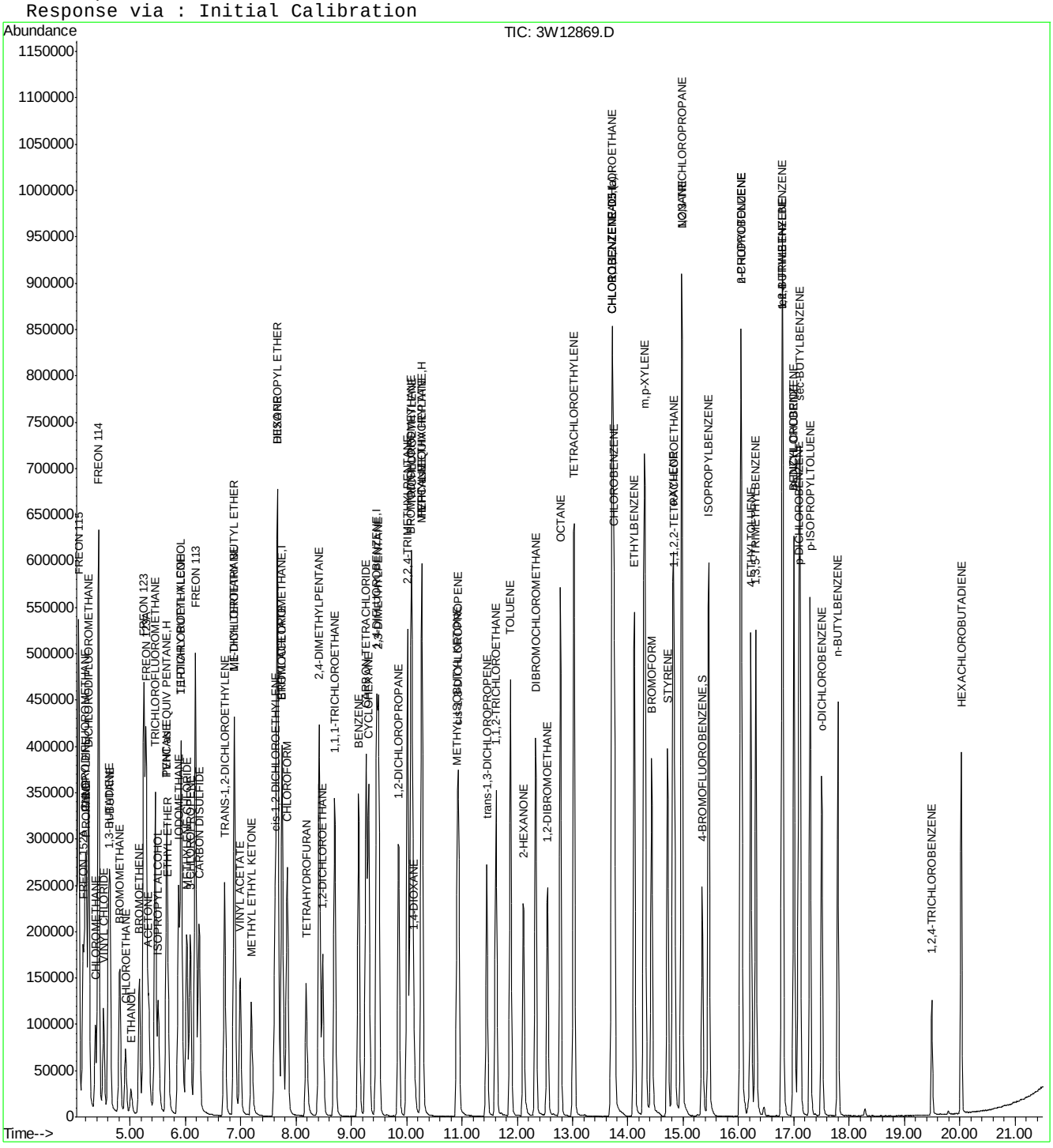
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	80588	10.81	PPBV	93
95)	HEXACHLOROBUTADIENE	20.03	225	88078	11.55	PPBV	99
96)	1,2,4-TRICHLOROBENZENE	19.49	180	48912	13.14	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

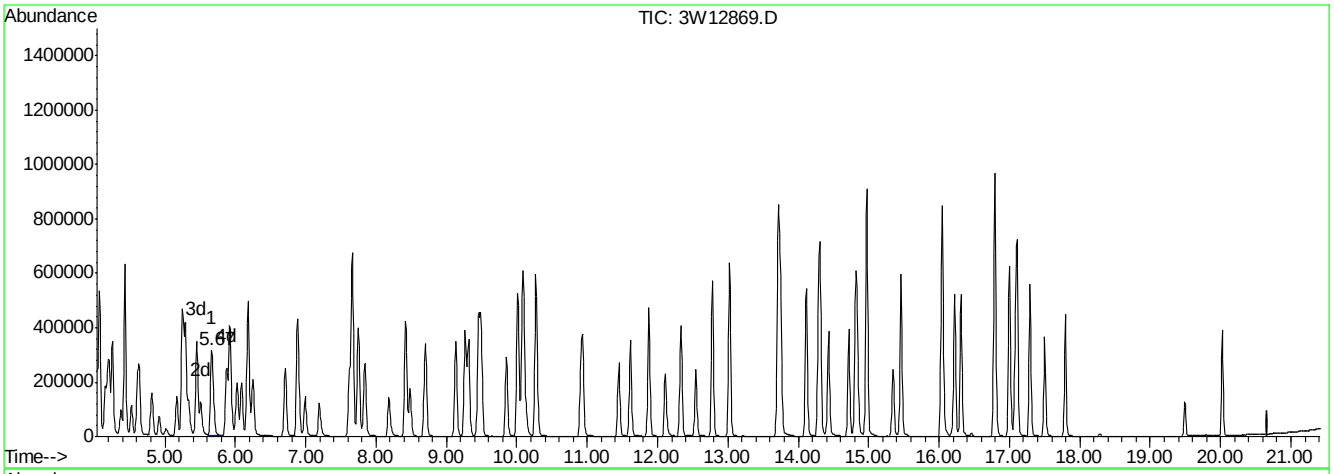


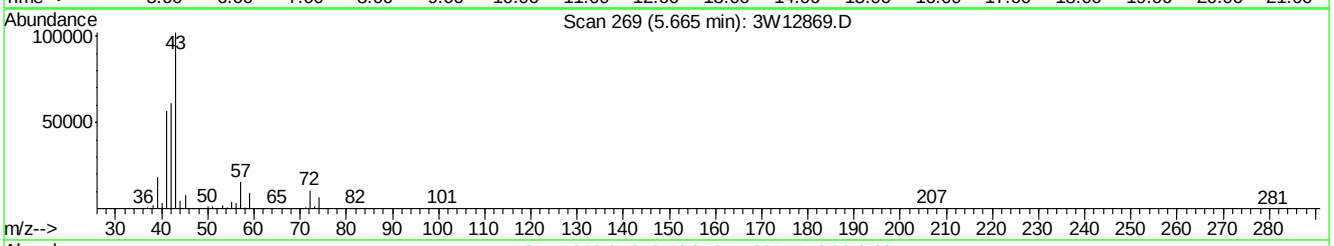
ACCUTEST Laboratories JA28238

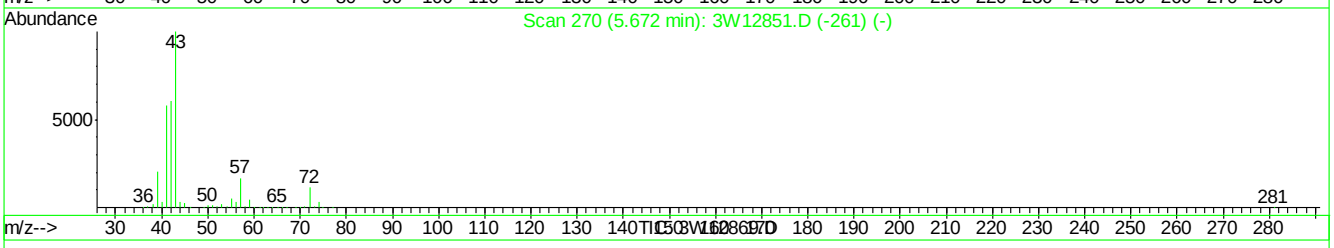
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.48PPBV m

response 937681

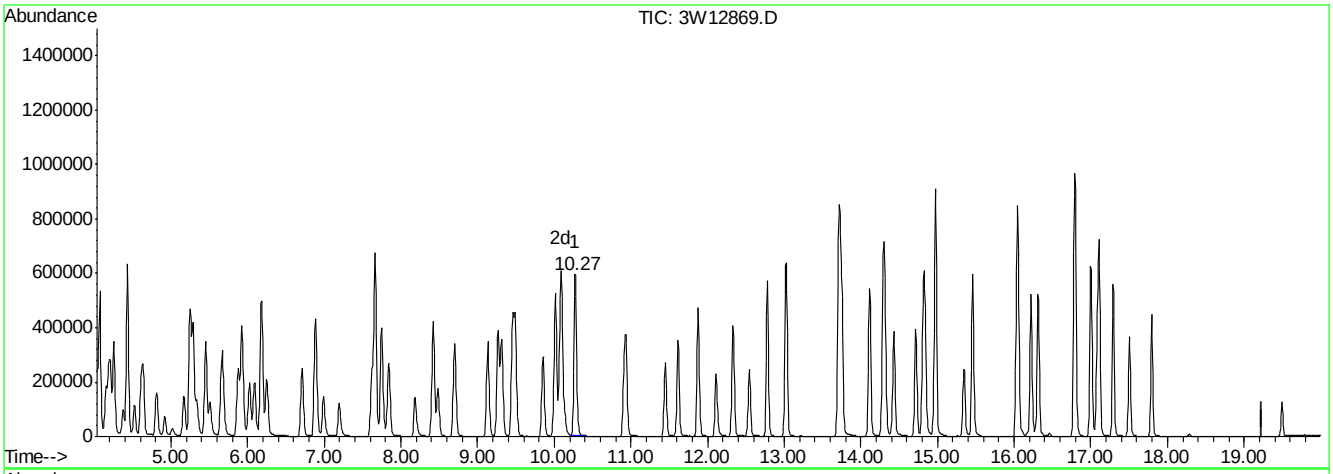
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12869.D M3W523.M Tue Oct 06 13:02:47 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.27min 11.22PPBV m

response 1497146

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12869.D M3W523.M Tue Oct 06 13:02:49 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25722.D Vial: 14
Acq On : 28 Sep 2009 10:18 pm Operator: YOUMINH
Sample : JA28271-5DUP Inst : MS2W
Misc : MS86173,V2W1083,20,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:49 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

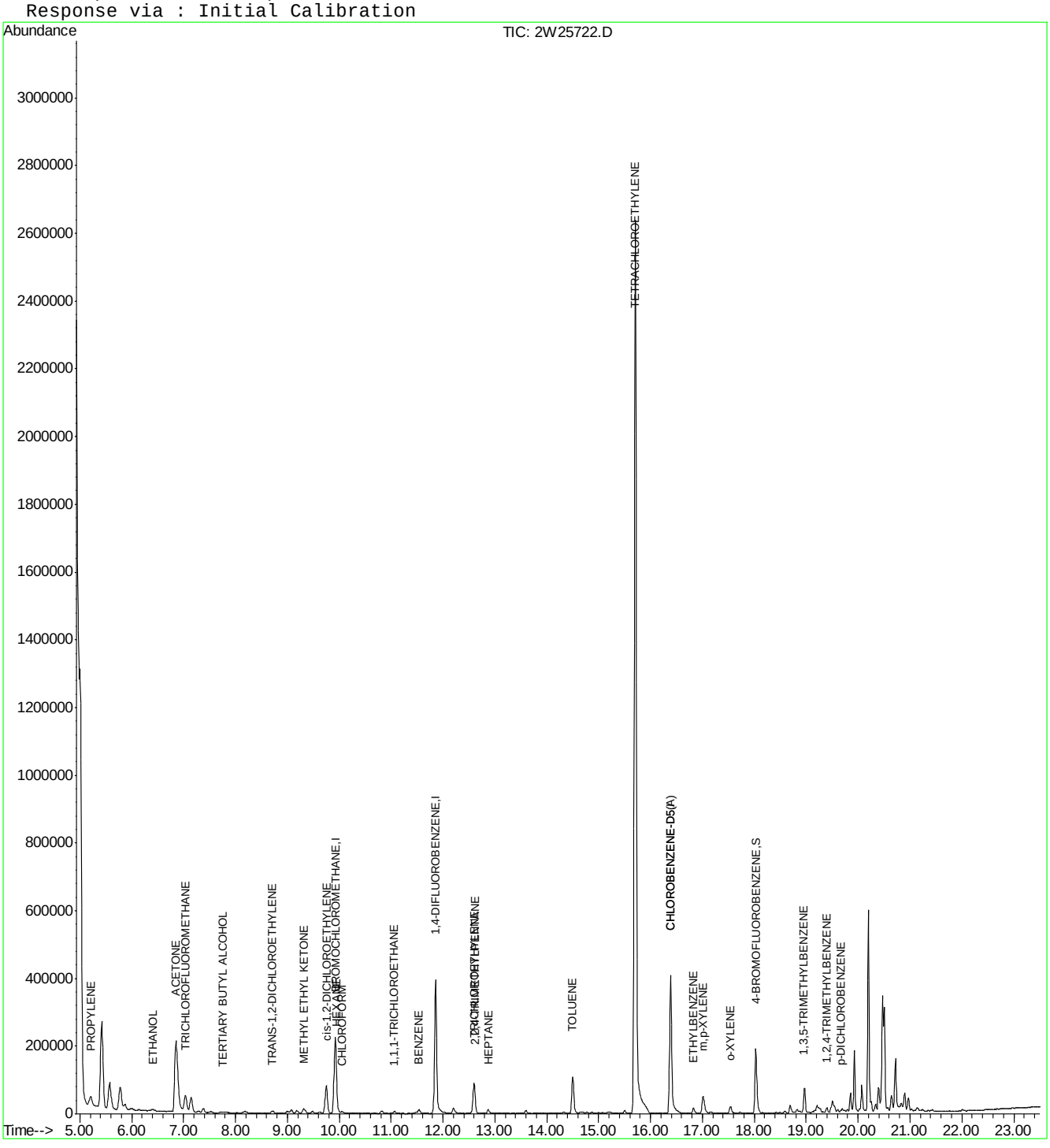
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	99702	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	489473	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	213737	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	213915	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.03	95	99527	4.52	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 90.40%			
Target Compounds						Qvalue
6) PROPYLENE	5.21	41	28533	2.18	PPBV	90
17) TRICHLOROFLUOROMETHANE	7.03	101	66846	2.19	PPBV	97
19) ACETONE	6.85	58	182518	26.69	PPBV #	88
26) ETHANOL	6.41	45	13575	2.91	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.72	96	4846	0.33	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.75	59	3602	0.17	PPBV #	54
35) HEXANE	9.95	57	9194	0.51	PPBV	95
38) METHYL ETHYL KETONE	9.32	72	9176	1.60	PPBV #	75
39) cis-1,2-DICHLOROETHYLENE	9.75	96	60198	4.12	PPBV	95
41) CHLOROFORM	10.05	83	3556	0.15	PPBV	95
43) 1,1,1-TRICHLOROETHANE	11.06	97	5304	0.21	PPBV	96
47) BENZENE	11.54	78	14918	0.33	PPBV	99
50) TRICHLOROETHYLENE	12.59	95	43395	2.46	PPBV	94
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	7391	0.13	PPBV #	80
56) HEPTANE	12.87	43	7331	0.34	PPBV	90
60) TOLUENE	14.50	92	72896	2.48	PPBV	95
65) TETRACHLOROETHYLENE	15.70	164	1022748	54.10	PPBV	94
71) ETHYLBENZENE	16.83	91	20043	0.40	PPBV	96
72) m,p-XYLENE	17.01	106	27936	1.45	PPBV	88
73) o-XYLENE	17.53	106	8397	0.47	PPBV	91
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	3327	0.12	PPBV #	89
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	9091	0.40	PPBV #	27
88) p-DICHLOROBENZENE	19.66	146	2519	0.20	PPBV	89

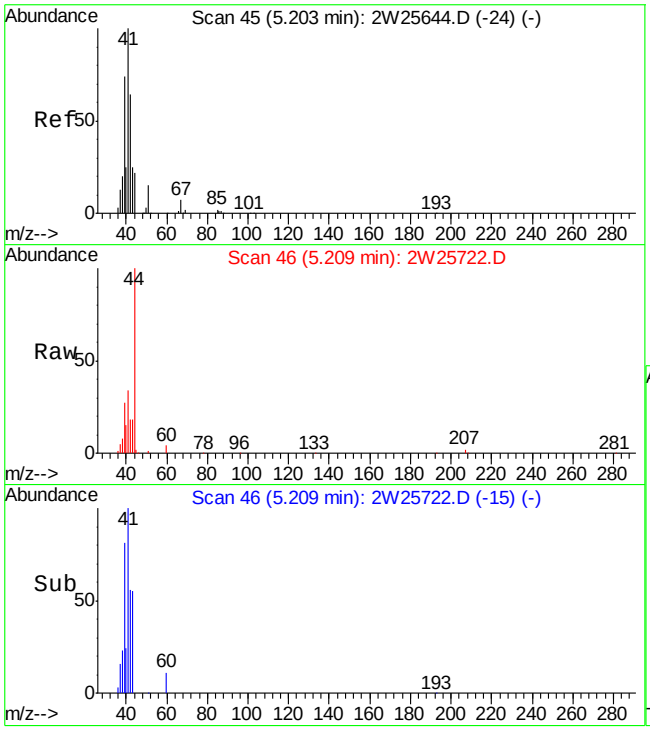
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25722.D Vial: 14
Acq On : 28 Sep 2009 10:18 pm Operator: YOUMINH
Sample : JA28271-5DUP Inst : MS2W
Misc : MS86173,V2W1083,20,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 10:36 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

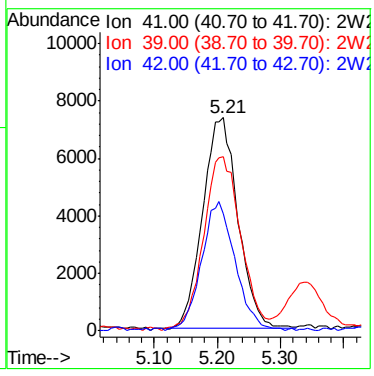


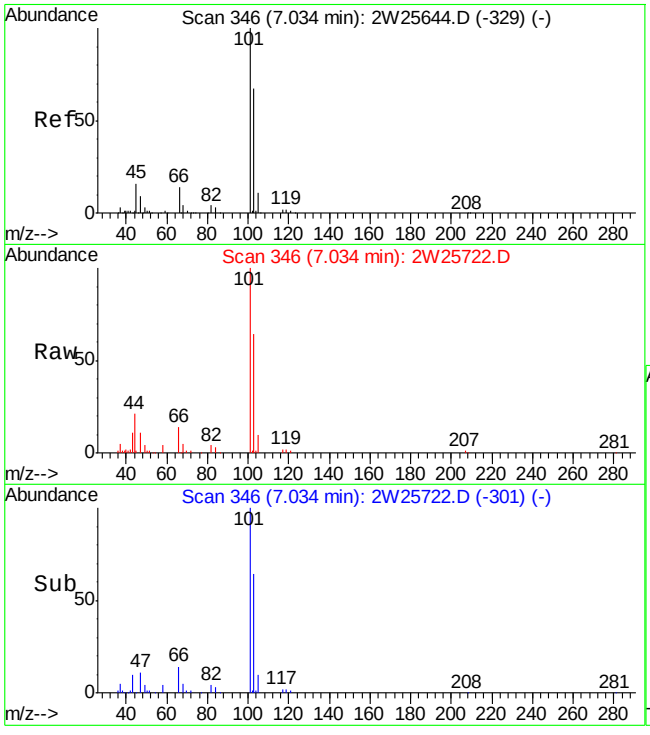


#6
PROPYLENE
Concen: 2.18 PPBV
RT: 5.21 min Scan# 46
Delta R.T. 0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 41 Resp: 28533

Ion	Ratio	Lower	Upper
41	100		
39	81.6	54.1	94.1
42	54.9	43.7	83.7

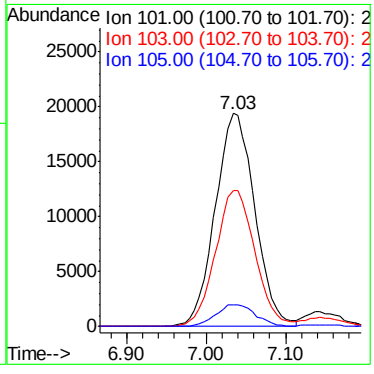


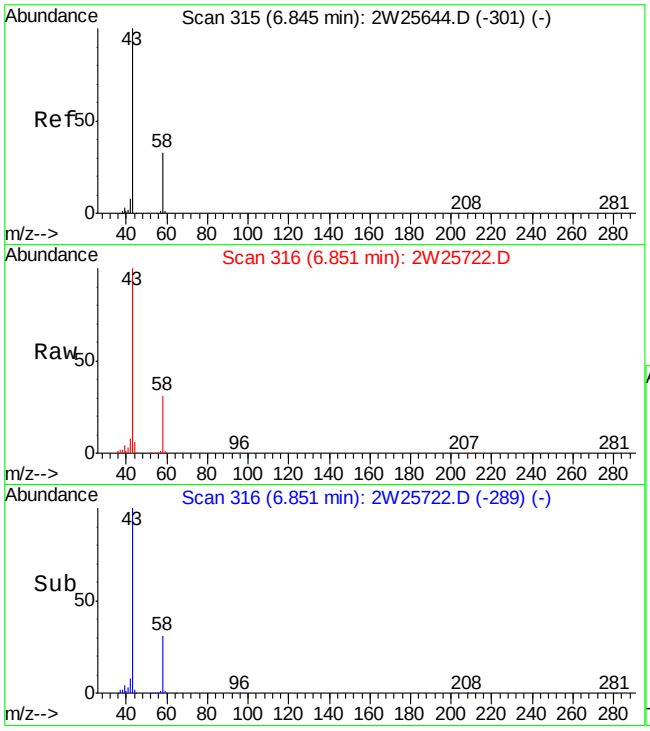


#17
TRICHLOROFLUOROMETHANE
Concen: 2.19 PPBV
RT: 7.03 min Scan# 346
Delta R.T. 0.00 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion:101 Resp: 66846

Ion	Ratio	Lower	Upper
101	100		
103	63.7	46.0	86.0
105	10.4	0.0	30.8

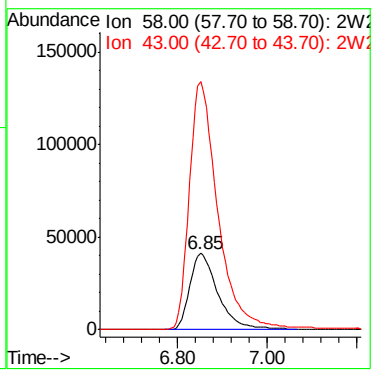


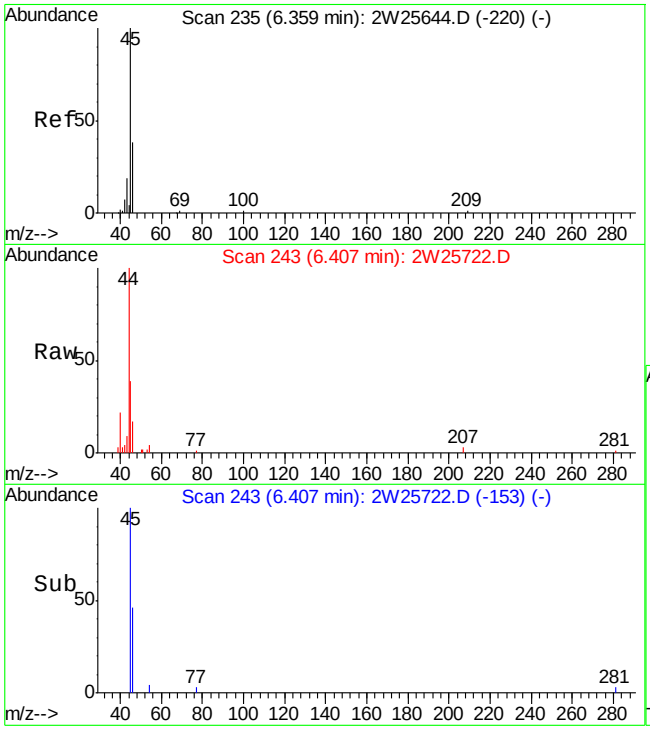


#19
ACETONE
Concen: 26.69 PPBV
RT: 6.85 min Scan# 316
Delta R.T. 0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 58 Resp: 182518

Ion	Ratio	Lower	Upper
58	100		
43	327.7	284.9	324.9#

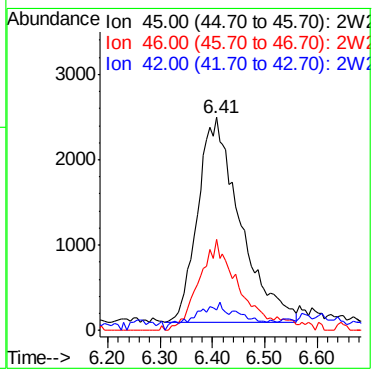


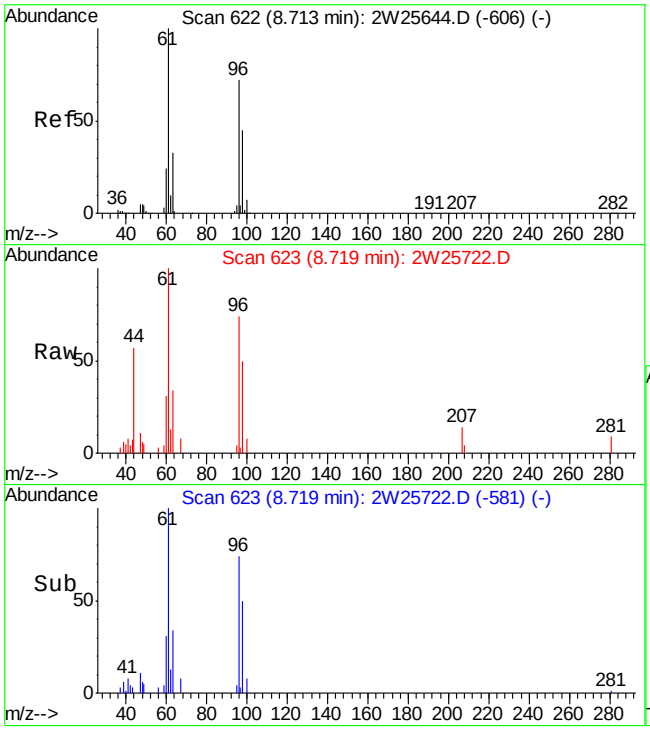


#26
ETHANOL
Concen: 2.91 PPBV
RT: 6.41 min Scan# 243
Delta R.T. 0.05 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 45 Resp: 13575

Ion	Ratio	Lower	Upper
45	100		
46	40.2	19.4	59.4
42	9.9	0.0	28.5

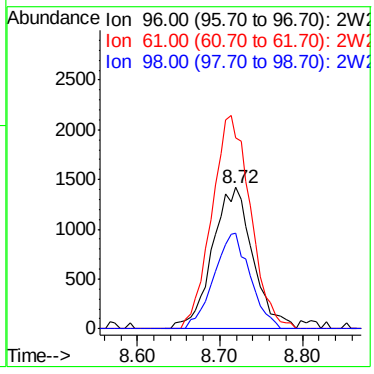


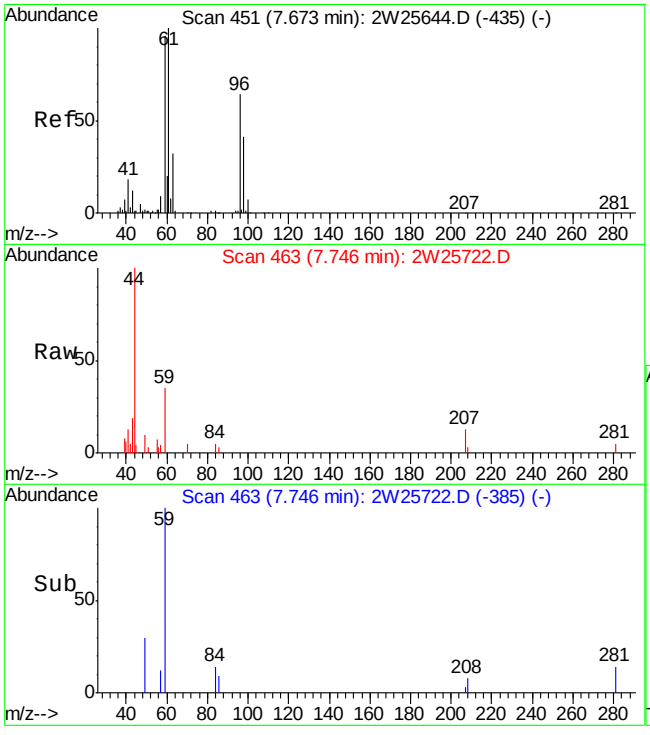


#31
TRANS-1,2-DICHLOROETHYLENE
Concen: 0.33 PPBV
RT: 8.72 min Scan# 623
Delta R.T. 0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 96 Resp: 4846

Ion	Ratio	Lower	Upper
96	100		
61	144.5	121.2	161.2
98	60.8	44.4	84.4

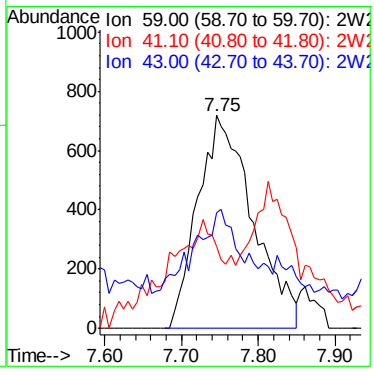


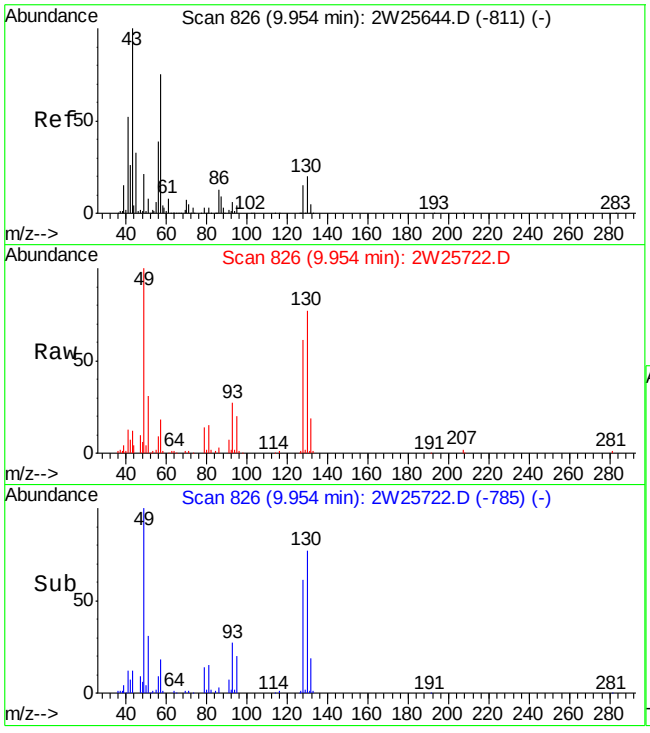


#32
TERTIARY BUTYL ALCOHOL
Concen: 0.17 PPBV
RT: 7.75 min Scan# 463
Delta R.T. 0.07 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 59 Resp: 3602

Ion	Ratio	Lower	Upper
59	100		
41	0.0	0.3	40.3#
43	32.5	0.0	32.7

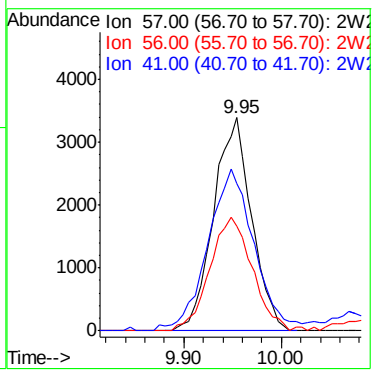


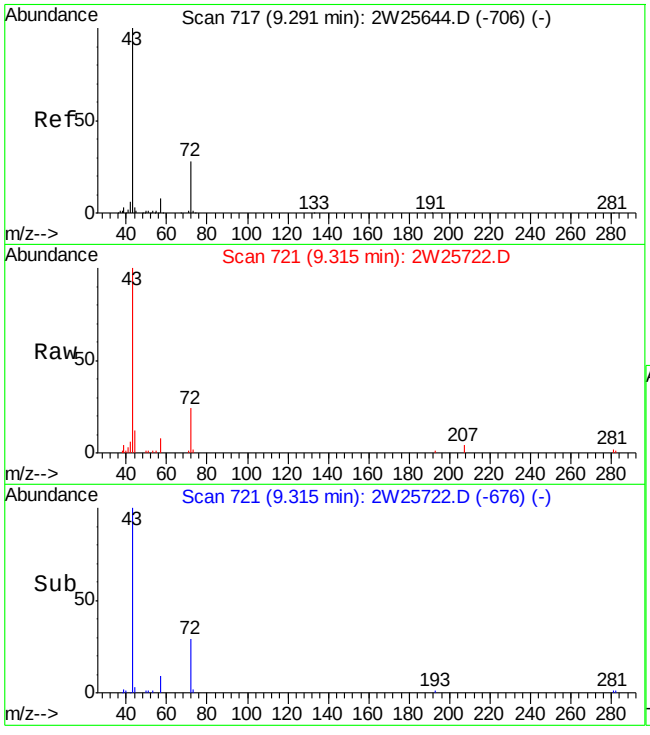


#35
HEXANE
Concen: 0.51 PPBV
RT: 9.95 min Scan# 826
Delta R.T. 0.00 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 57 Resp: 9194

Ion	Ratio	Lower	Upper
57	100		
56	59.9	31.3	71.3
41	91.9	72.4	112.4

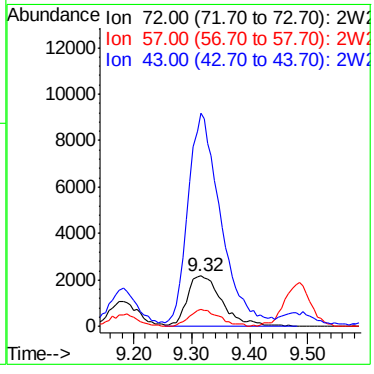


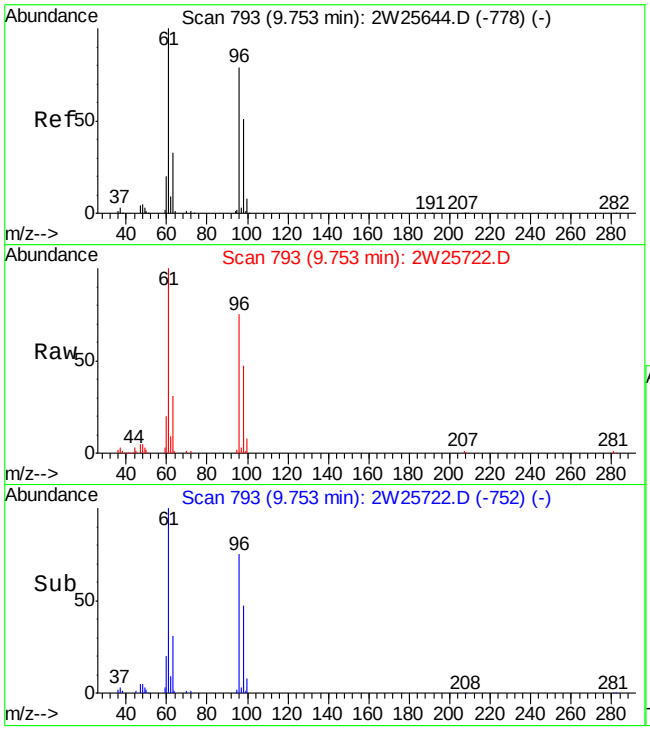


#38
METHYL ETHYL KETONE
Concen: 1.60 PPBV
RT: 9.32 min Scan# 721
Delta R.T. 0.02 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 72 Resp: 9176

Ion	Ratio	Lower	Upper
72	100		
57	34.9	9.4	49.4
43	421.4	343.3	383.3#

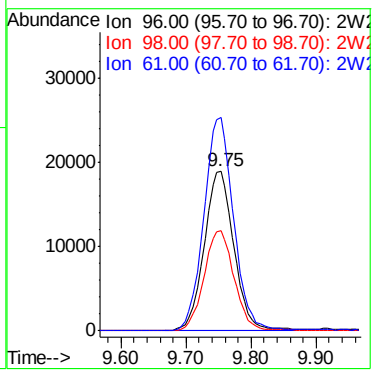


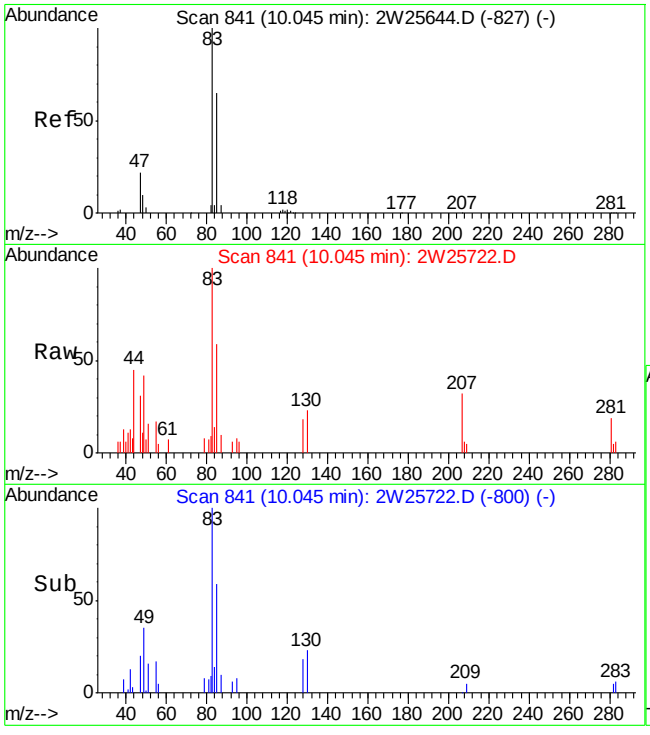


#39
cis-1,2-DICHLOROETHYLENE
Concen: 4.12 PPBV
RT: 9.75 min Scan# 793
Delta R.T. 0.00 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 96 Resp: 60198

Ion	Ratio	Lower	Upper
96	100		
98	63.4	44.8	84.8
61	134.9	107.9	147.9

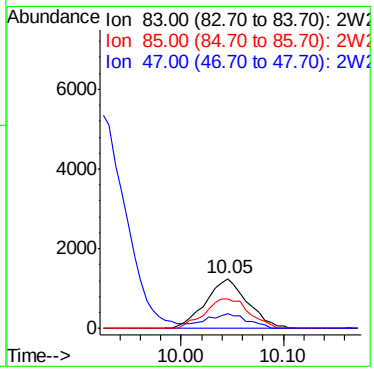


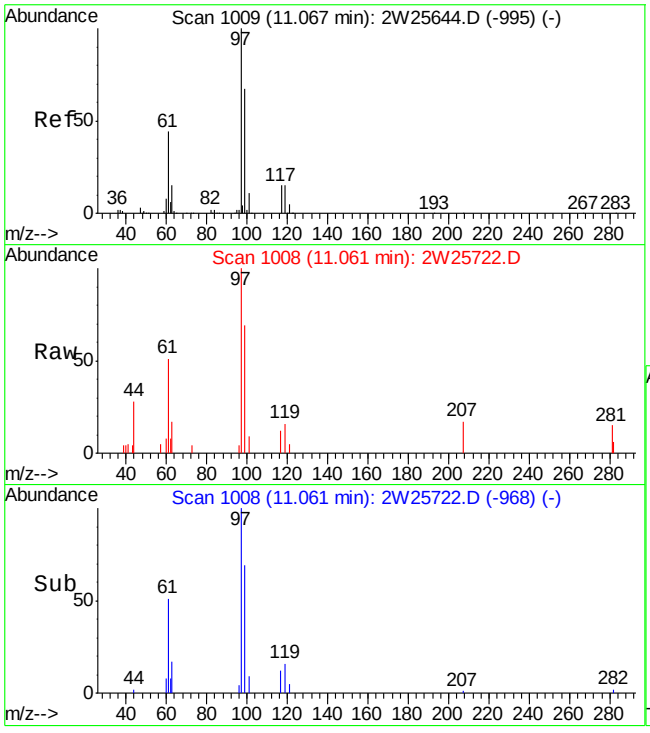


#41
CHLOROFORM
Concen: 0.15 PPBV
RT: 10.05 min Scan# 841
Delta R.T. 0.00 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 83 Resp: 3556

Ion	Ratio	Lower	Upper
83	100		
85	63.1	45.8	85.8
47	28.7	3.3	43.3

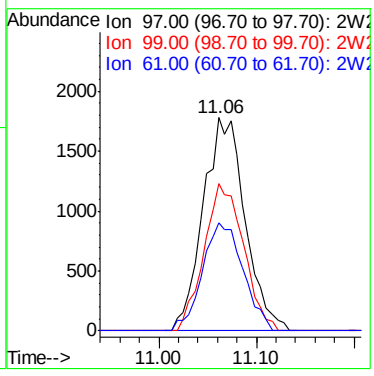


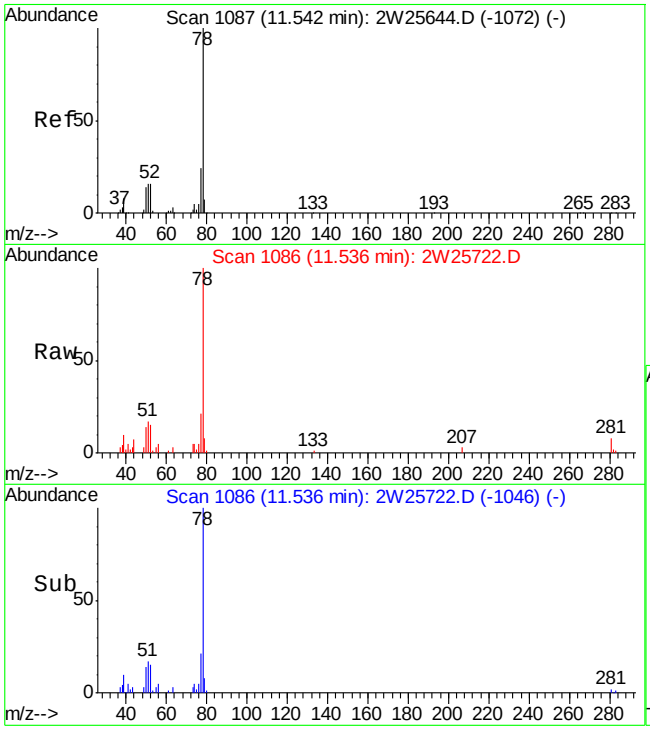


#43
1,1,1-TRICHLOROETHANE
Concen: 0.21 PPBV
RT: 11.06 min Scan# 1008
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 97 Resp: 5304

Ion	Ratio	Lower	Upper
97	100		
99	64.9	45.7	85.7
61	49.2	24.3	64.3

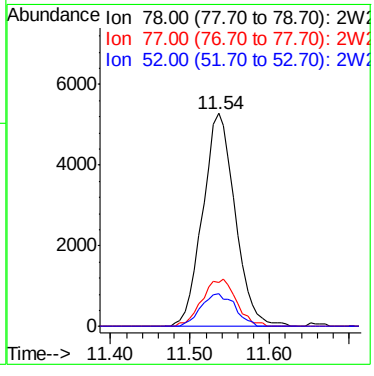




#47
BENZENE
Concen: 0.33 PPBV
RT: 11.54 min Scan# 1086
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

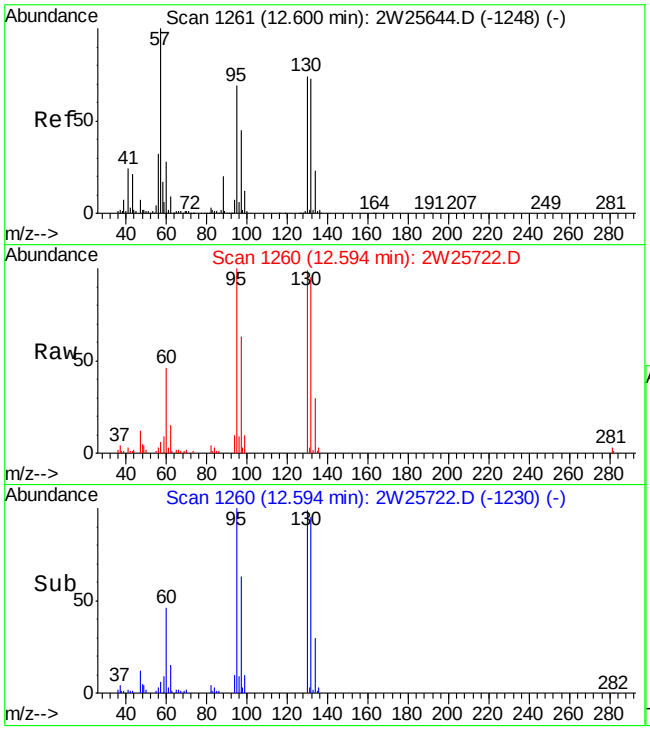
Tgt Ion: 78 Resp: 14918

Ion	Ratio	Lower	Upper
78	100		
77	23.5	3.8	43.8
52	16.2	0.0	35.8



6.4.1

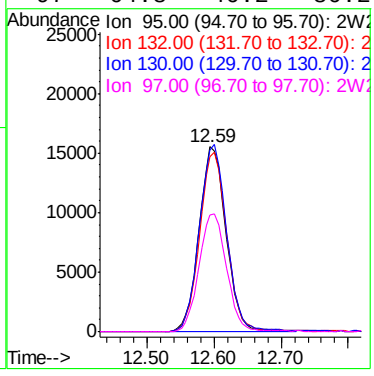
6

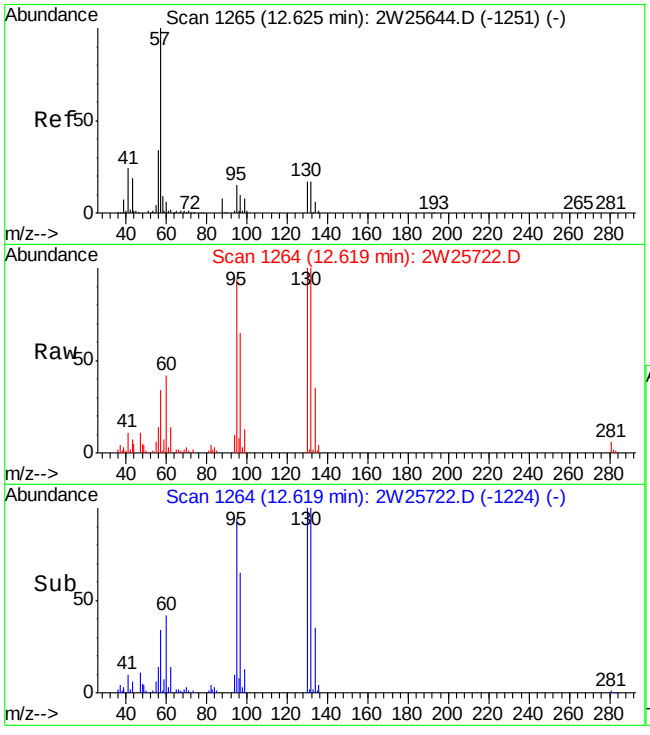


#50
TRICHLOROETHYLENE
Concen: 2.46 PPBV
RT: 12.59 min Scan# 1260
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 95 Resp: 43395

Ion	Ratio	Lower	Upper
95	100		
132	96.8	85.5	125.5
130	101.9	89.0	129.0
97	64.8	46.2	86.2

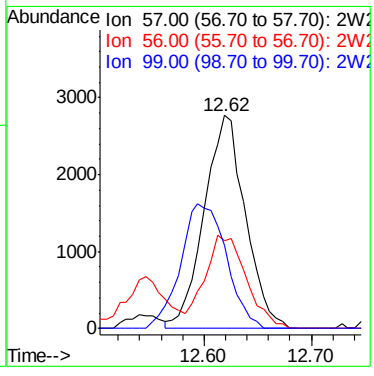


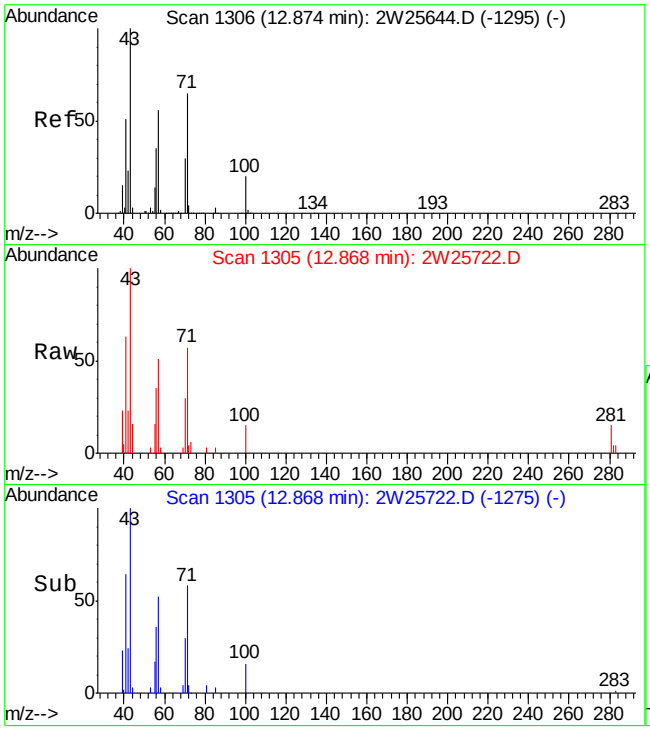


#53
2,2,4-TRIMETHYLPENTANE
Concen: 0.13 PPBV
RT: 12.62 min Scan# 1264
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 57 Resp: 7391

Ion	Ratio	Lower	Upper
57	100		
56	44.0	13.2	53.2
99	0.0	0.0	28.8

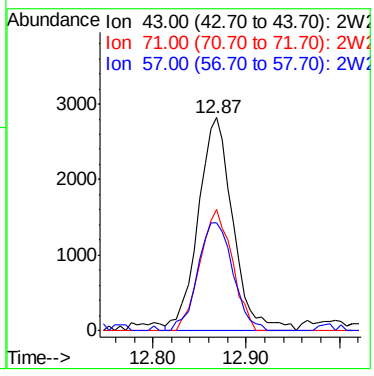


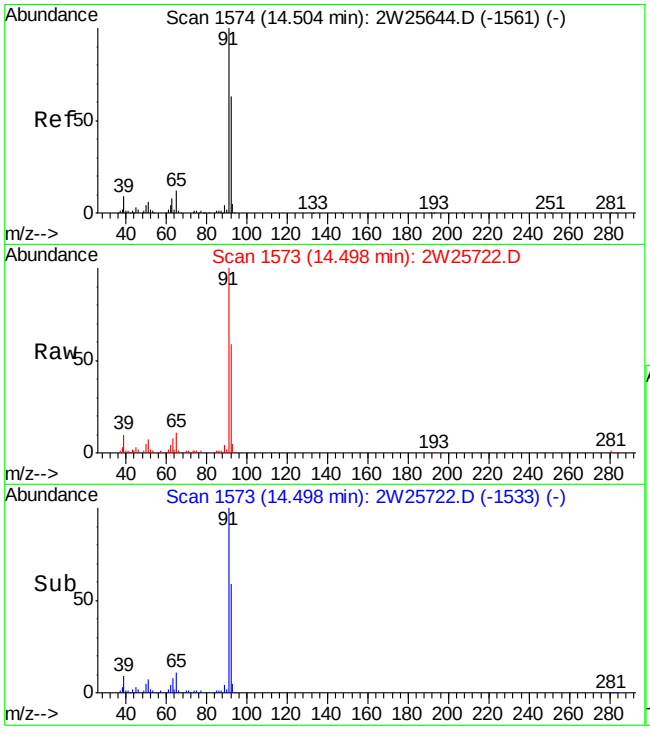


#56
HEPTANE
Concen: 0.34 PPBV
RT: 12.87 min Scan# 1305
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 43 Resp: 7331

Ion	Ratio	Lower	Upper
43	100		
71	52.7	44.0	84.0
57	51.5	35.5	75.5

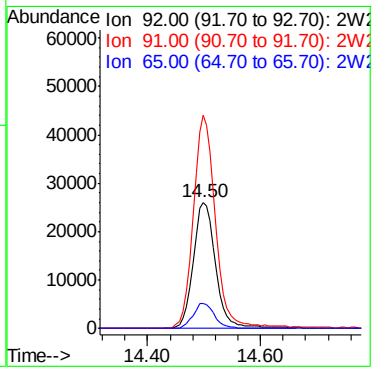


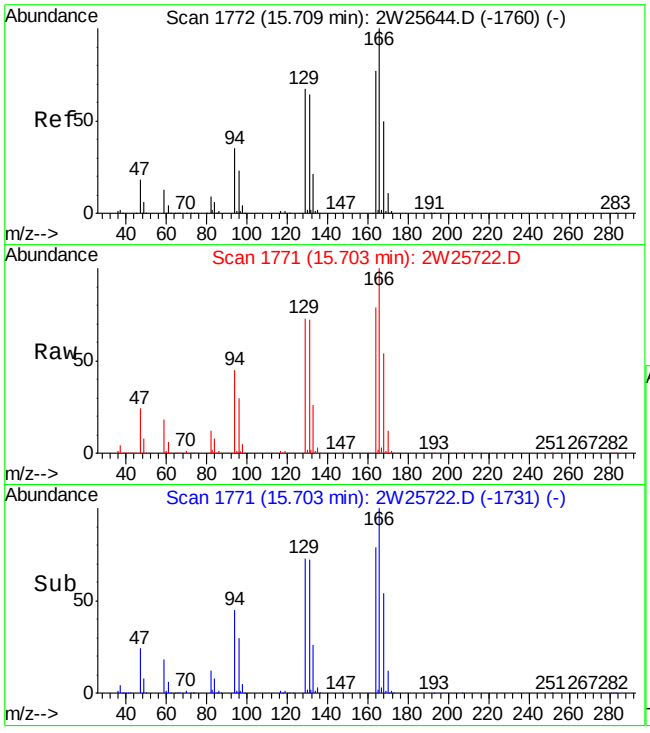


#60
TOLUENE
Concen: 2.48 PPBV
RT: 14.50 min Scan# 1573
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 92 Resp: 72896

Ion	Ratio	Lower	Upper
92	100		
91	167.2	140.7	180.7
65	19.4	0.0	38.6

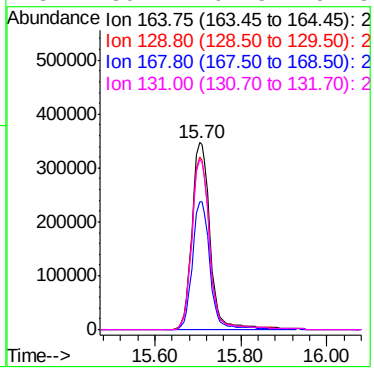


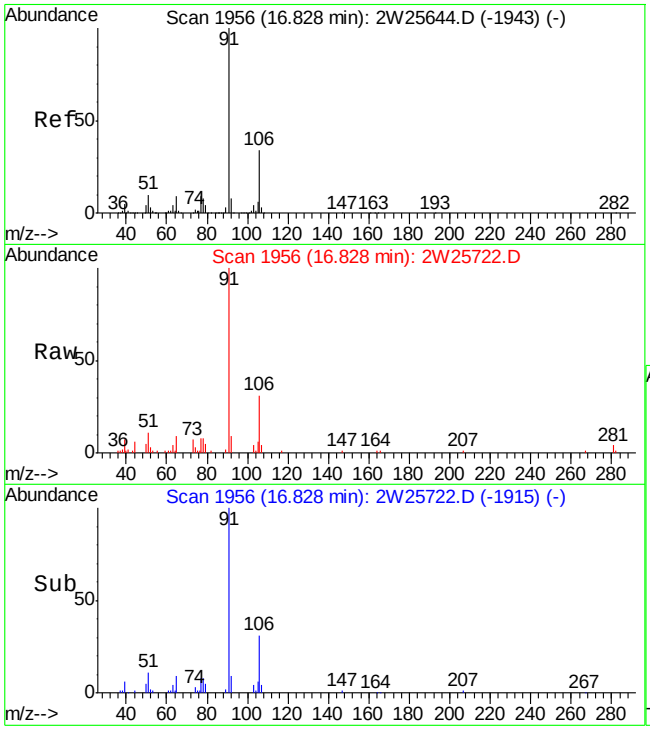


#65
TETRACHLOROETHYLENE
Concen: 54.10 PPBV
RT: 15.70 min Scan# 1771
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion:164 Resp: 1022748

Ion	Ratio	Lower	Upper
164	100		
129	91.4	65.6	105.6
168	66.7	43.4	83.4
131	89.7	62.3	102.3

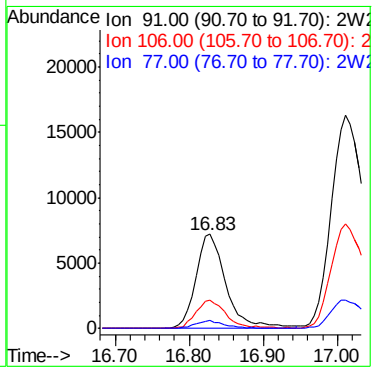


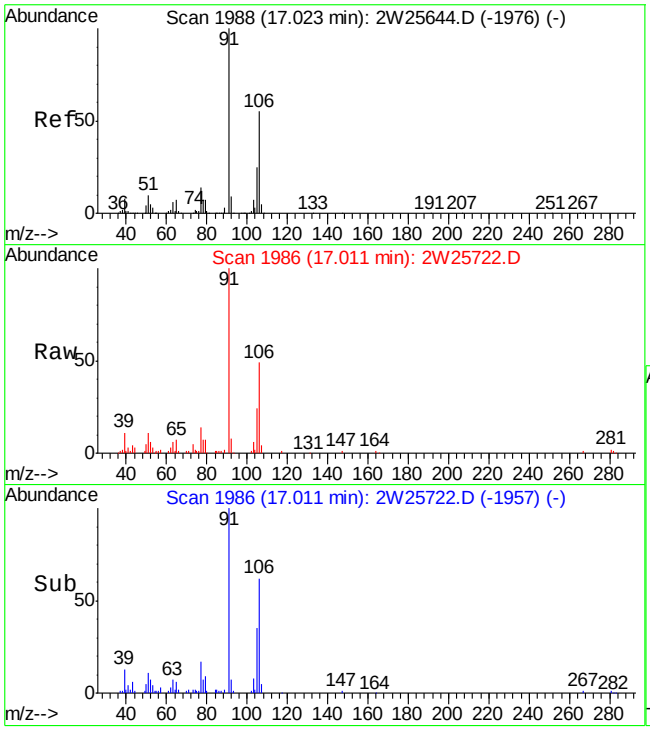


#71
ETHYLBENZENE
Concen: 0.40 PPBV
RT: 16.83 min Scan# 1956
Delta R.T. 0.00 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion: 91 Resp: 20043

Ion	Ratio	Lower	Upper
91	100		
106	30.5	13.0	53.0
77	8.2	0.0	28.8

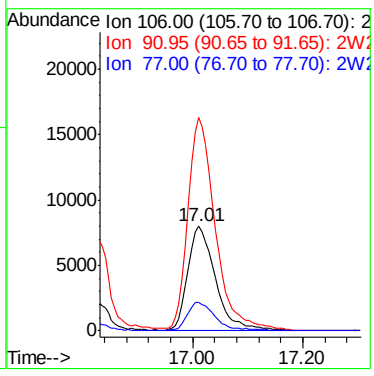


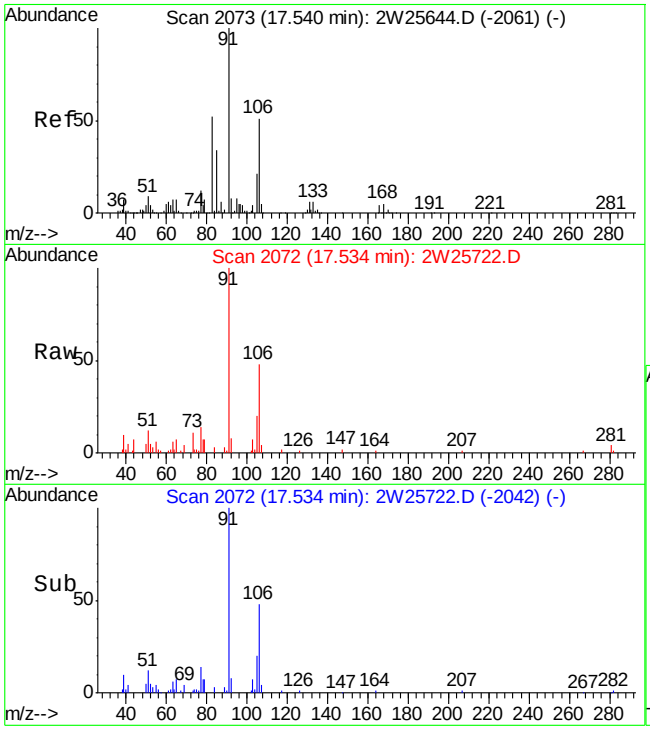


#72
m,p-XYLENE
Concen: 1.45 PPBV
RT: 17.01 min Scan# 1986
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion:106 Resp: 27936

Ion	Ratio	Lower	Upper
106	100		
91	203.6	147.4	221.2
77	27.6	20.5	30.7

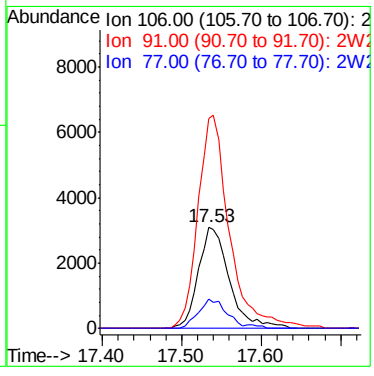


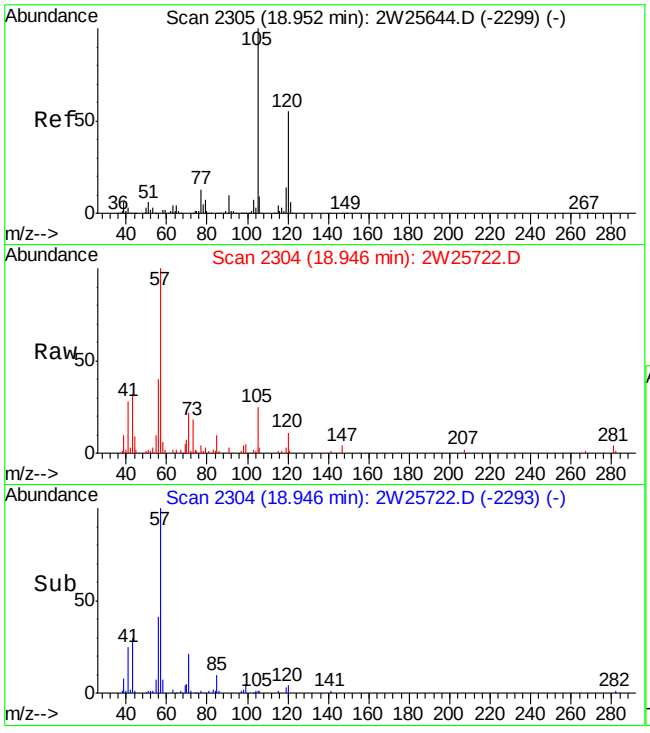


#73
o-XYLENE
Concen: 0.47 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion:106 Resp: 8397

Ion	Ratio	Lower	Upper
106	100		
91	213.8	179.7	219.7
77	28.0	5.4	45.4

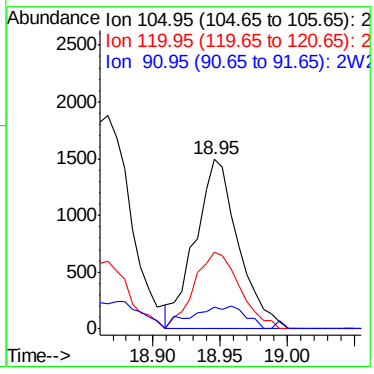


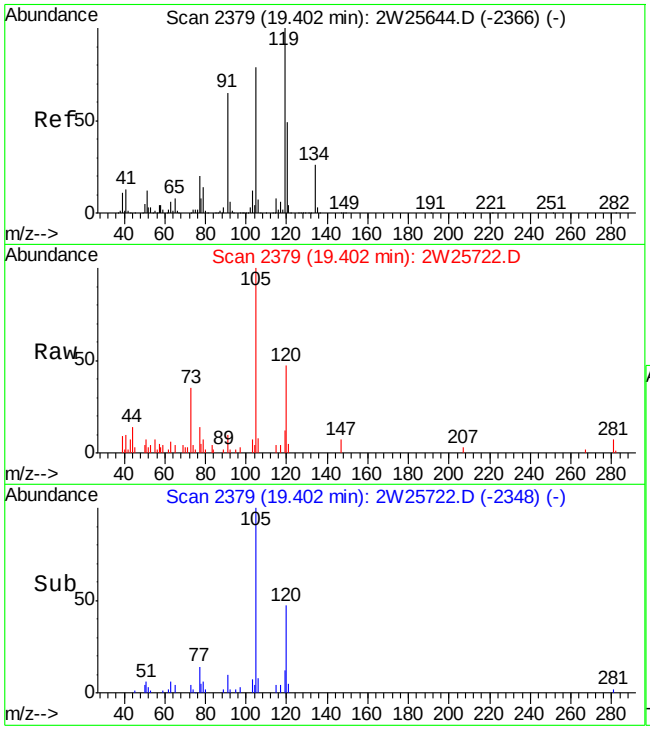


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.12 PPBV
RT: 18.95 min Scan# 2304
Delta R.T. -0.01 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion:105 Resp: 3327

Ion	Ratio	Lower	Upper
105	100		
120	47.8	33.8	73.8
91	0.0	0.0	30.1

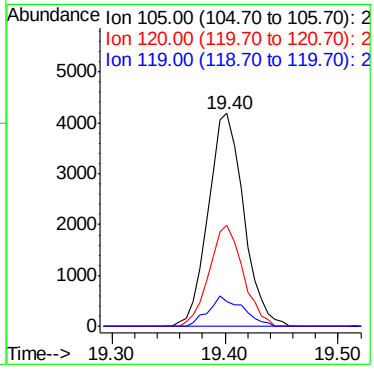


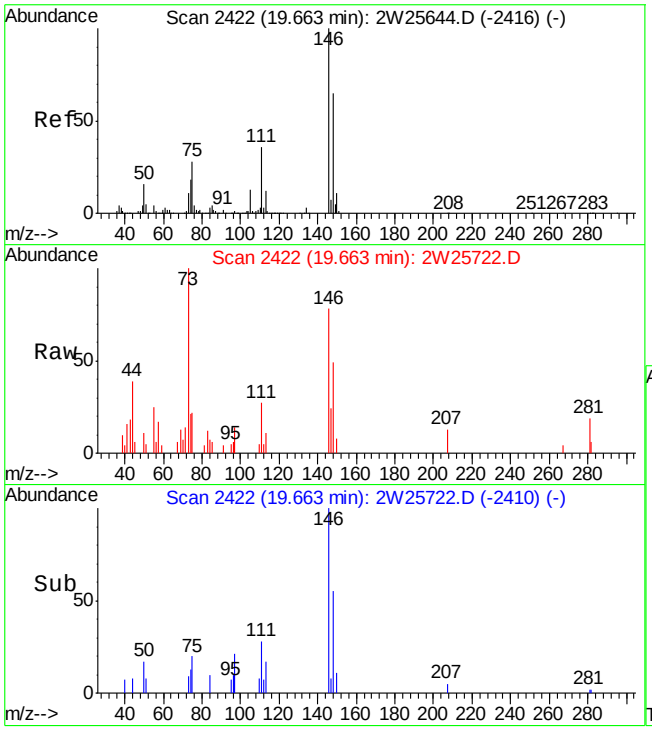


#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.40 PPBV
RT: 19.40 min Scan# 2379
Delta R.T. 0.00 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion:105 Resp: 9091

Ion	Ratio	Lower	Upper
105	100		
120	45.3	41.7	81.7
119	14.0	106.1	146.1#

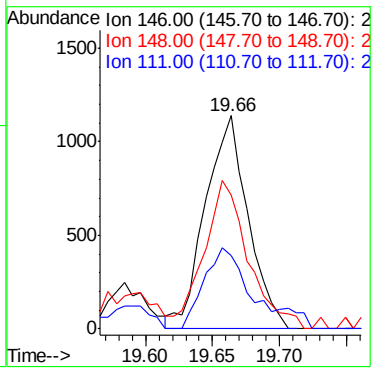




#88
p-DICHLOROBENZENE
Concen: 0.20 PPBV
RT: 19.66 min Scan# 2422
Delta R.T. 0.00 min
Lab File: 2W25722.D
Acq: 28 Sep 2009 10:18 pm

Tgt Ion:146 Resp: 2519

Ion	Ratio	Lower	Upper
146	100		
148	71.7	44.5	84.5
111	43.7	15.7	55.7



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25751.d
Acq On : 29 Sep 2009 11:27 pm
Operator : YOUMINH
Sample : JA28598-2DUP
Misc : MS86333,V2W1084,100,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 30 11:44:04 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

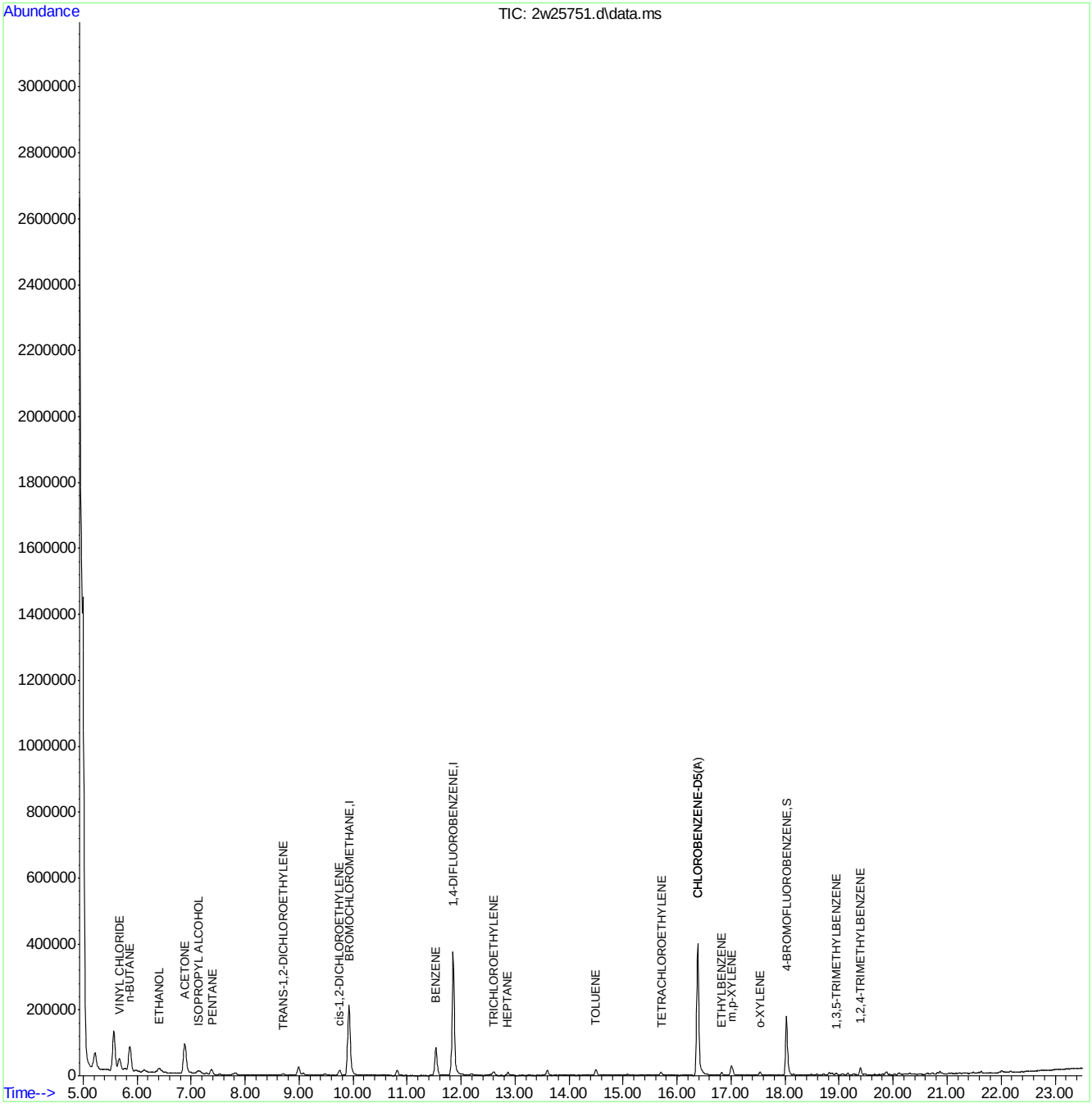
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.924	128	101564	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.852	114	479993	10.00	PPBV	-0.01
63) CHLOROBENZENE-D5	16.384	82	210988	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.384	82	211270	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.027	95	90769	4.17	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 83.40%			
Target Compounds						Qvalue
10) VINYL CHLORIDE	5.671	62	88915	5.75	PPBV	100
12) n-BUTANE	5.866	43	133478	5.77	PPBV #	98
18) ISOPROPYL ALCOHOL	7.137	45	27825	1.41	PPBV	85
19) ACETONE	6.882	58	39638	5.69	PPBV #	41
20) PENTANE	7.387	42	10094	0.73	PPBV	96
26) ETHANOL	6.401	45	41927	8.83	PPBV	96
31) TRANS-1,2-DICHLOROETHY...	8.713	96	1634	0.11	PPBV #	74
39) cis-1,2-DICHLOROETHYLENE	9.747	96	11593	0.78	PPBV	98
47) BENZENE	11.536	78	119747	2.71	PPBV	99
50) TRICHLOROETHYLENE	12.594	95	4525	0.26	PPBV	92
56) HEPTANE	12.862	43	4648	0.22	PPBV	97
60) TOLUENE	14.492	92	11452	0.40	PPBV	97
65) TETRACHLOROETHYLENE	15.709	164	3299	0.18	PPBV	94
71) ETHYLBENZENE	16.822	91	10220	0.21	PPBV #	90
72) m,p-XYLENE	17.011	106	15802	0.83	PPBV	89
73) o-XYLENE	17.534	106	3956	0.22	PPBV #	85
83) 1,3,5-TRIMETHYLBENZENE	18.946	105	4633	0.17	PPBV #	91
85) 1,2,4-TRIMETHYLBENZENE	19.396	105	15919	0.70	PPBV #	27

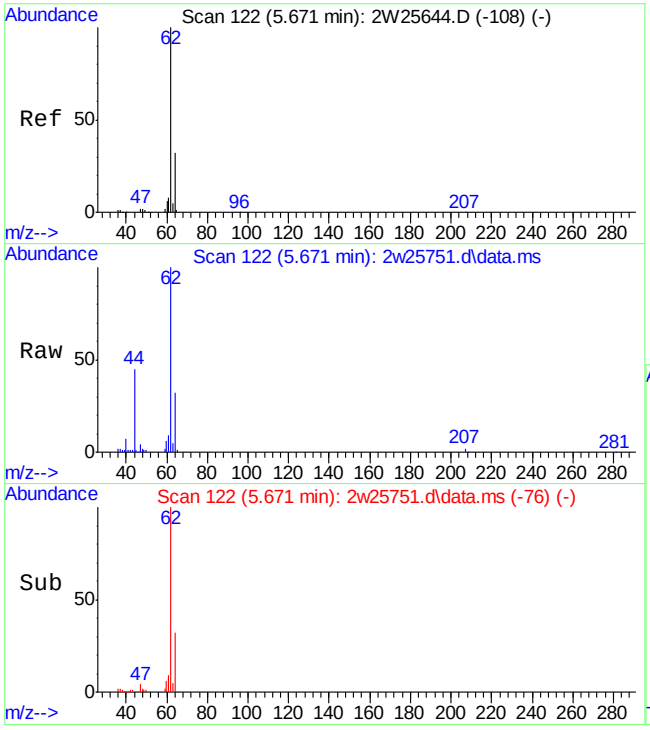
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25751.d
Acq On : 29 Sep 2009 11:27 pm
Operator : YOUMINH
Sample : JA28598-2DUP
Misc : MS86333,V2W1084,100,,,,1
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Sep 30 11:44:04 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

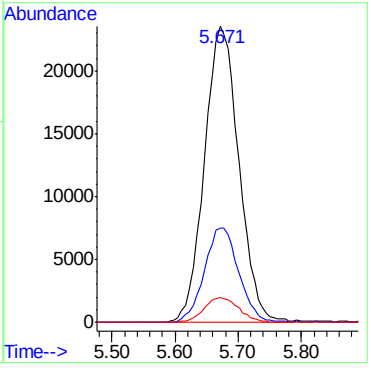


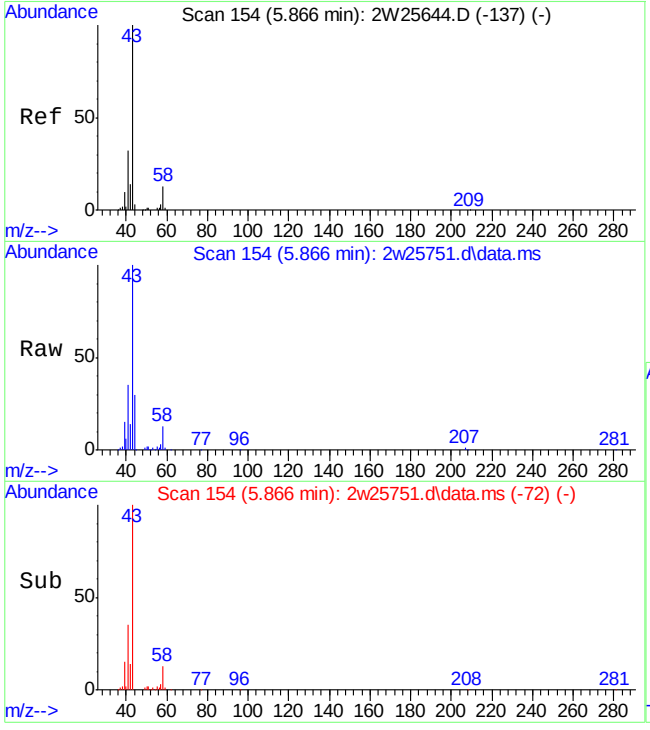


#10
VINYL CHLORIDE
Concen: 5.75 PPBV
RT: 5.671 min Scan# 122
Delta R.T. 0.000 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 62 Resp: 88915

Ion	Ratio	Lower	Upper
62	100		
64	31.8	12.1	52.1
61	8.5	0.0	28.3

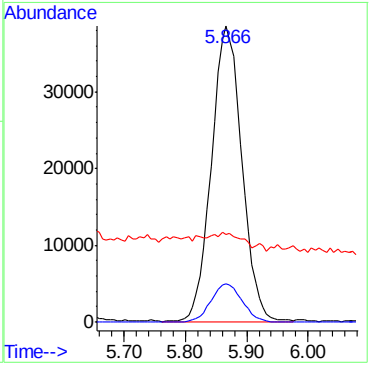


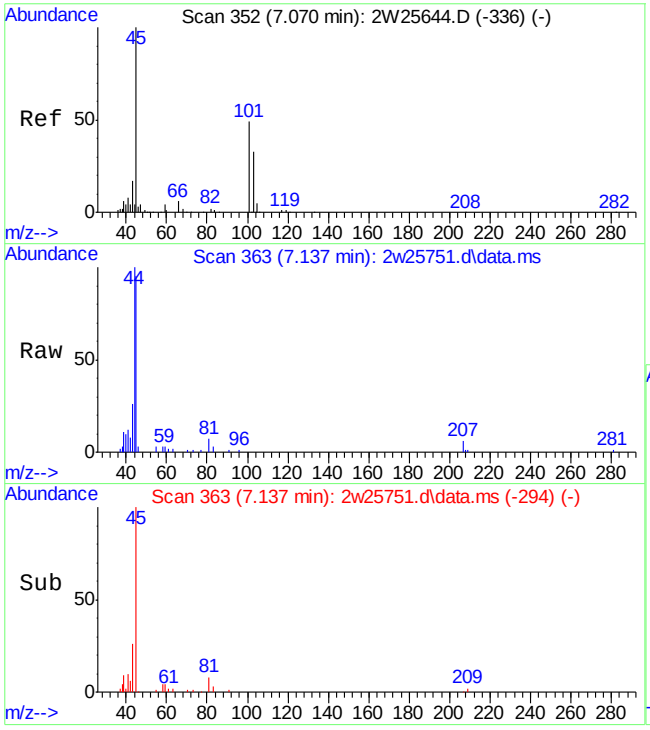


#12
n-BUTANE
Concen: 5.77 PPBV
RT: 5.866 min Scan# 154
Delta R.T. 0.000 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 43 Resp: 133478

Ion	Ratio	Lower	Upper
43	100		
58	13.0	10.7	16.1
44	4.5	2.6	3.8#

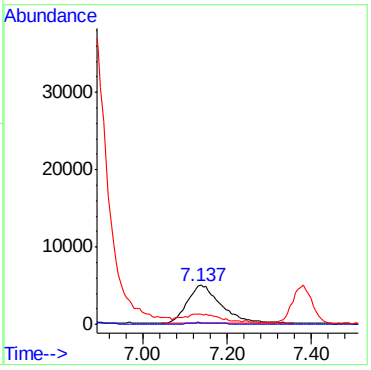


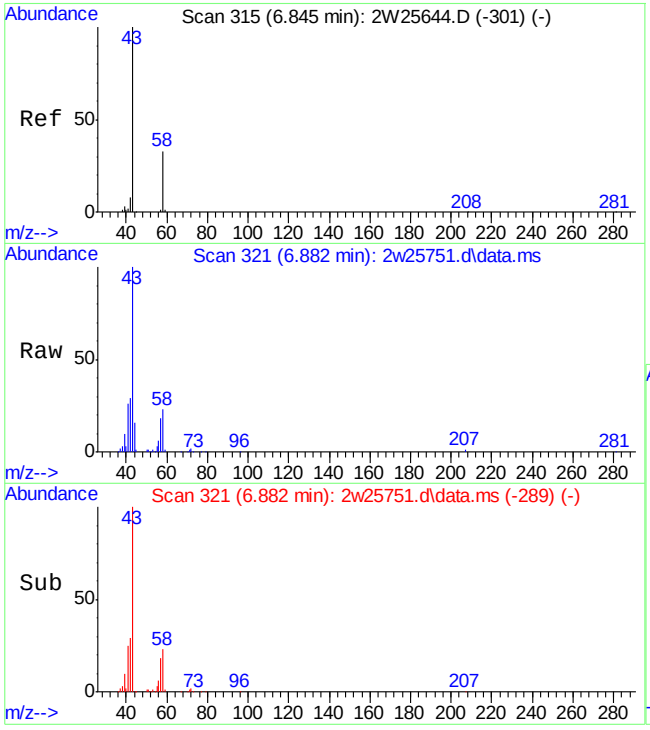


#18
ISOPROPYL ALCOHOL
Concen: 1.41 PPBV
RT: 7.137 min Scan# 363
Delta R.T. 0.067 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 45 Resp: 27825

Ion	Ratio	Lower	Upper
45	100		
59	3.5	0.0	24.2
43	27.3	0.0	39.4

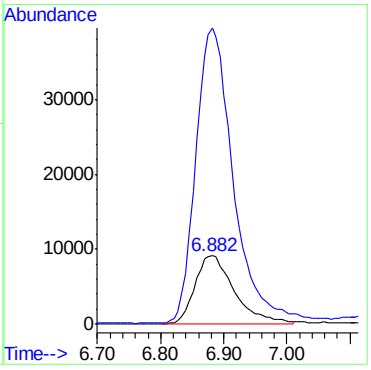


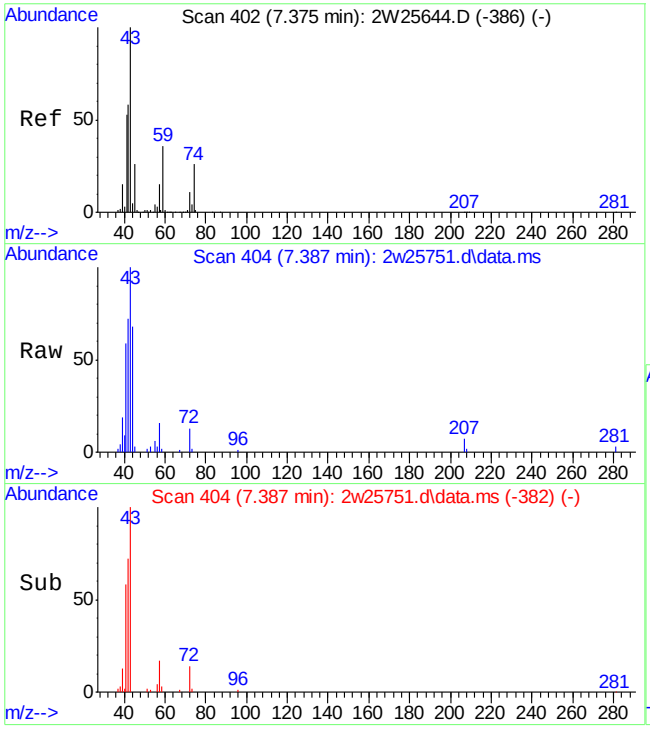


#19
ACETONE
Concen: 5.69 PPBV
RT: 6.882 min Scan# 321
Delta R.T. 0.037 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 58 Resp: 39638

Ion	Ratio	Lower	Upper
58	100		
43	421.8	284.9	324.9#

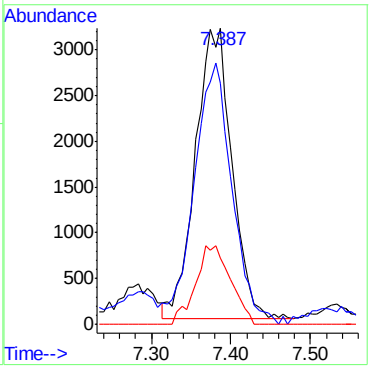


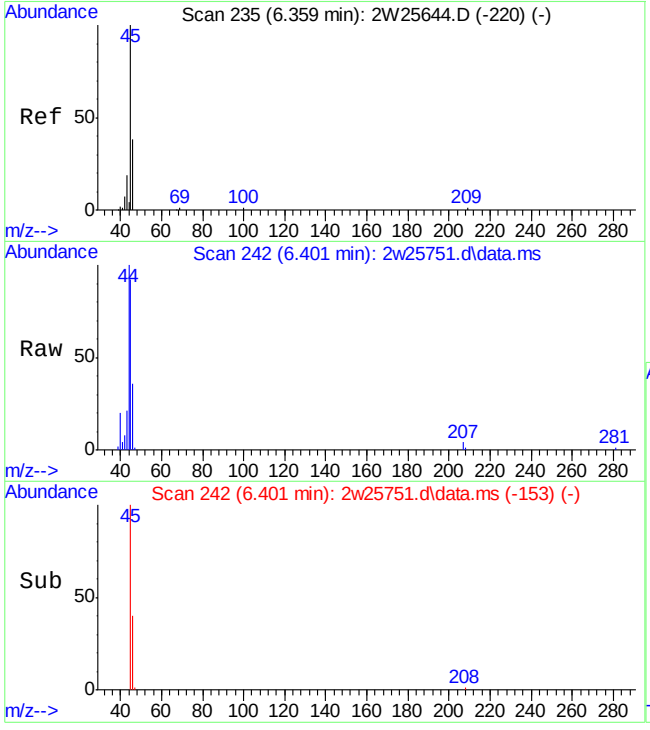


#20
PENTANE
Concen: 0.73 PPBV
RT: 7.387 min Scan# 404
Delta R.T. 0.012 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 42 Resp: 10094

Ion	Ratio	Lower	Upper
42	100		
41	94.1	69.4	109.4
57	25.8	6.6	46.6

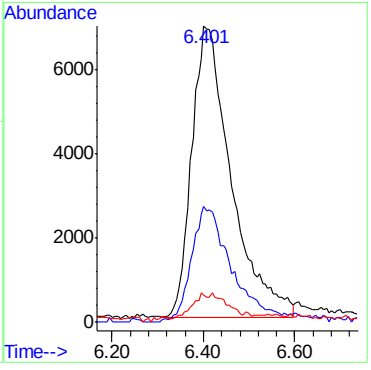


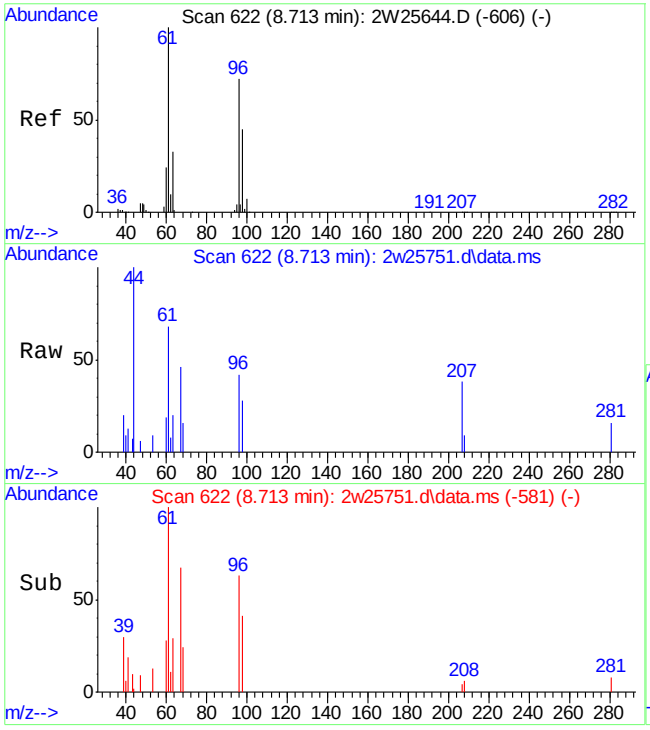


#26
ETHANOL
Concen: 8.83 PPBV
RT: 6.401 min Scan# 242
Delta R.T. 0.043 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 45 Resp: 41927

Ion	Ratio	Lower	Upper
45	100		
46	40.2	19.4	59.4
42	3.6	0.0	28.5

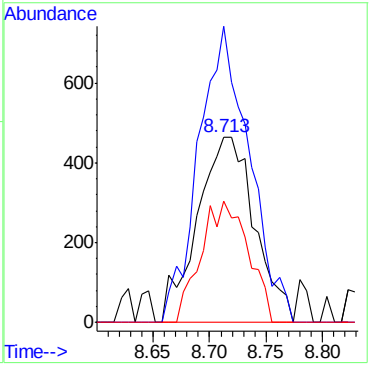


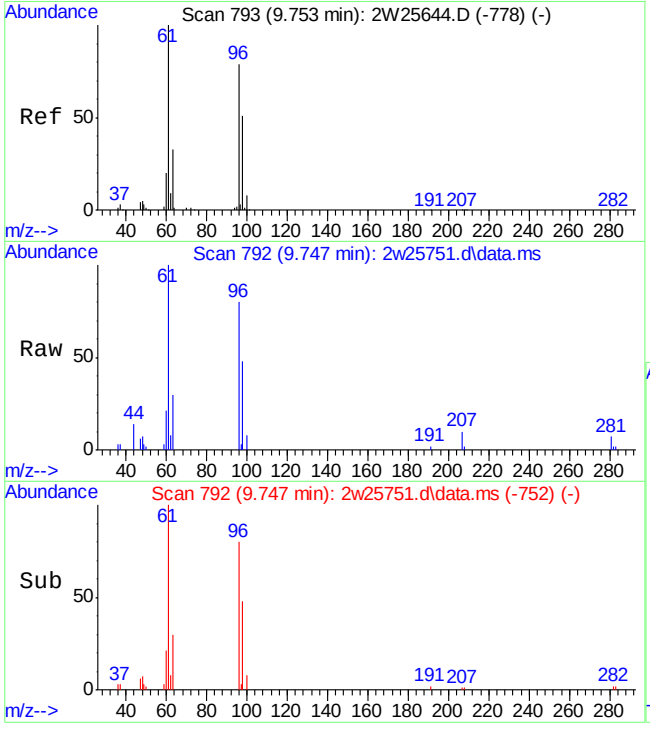


#31
TRANS-1,2-DICHLOROETHYLENE
Concen: 0.11 PPBV
RT: 8.713 min Scan# 622
Delta R.T. 0.000 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 96 Resp: 1634

Ion	Ratio	Lower	Upper
96	100		
61	141.6	121.2	161.2
98	0.0	44.4	84.4#

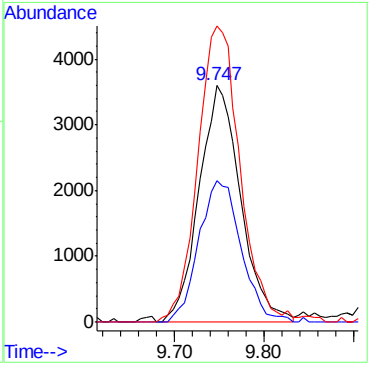


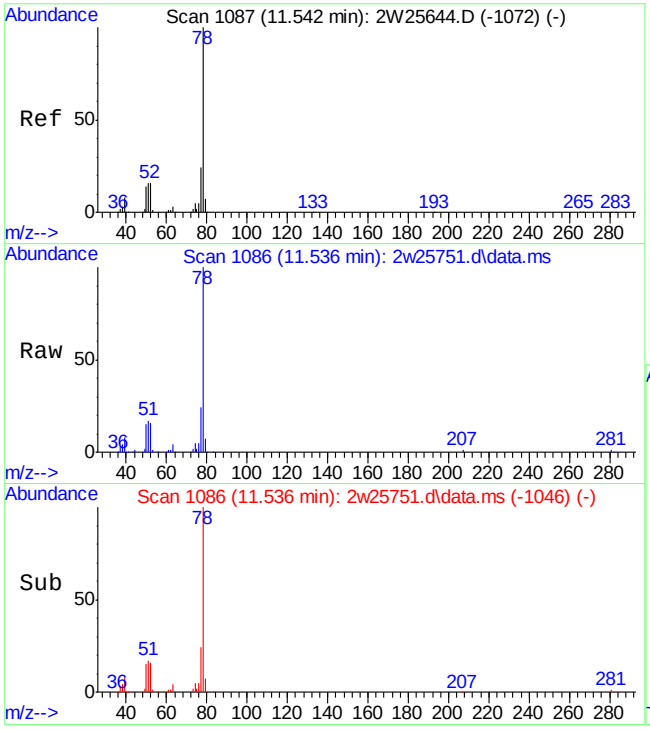


#39
cis-1,2-DICHLOROETHYLENE
Concen: 0.78 PPBV
RT: 9.747 min Scan# 792
Delta R.T. -0.006 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 96 Resp: 11593

Ion	Ratio	Lower	Upper
96	100		
98	60.8	44.8	84.8
61	127.3	107.9	147.9

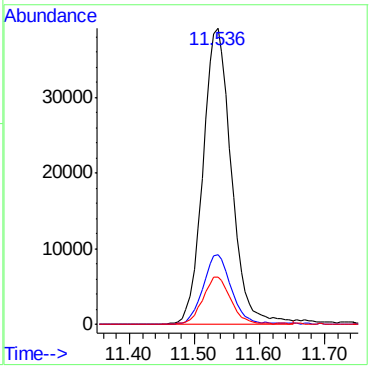


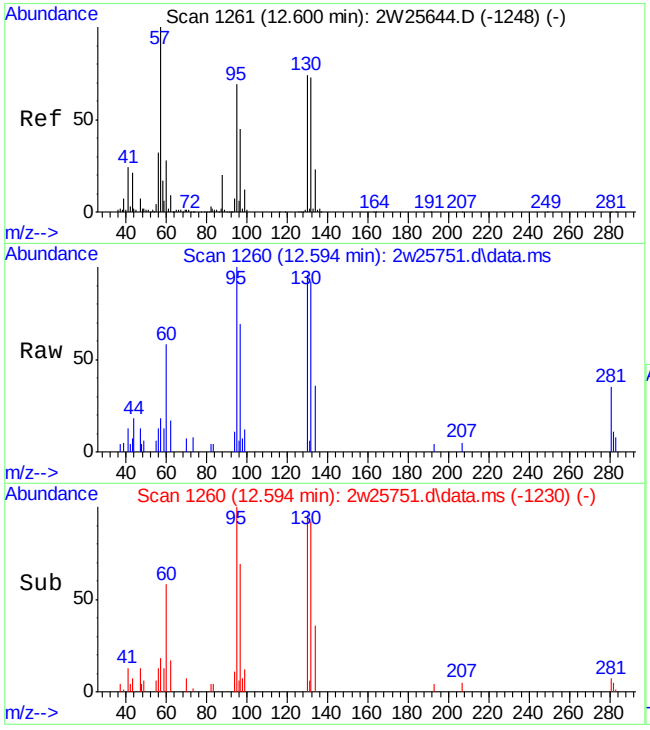


#47
BENZENE
Concen: 2.71 PPBV
RT: 11.536 min Scan# 1086
Delta R.T. -0.006 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 78 Resp: 119747

Ion	Ratio	Lower	Upper
78	100		
77	23.1	3.8	43.8
52	15.8	0.0	35.8

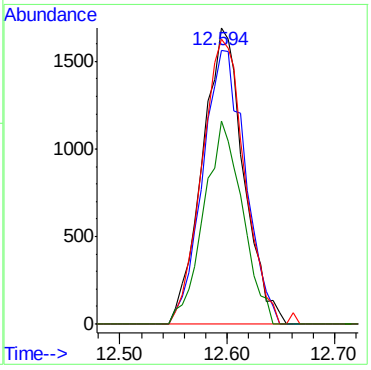


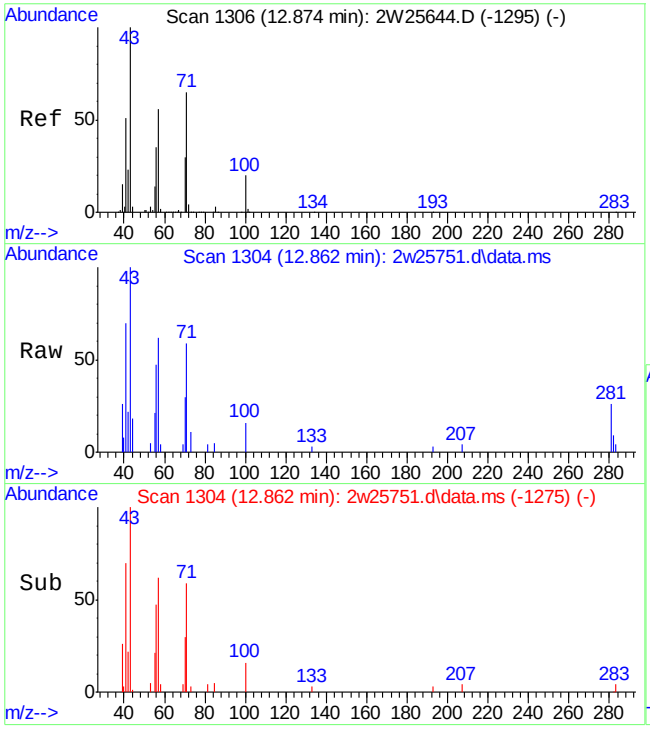


#50
TRICHLOROETHYLENE
Concen: 0.26 PPBV
RT: 12.594 min Scan# 1260
Delta R.T. -0.006 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 95 Resp: 4525

Ion	Ratio	Lower	Upper
95	100		
132	95.2	85.5	125.5
130	98.9	89.0	129.0
97	64.1	46.2	86.2

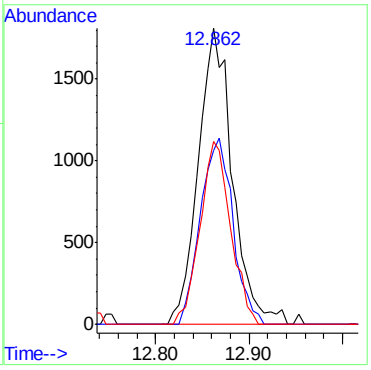


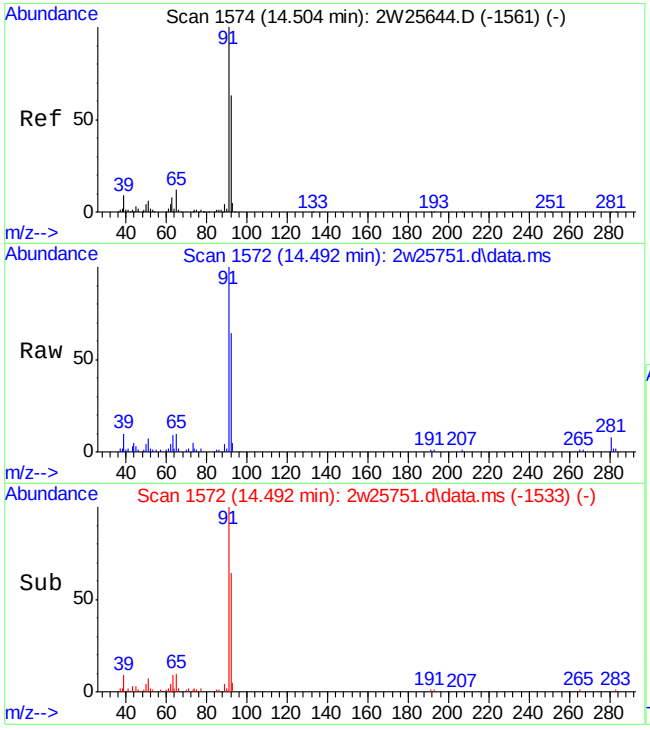


#56
HEPTANE
Concen: 0.22 PPBV
RT: 12.862 min Scan# 1304
Delta R.T. -0.012 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 43 Resp: 4648

Ion	Ratio	Lower	Upper
43	100		
71	60.0	44.0	84.0
57	55.2	35.5	75.5

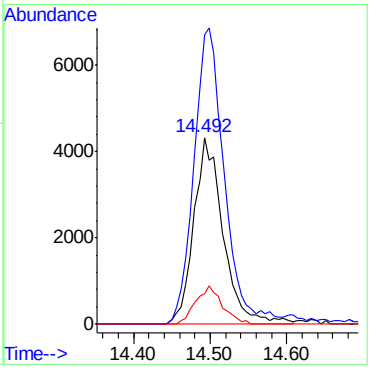


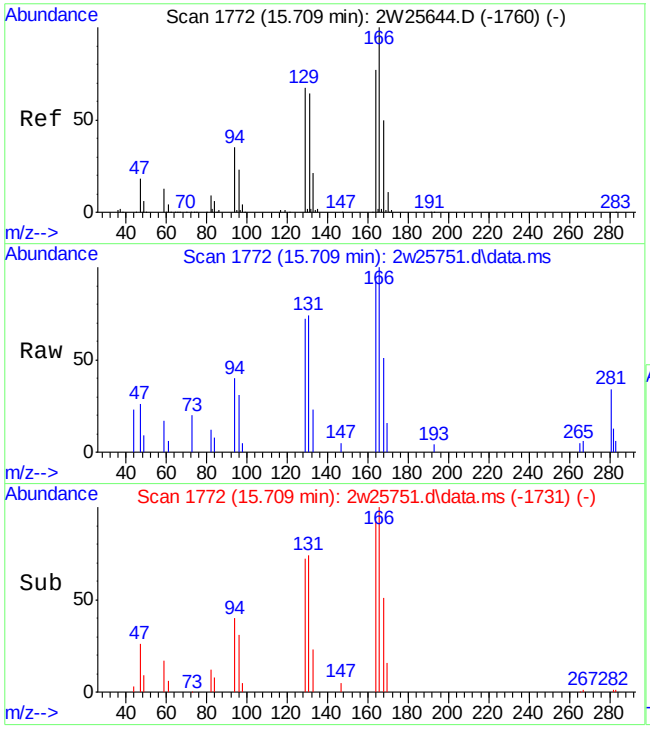


#60
TOLUENE
Concen: 0.40 PPBV
RT: 14.492 min Scan# 1572
Delta R.T. -0.012 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 92 Resp: 11452

Ion	Ratio	Lower	Upper
92	100		
91	164.5	140.7	180.7
65	18.6	0.0	38.6

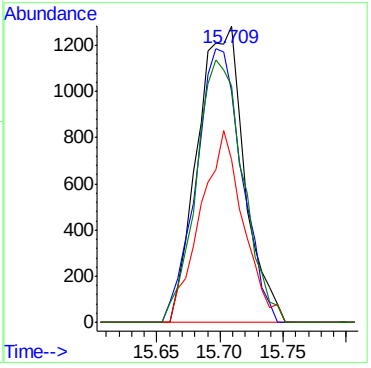


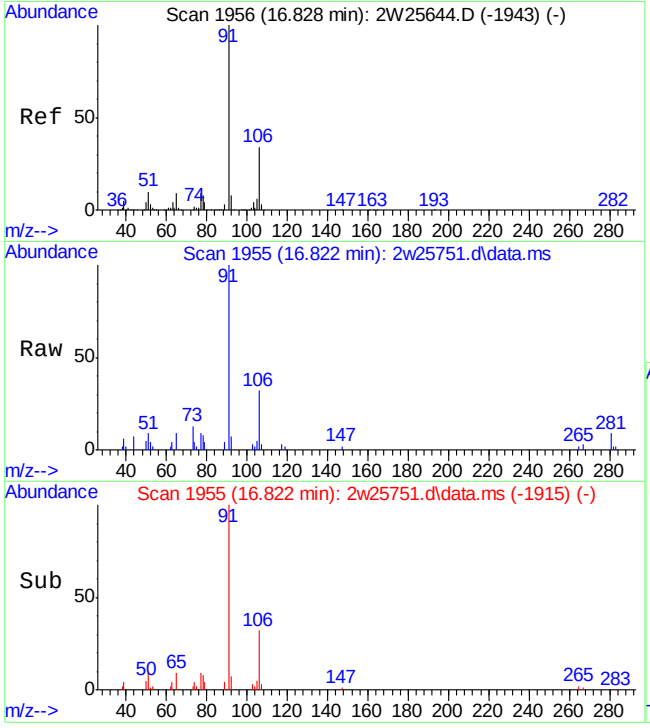


#65
TETRACHLOROETHYLENE
Concen: 0.18 PPBV
RT: 15.709 min Scan# 1772
Delta R.T. 0.000 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion:164 Resp: 3299

Ion	Ratio	Lower	Upper
164	100		
129	90.6	65.6	105.6
168	59.6	43.4	83.4
131	89.1	62.3	102.3

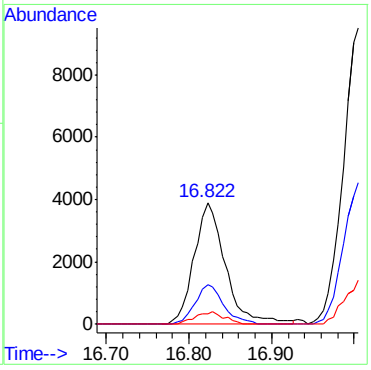


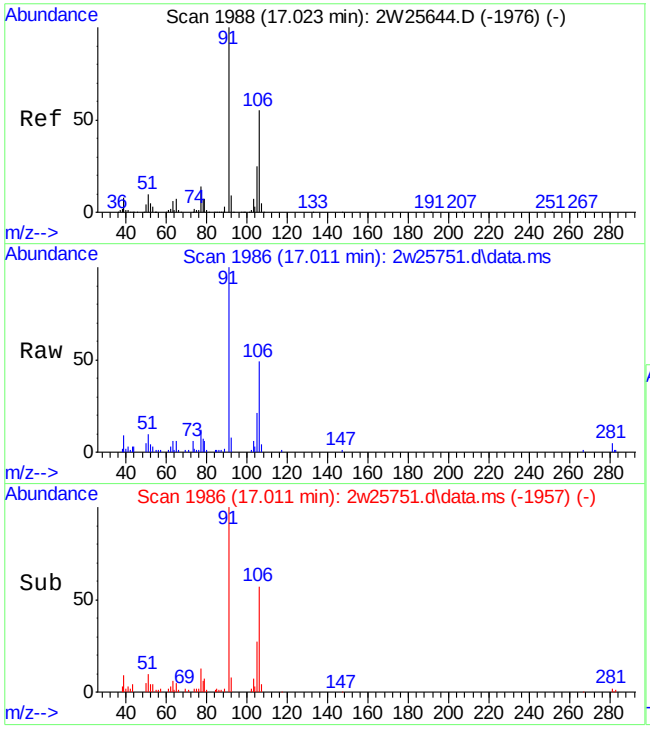


#71
ETHYLBENZENE
Concen: 0.21 PPBV
RT: 16.822 min Scan# 1955
Delta R.T. -0.006 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion: 91 Resp: 10220

Ion	Ratio	Lower	Upper
91	100		
106	29.5	13.0	53.0
77	0.0	0.0	28.8

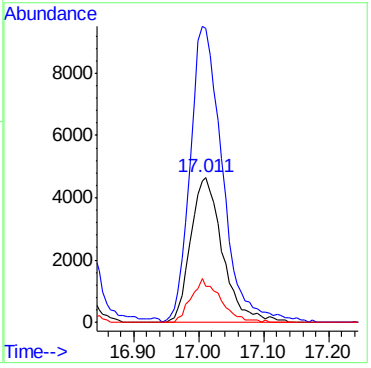


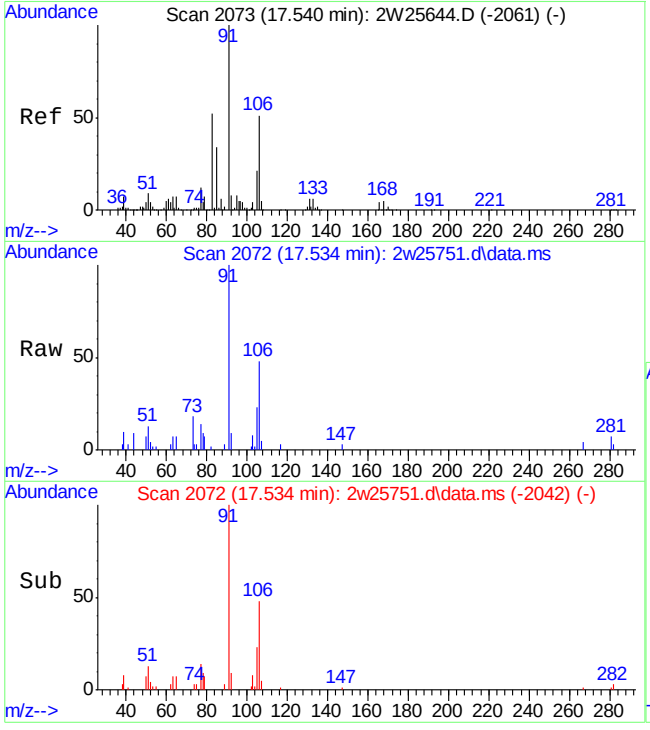


#72
m,p-XYLENE
Concen: 0.83 PPBV
RT: 17.011 min Scan# 1986
Delta R.T. -0.012 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion:106 Resp: 15802

Ion	Ratio	Lower	Upper
106	100		
91	202.6	147.4	221.2
77	24.7	20.5	30.7

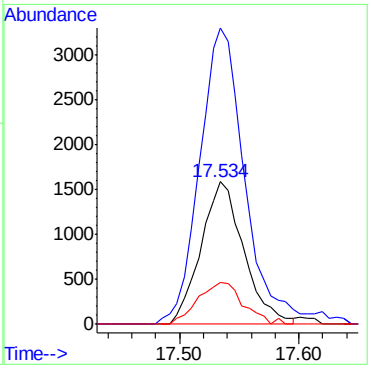


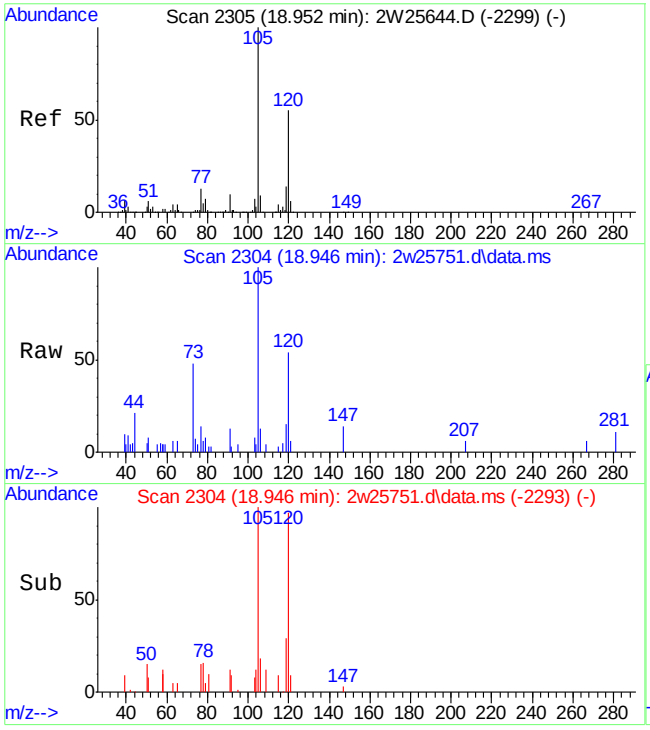


#73
o-XYLENE
Concen: 0.22 PPBV
RT: 17.534 min Scan# 2072
Delta R.T. -0.006 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion:106 Resp: 3956

Ion	Ratio	Lower	Upper
106	100		
91	222.5	179.7	219.7#
77	30.9	5.4	45.4

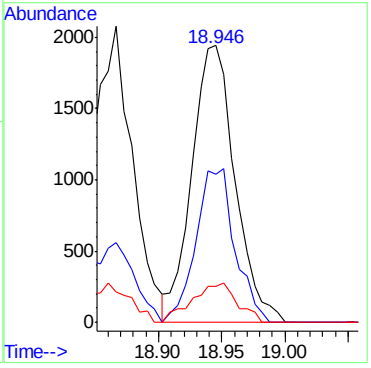


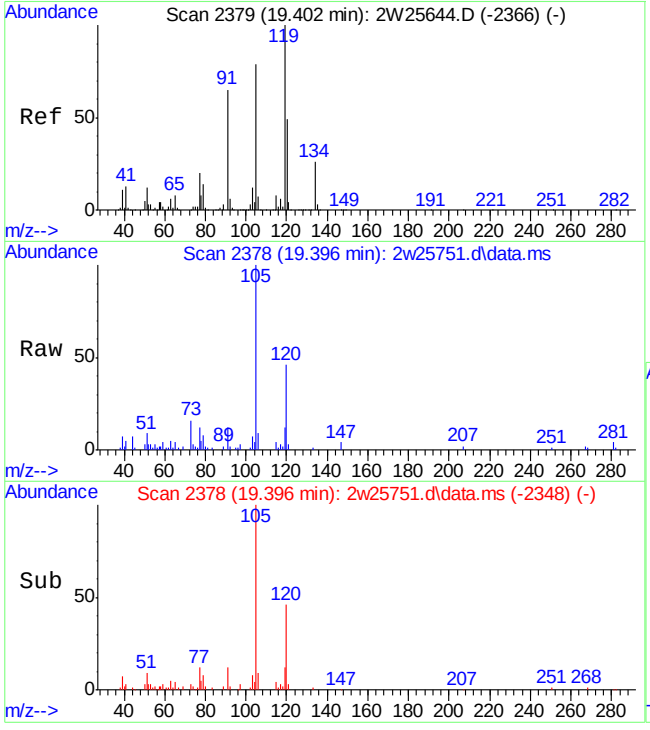


#83
1,3,5-TRIMETHYLBENZENE
Concen: 0.17 PPBV
RT: 18.946 min Scan# 2304
Delta R.T. -0.006 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion:105 Resp: 4633

Ion	Ratio	Lower	Upper
105	100		
120	50.2	33.8	73.8
91	0.0	0.0	30.1

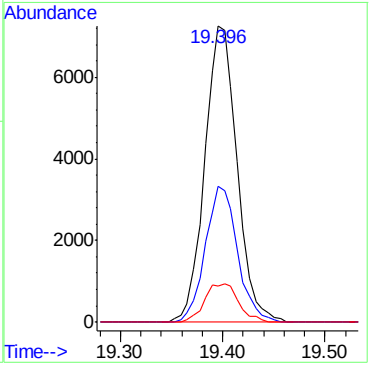




#85
1,2,4-TRIMETHYLBENZENE
Concen: 0.70 PPBV
RT: 19.396 min Scan# 2378
Delta R.T. -0.006 min
Lab File: 2w25751.d
Acq: 29 Sep 2009 11:27 pm

Tgt Ion:105 Resp: 15919

Ion	Ratio	Lower	Upper
105	100		
120	45.8	41.7	81.7
119	13.6	106.1	146.1#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25795.D Vial: 13
Acq On : 5 Oct 2009 7:05 pm Operator: YOUMINH
Sample : JA28739-1DUP Inst : MS2W
Misc : MS86415,V2W1086,100,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:16:20 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	73731	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	304495	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	134911	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	134837	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	66044	4.99	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 99.80%

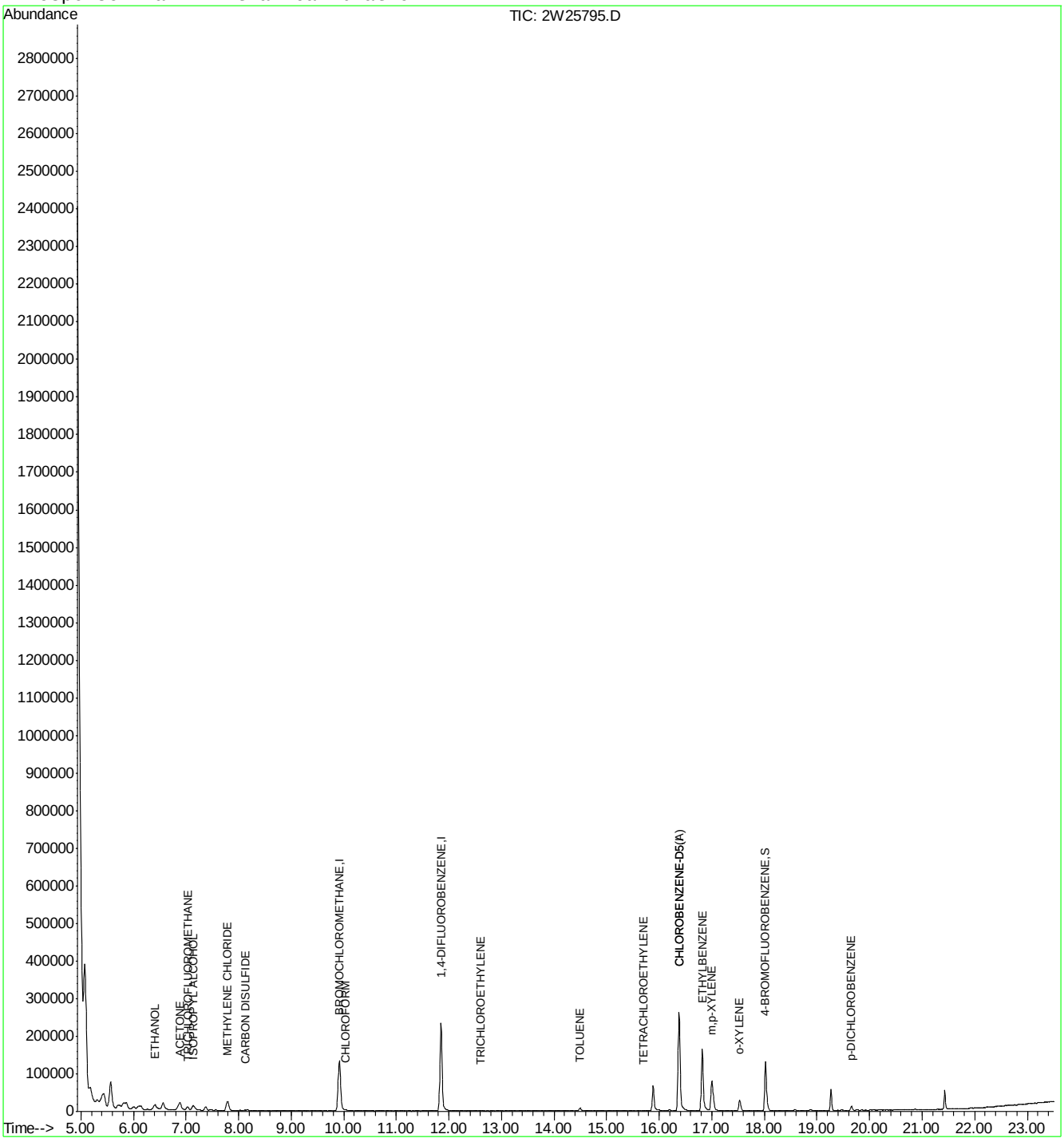
Target Compounds						Qvalue
17) TRICHLOROFLUOROMETHANE	7.03	101	10139	0.29	PPBV	99
18) ISOPROPYL ALCOHOL	7.14	45	28093	1.95	PPBV	99
19) ACETONE	6.88	58	5764	1.19	PPBV #	20
25) CARBON DISULFIDE	8.12	76	4762	0.16	PPBV	93
26) ETHANOL	6.41	45	26163	8.72	PPBV	98
28) METHYLENE CHLORIDE	7.78	84	6497	0.72	PPBV	99
41) CHLOROFORM	10.04	83	3870	0.19	PPBV	95
50) TRICHLOROETHYLENE	12.59	95	516	0.04	PPBV #	84
60) TOLUENE	14.49	92	4887	0.27	PPBV	90
65) TETRACHLOROETHYLENE	15.70	164	478	0.04	PPBV	96
71) ETHYLBENZENE	16.82	91	193943	5.94	PPBV	99
72) m,p-XYLENE	17.00	106	45811	3.60	PPBV	92
73) o-XYLENE	17.53	106	12418	1.04	PPBV	92
88) p-DICHLOROBENZENE	19.66	146	7206	0.66	PPBV	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

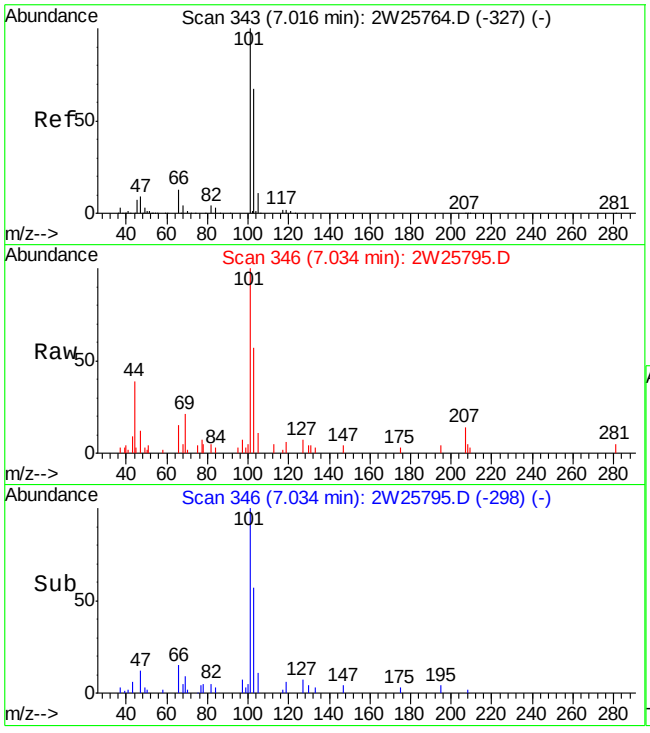
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25795.D Vial: 13
Acq On : 5 Oct 2009 7:05 pm Operator: YOUMINH
Sample : JA28739-1DUP Inst : MS2W
Misc : MS86415,V2W1086,100,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:40 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration



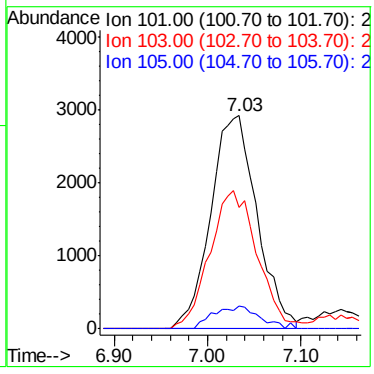
ACCUTEST Laboratories JA28238

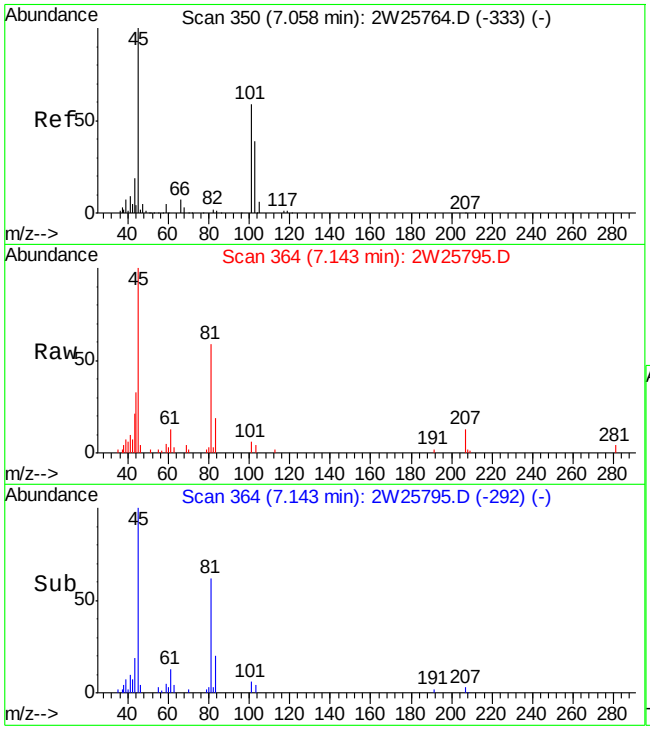


#17
TRICHLOROFLUOROMETHANE
Concen: 0.29 PPBV
RT: 7.03 min Scan# 346
Delta R.T. 0.02 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:101 Resp: 10139

Ion	Ratio	Lower	Upper
101	100		
103	66.4	46.0	86.0
105	10.7	0.0	31.0

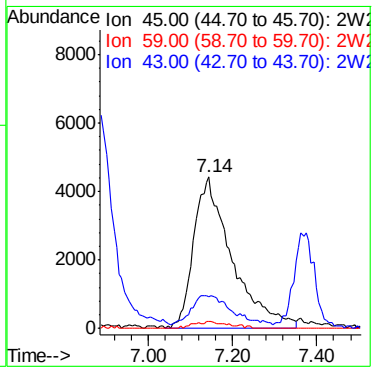


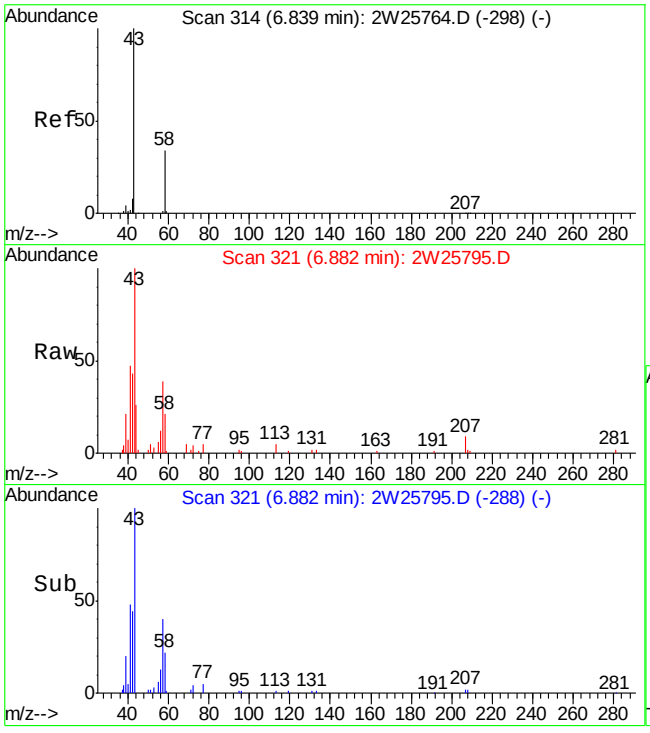


#18
ISOPROPYL ALCOHOL
Concen: 1.95 PPBV
RT: 7.14 min Scan# 364
Delta R.T. 0.09 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 45 Resp: 28093

Ion	Ratio	Lower	Upper
45	100		
59	4.7	0.0	24.7
43	20.7	1.3	41.3

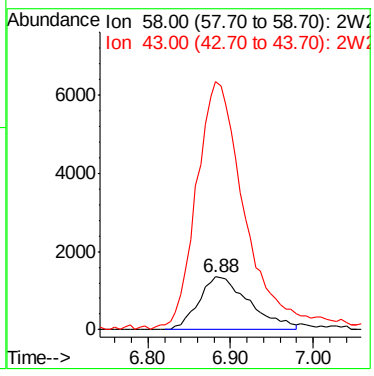


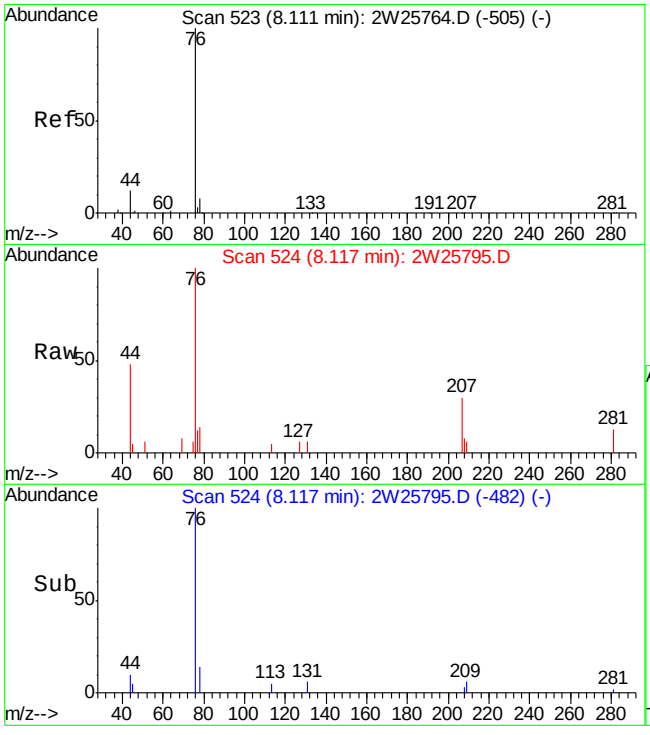


#19
ACETONE
Concen: 1.19 PPBV
RT: 6.88 min Scan# 321
Delta R.T. 0.04 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 58 Resp: 5764

Ion	Ratio	Lower	Upper
58	100		
43	458.3	281.6	321.6#

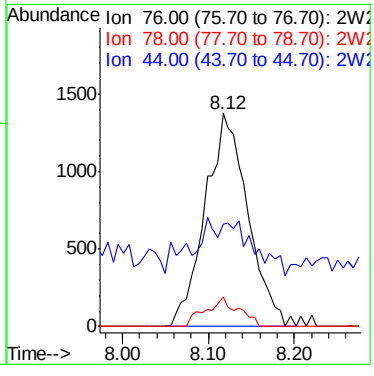


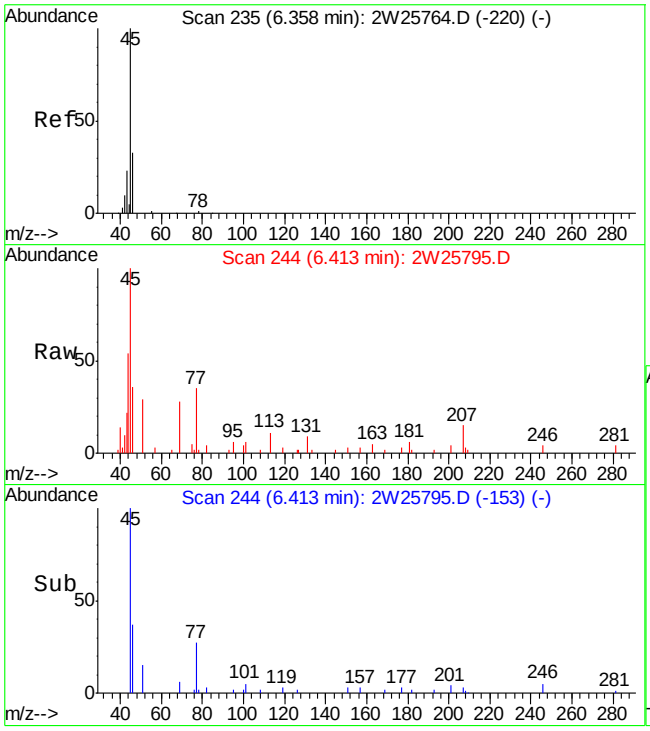


#25
CARBON DISULFIDE
Concen: 0.16 PPBV
RT: 8.12 min Scan# 524
Delta R.T. 0.01 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 76 Resp: 4762

Ion	Ratio	Lower	Upper
76	100		
78	10.7	0.0	29.3
44	15.8	0.0	32.1

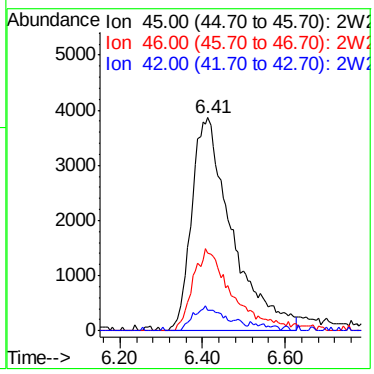


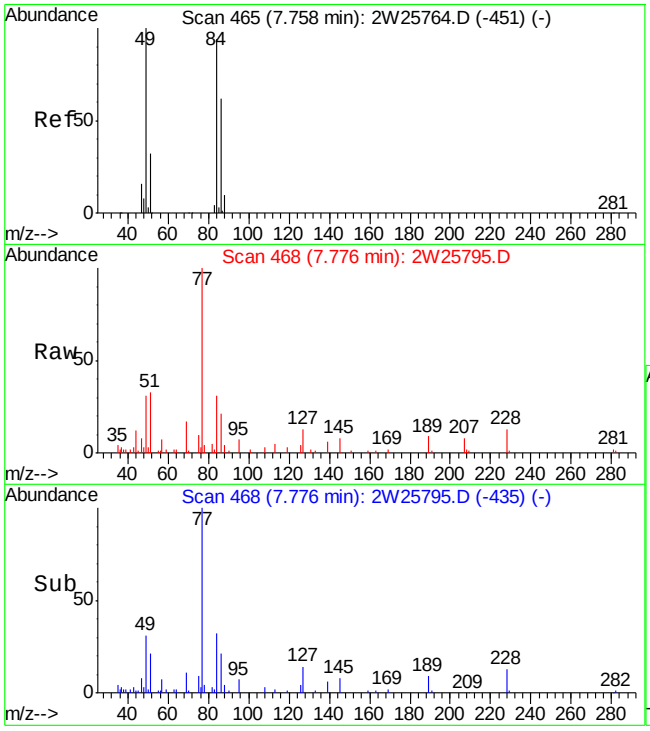


#26
ETHANOL
Concen: 8.72 PPBV
RT: 6.41 min Scan# 244
Delta R.T. 0.06 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 45 Resp: 26163

Ion	Ratio	Lower	Upper
45	100		
46	37.1	17.8	57.8
42	7.9	0.0	29.6

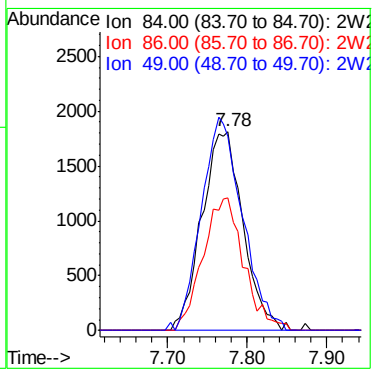


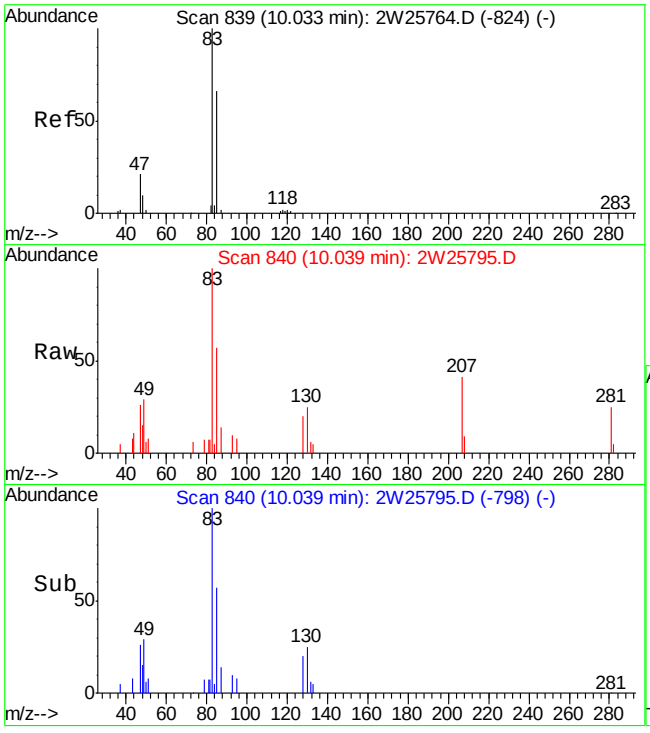


#28
METHYLENE CHLORIDE
Concen: 0.72 PPBV
RT: 7.78 min Scan# 468
Delta R.T. 0.02 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 84 Resp: 6497

Ion	Ratio	Lower	Upper
84	100		
86	66.3	45.3	85.3
49	107.3	0.0	305.8

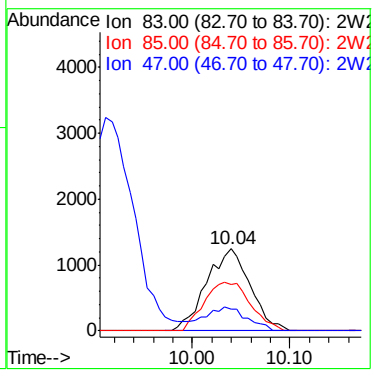


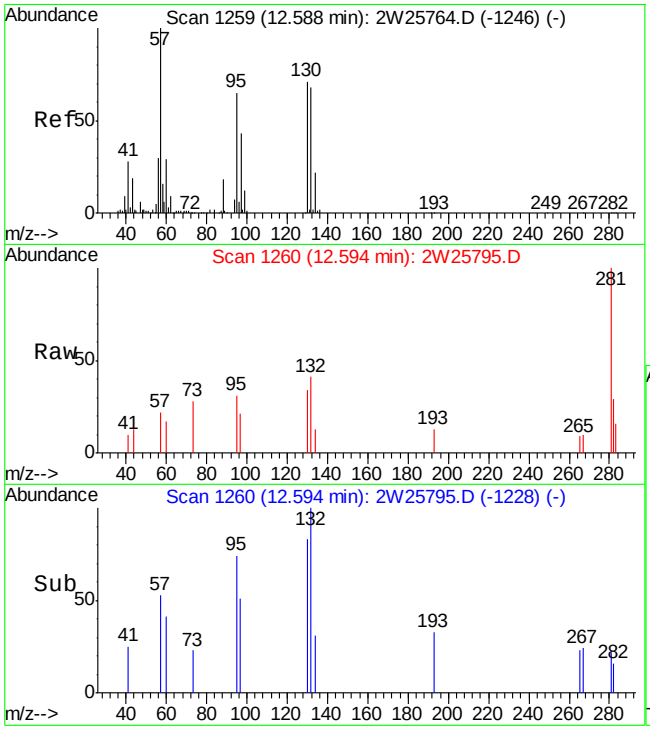


#41
CHLOROFORM
Concen: 0.19 PPBV
RT: 10.04 min Scan# 840
Delta R.T. 0.01 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 83 Resp: 3870

Ion	Ratio	Lower	Upper
83	100		
85	62.9	44.9	84.9
47	27.3	2.0	42.0

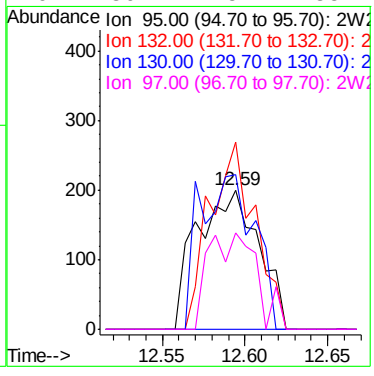


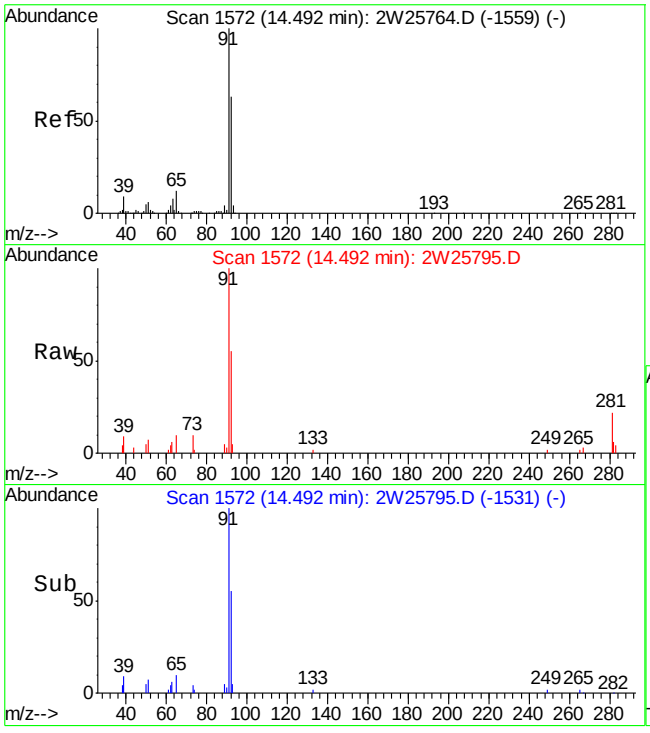


#50
TRICHLOROETHYLENE
Concen: 0.04 PPBV
RT: 12.59 min Scan# 1260
Delta R.T. 0.01 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 95 Resp: 516

Ion	Ratio	Lower	Upper
95	100		
132	98.4	83.7	123.7
130	98.1	88.1	128.1
97	30.2	45.4	85.4#

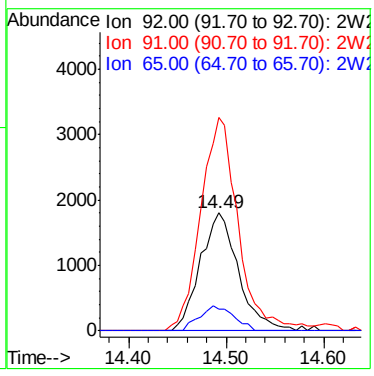


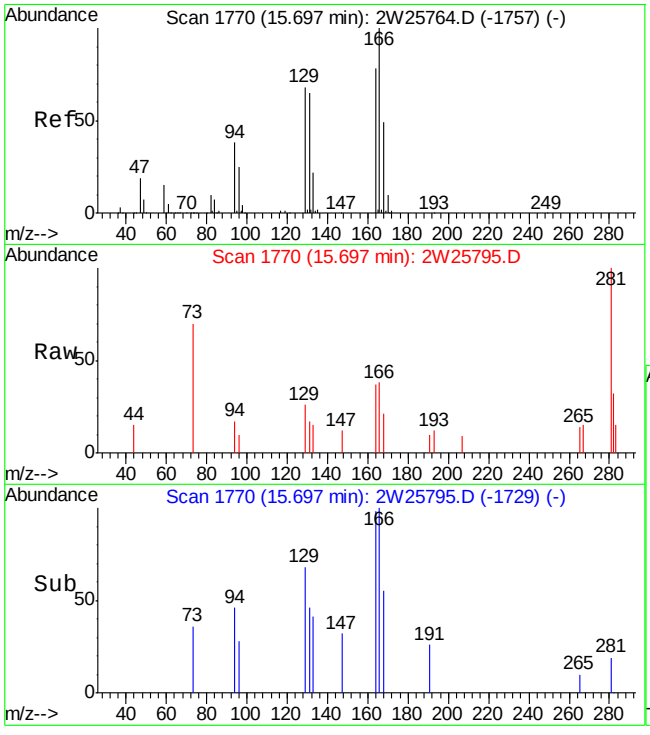


#60
TOLUENE
Concen: 0.27 PPBV
RT: 14.49 min Scan# 1572
Delta R.T. 0.00 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 92 Resp: 4887

Ion	Ratio	Lower	Upper
92	100		
91	177.9	143.7	183.7
65	18.7	0.0	38.6

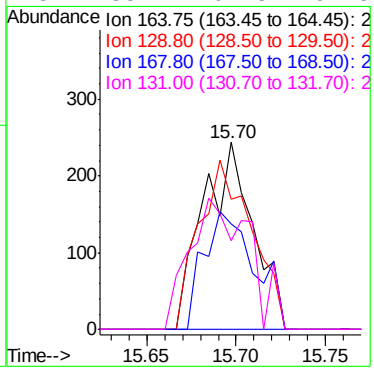


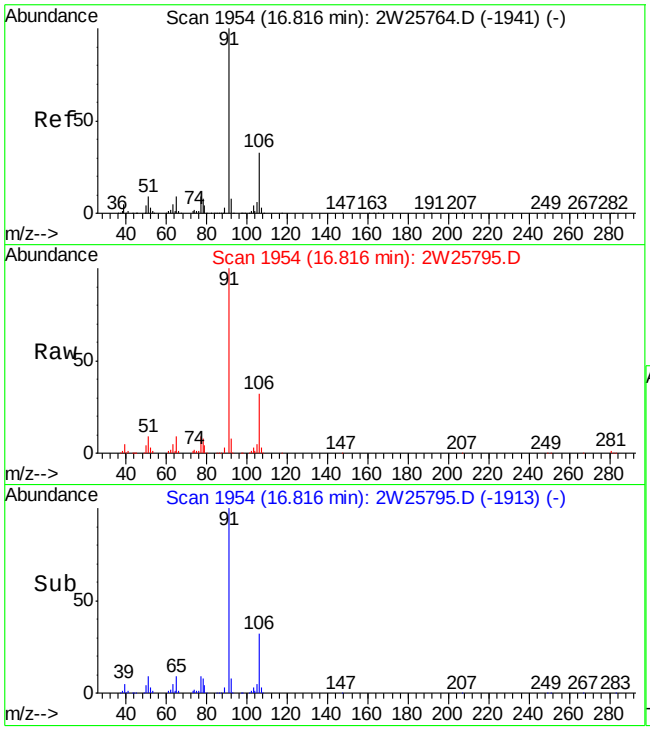


#65
TETRACHLOROETHYLENE
Concen: 0.04 PPBV
RT: 15.70 min Scan# 1770
Delta R.T. 0.00 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:164 Resp: 478

Ion	Ratio	Lower	Upper
164	100		
129	94.8	67.5	107.5
168	63.8	42.6	82.6
131	83.1	64.8	104.8

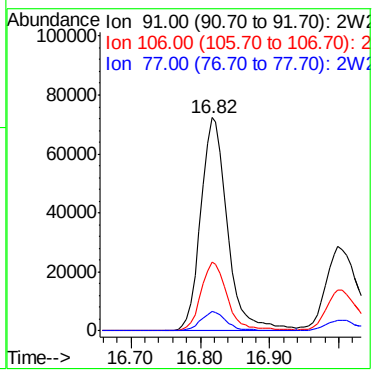


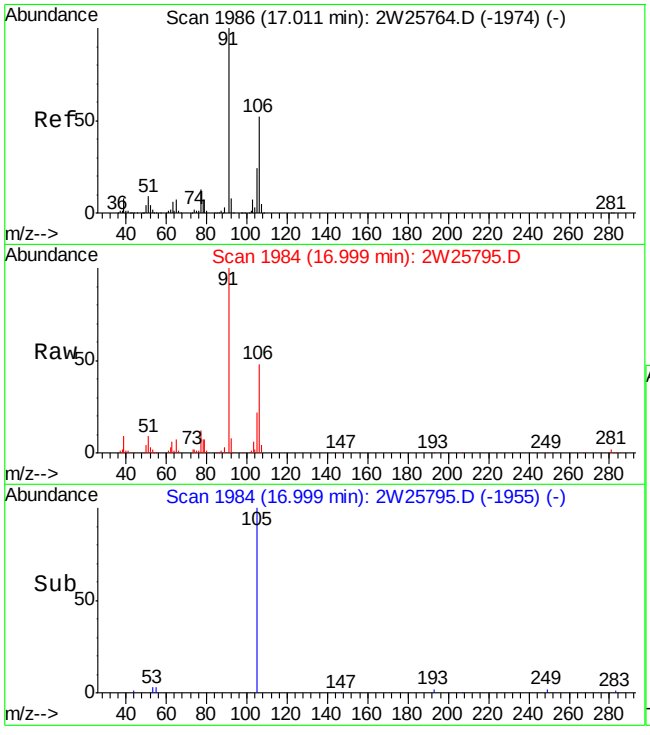


#71
ETHYLBENZENE
Concen: 5.94 PPBV
RT: 16.82 min Scan# 1954
Delta R.T. 0.00 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 91 Resp: 193943

Ion	Ratio	Lower	Upper
91	100		
106	32.0	12.4	52.4
77	8.8	0.0	28.6

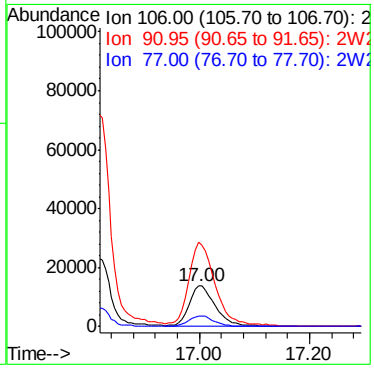


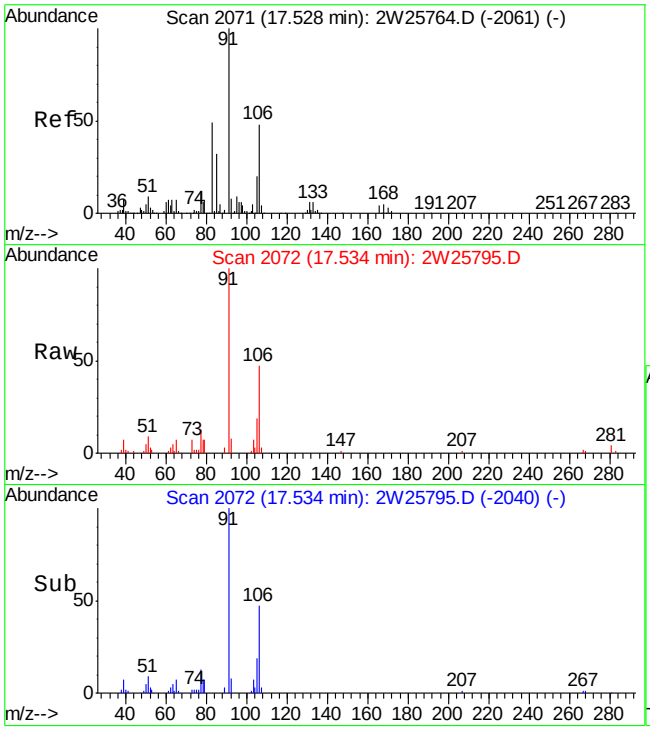


#72
m,p-XYLENE
Concen: 3.60 PPBV
RT: 17.00 min Scan# 1984
Delta R.T. -0.01 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:106 Resp: 45811

Ion	Ratio	Lower	Upper
106	100		
91	207.8	155.5	233.3
77	25.3	20.4	30.6

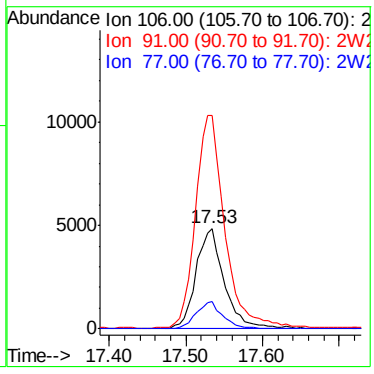


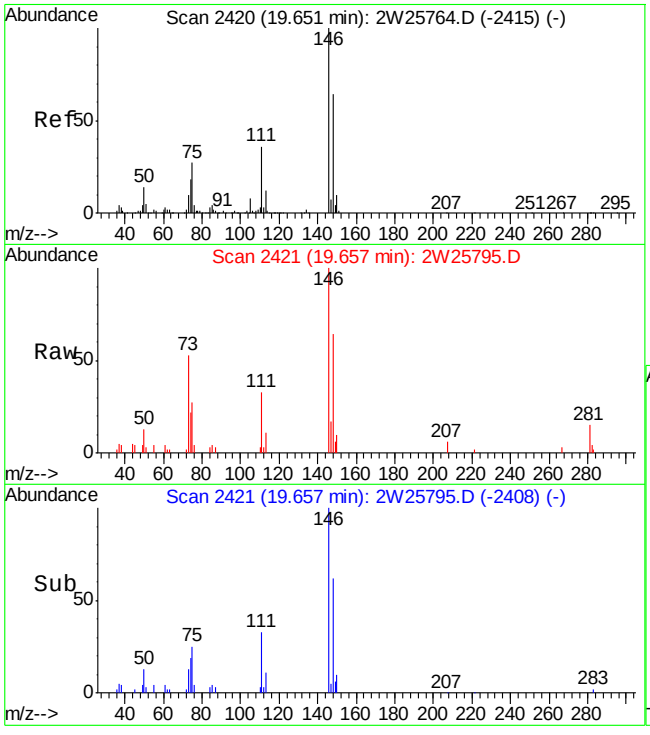


#73
o-XYLENE
Concen: 1.04 PPBV
RT: 17.53 min Scan# 2072
Delta R.T. 0.01 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:106 Resp: 12418

Ion	Ratio	Lower	Upper
106	100		
91	223.8	189.0	229.0
77	25.6	5.7	45.7

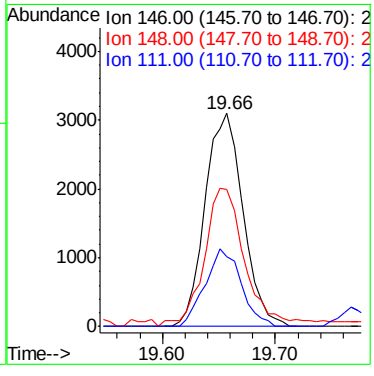




#88
p-DICHLOROBENZENE
Concen: 0.66 PPBV
RT: 19.66 min Scan# 2421
Delta R.T. 0.01 min
Lab File: 2W25795.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:146 Resp: 7206

Ion	Ratio	Lower	Upper
146	100		
148	71.1	44.8	84.8
111	34.6	16.8	56.8



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25425.d
Acq On : 9 Sep 2009 3:46 pm
Operator : YOUMINH
Sample : SCC(A817)
Misc : MS85260,V2W1073,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 10 09:25:31 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.936	128	154291	10.00	PPBV	-0.01
46) 1,4-DIFLUOROBENZENE	11.876	114	695241	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.402	82	304014	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.402	82	304176	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.045	95	120346	3.89	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 77.80%			

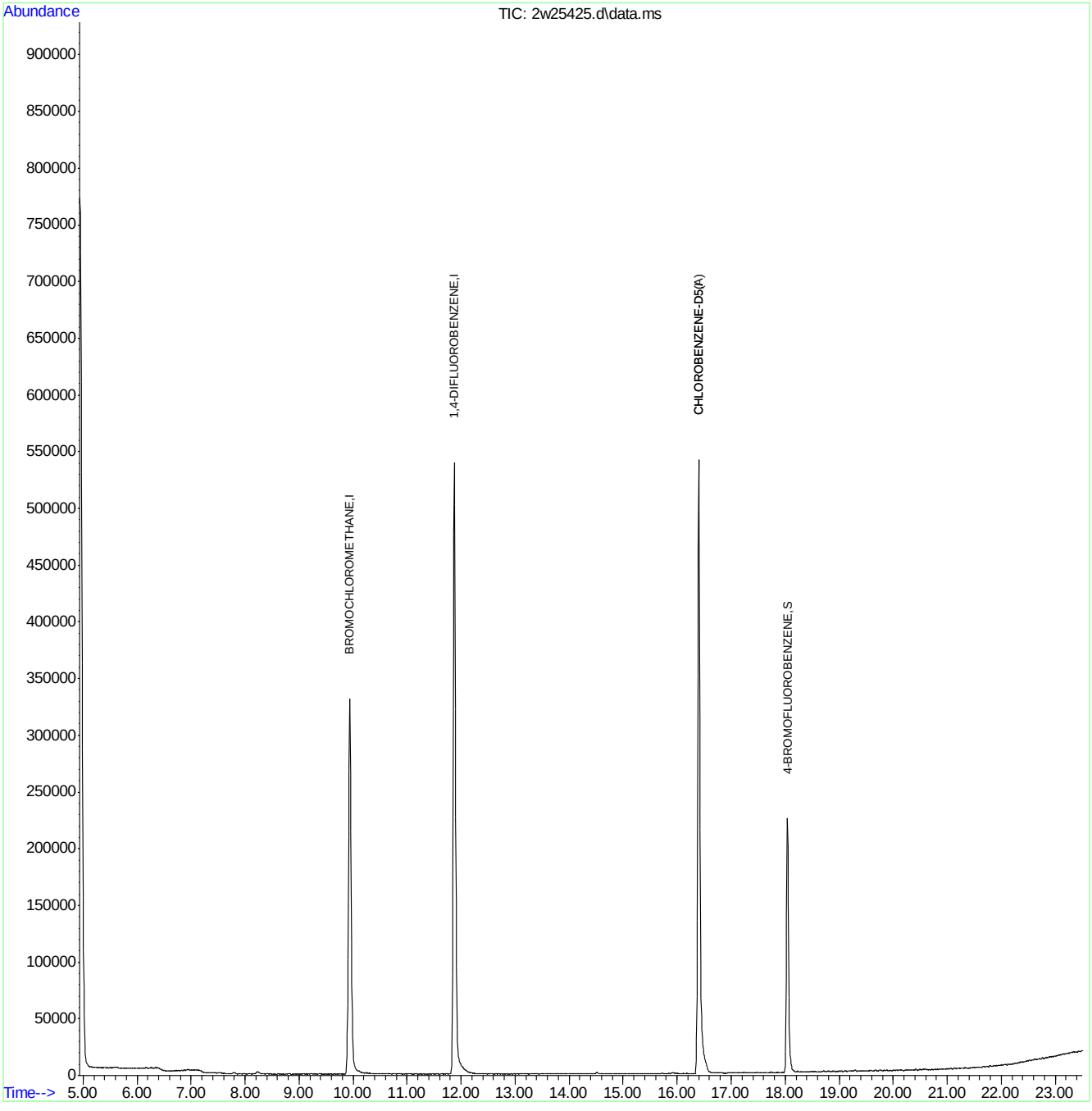
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25425.d
Acq On : 9 Sep 2009 3:46 pm
Operator : YOUMINH
Sample : SCC(A817)
Misc : MS85260,V2W1073,,,,,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Sep 10 09:25:31 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25443.d
Acq On : 10 Sep 2009 5:39 am
Operator : YOUMINH
Sample : SCC(A590)
Misc : MS85028,V2W1073,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 10 09:58:14 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.948	128	160150	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.882	114	782954	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.402	82	369730	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.402	82	369428	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.045	95	164401	4.36	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 87.20%			

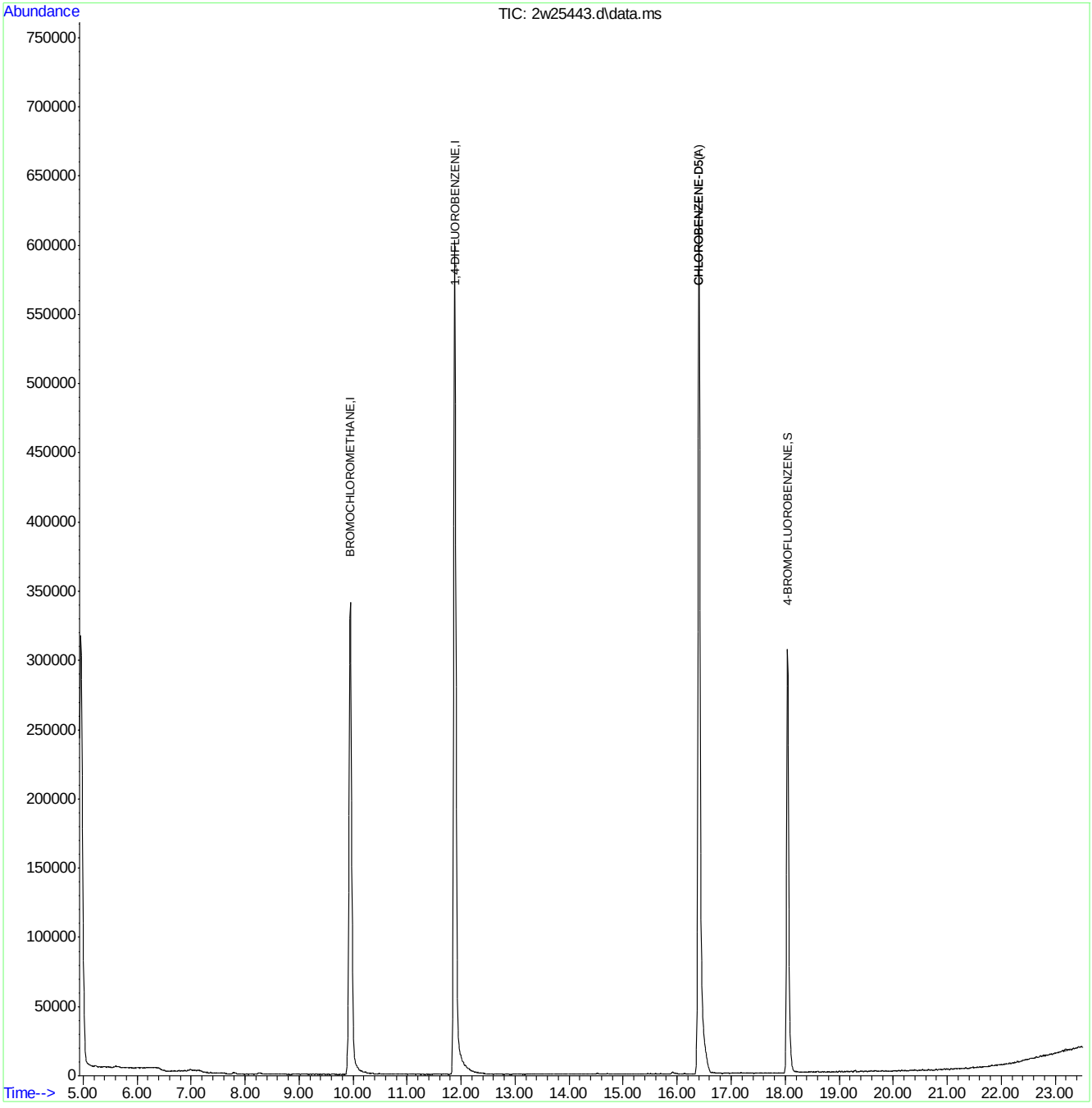
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25443.d
Acq On : 10 Sep 2009 5:39 am
Operator : YOUMINH
Sample : SCC(A590)
Misc : MS85028,V2W1073,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 10 09:58:14 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25482.D Vial: 12
Acq On : 11 Sep 2009 3:35 pm Operator: YOUMINH
Sample : SCC(A674) Inst : MS2W
Misc : MS85678,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:20 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.98	128	148781	10.00	PPBV	0.04
46) 1,4-DIFLUOROBENZENE	11.91	114	676588	10.00	PPBV	0.02
63) CHLOROBENZENE-D5	16.41	82	288197	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	287724	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	102181	3.48	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 69.60%

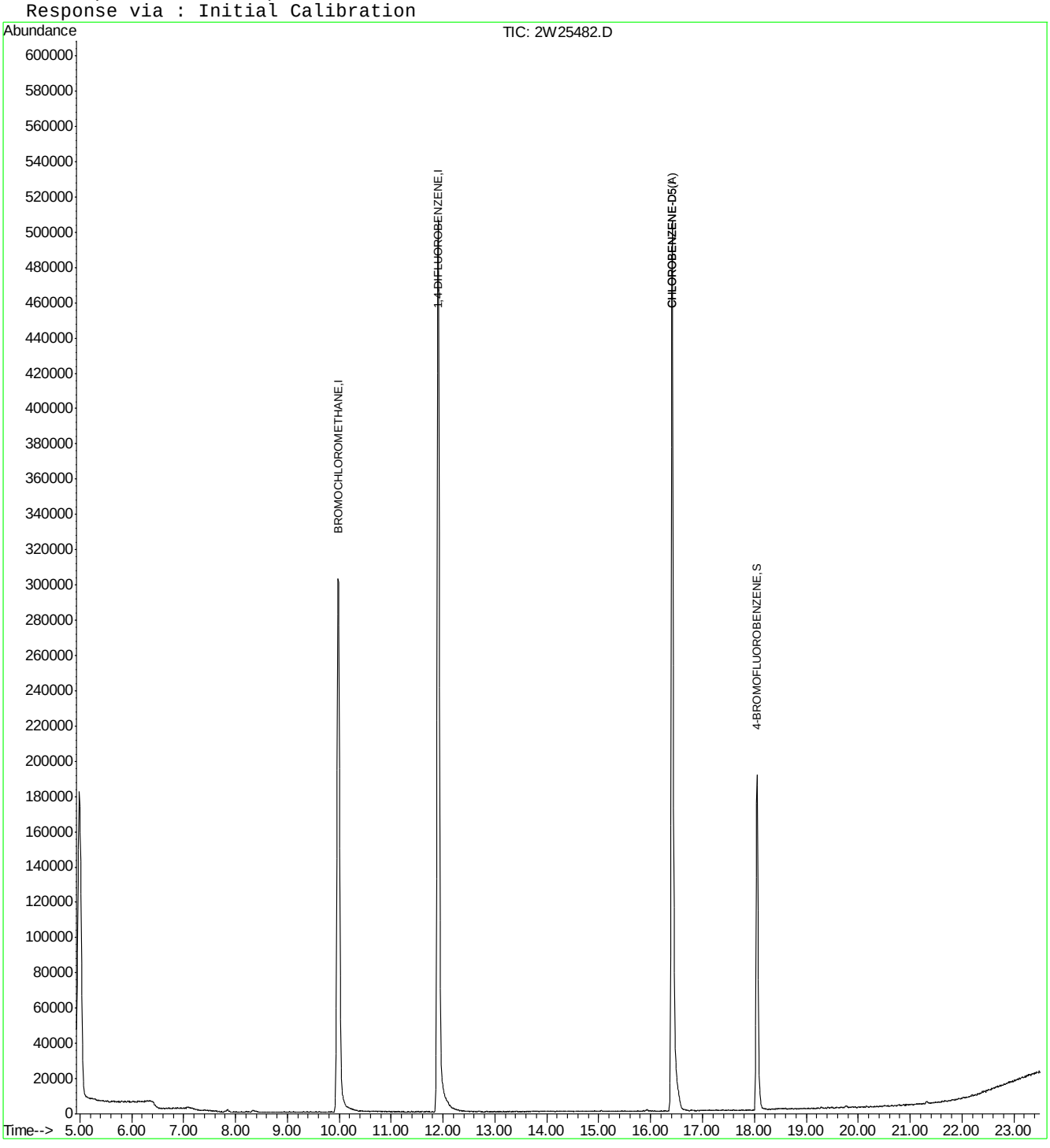
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25482.D Vial: 12
Acq On : 11 Sep 2009 3:35 pm Operator: YOUMINH
Sample : SCC(A674) Inst : MS2W
Misc : MS85678,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:15 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12870A.D Vial: 5
Acq On : 5 Oct 2009 12:24 pm Operator: YOUMINH
Sample : SCC(A425) Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:56 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	97525	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	387135	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	147587	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	147587	10.00	PPBV	-0.01

System Monitoring Compounds

78) 4-BROMOFLUOROBENZENE	15.34	95	66787	4.31	PPBV	-0.01

Spiked Amount 5.000 Range 65 - 128 Recovery = 86.20%

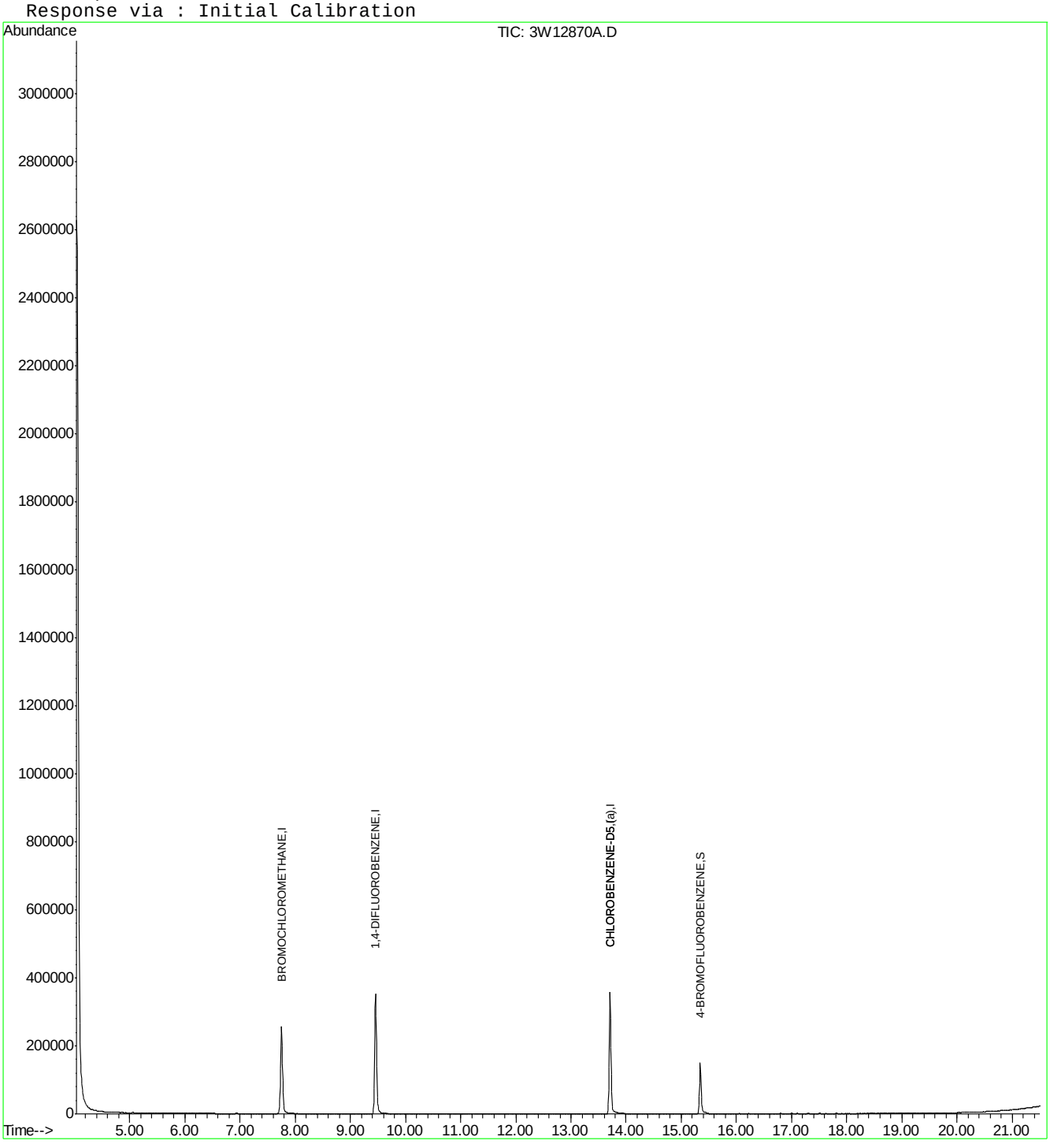
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

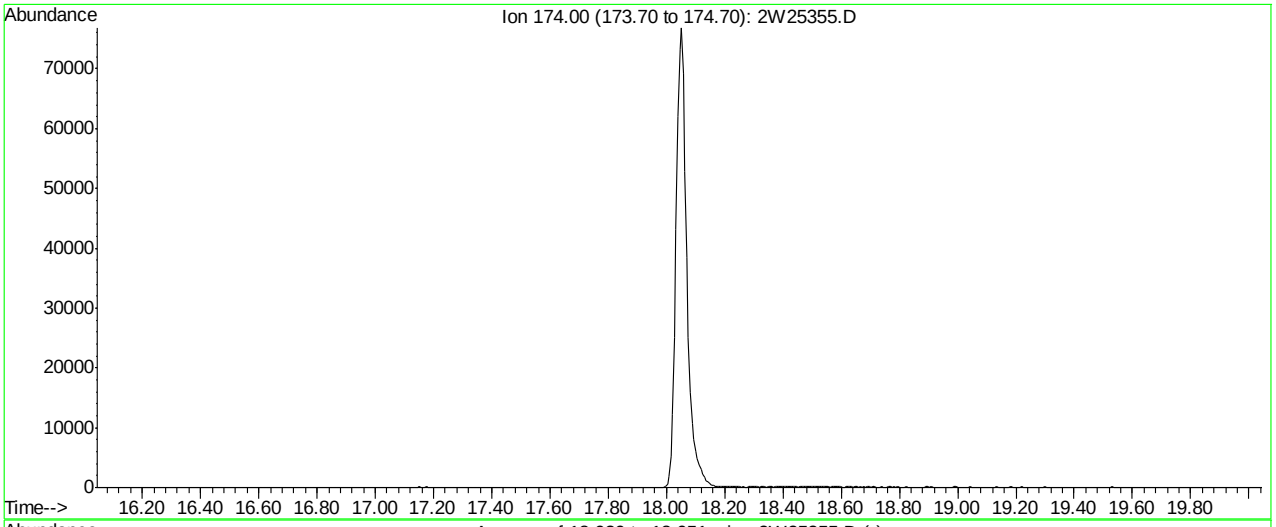
Data File : C:\MSDCHEM\1\DATA\3W12870A.D Vial: 5
Acq On : 5 Oct 2009 12:24 pm Operator: YOUMINH
Sample : SCC(A425) Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009 Quant Results File: M3W523.RES

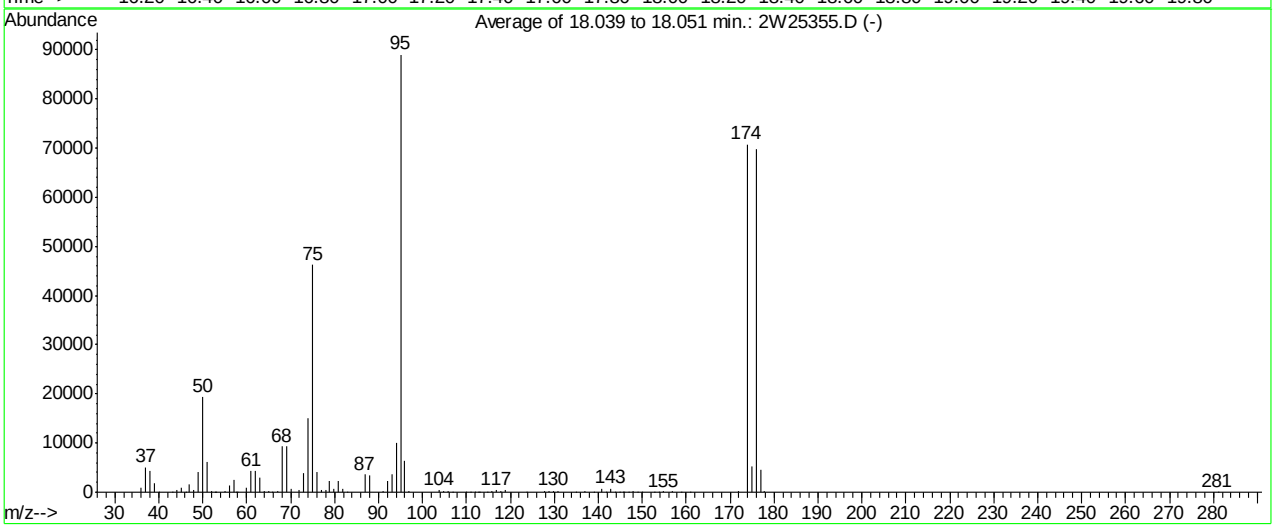
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



BFB

Data File : C:\MSDCHEM\1\DATA\2W25355.D Vial: 5
Acq On : 5 Sep 2009 10:16 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2155, 2156, 2157; Background Corrected with Scan 2144

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.7	19333	PASS
75	95	30	66	52.0	46261	PASS
95	95	100	100	100.0	89037	PASS
96	95	5	9	7.2	6398	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	79.5	70765	PASS
175	174	4	9	7.5	5329	PASS
176	174	93	101	98.6	69757	PASS
177	176	5	9	6.7	4659	PASS

2W25355.D M2W1070.M Sun Sep 06 15:06:35 2009 MS2W

Average of 18.039 to 18.051 min.: 2W25355.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	949	49.00	4208	59.95	843	72.00	465
37.00	5072	50.00	19333	61.00	4286	73.00	3786
38.00	4437	51.00	6173	62.00	4376	74.00	15169
39.00	1832	52.00	254	63.00	3028	75.00	46261
39.95	7	52.90	57	64.00	343	76.00	4096
43.05	58	53.10	21	65.00	263	76.90	489
44.00	425	55.00	250	65.90	27	77.95	413
45.00	1017	56.00	1411	67.05	261	78.90	2235
46.05	83	57.00	2521	68.00	9299	79.90	786
47.00	1645	57.70	23	69.00	9451	80.90	2352
47.95	571	58.00	53	70.00	799	81.90	636

Average of 18.039 to 18.051 min.: 2W25355.D
BFB
Modified:subtracted

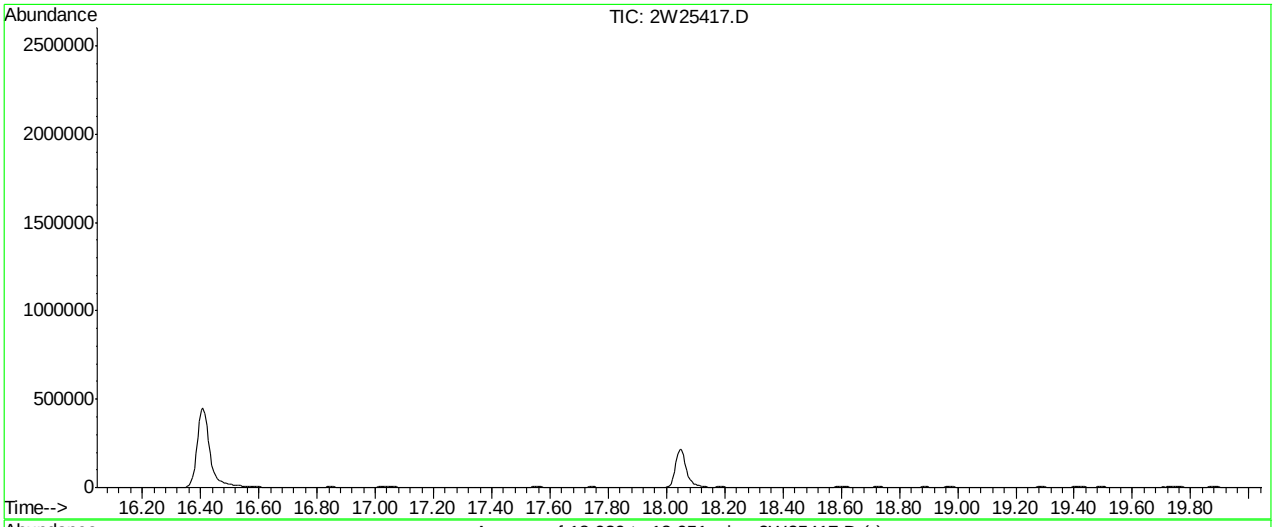
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
82.80	36	104.90	124	117.90	308	141.85	114
86.90	3611	105.85	305	118.90	378	142.90	793
87.90	3531	106.85	85	123.80	23	143.75	51
90.95	324	109.80	22	127.85	275	144.80	98
92.00	2372	110.90	56	128.90	158	145.70	25
93.00	3551	111.95	96	129.90	329	145.85	85
94.00	10024	112.80	40	130.90	133	146.85	102
95.00	89037	113.10	28	134.90	114	147.90	221
96.00	6398	114.85	74	136.85	151	148.90	35
96.95	215	115.85	277	138.90	21	149.85	66
103.85	372	116.90	412	140.90	783	152.90	27

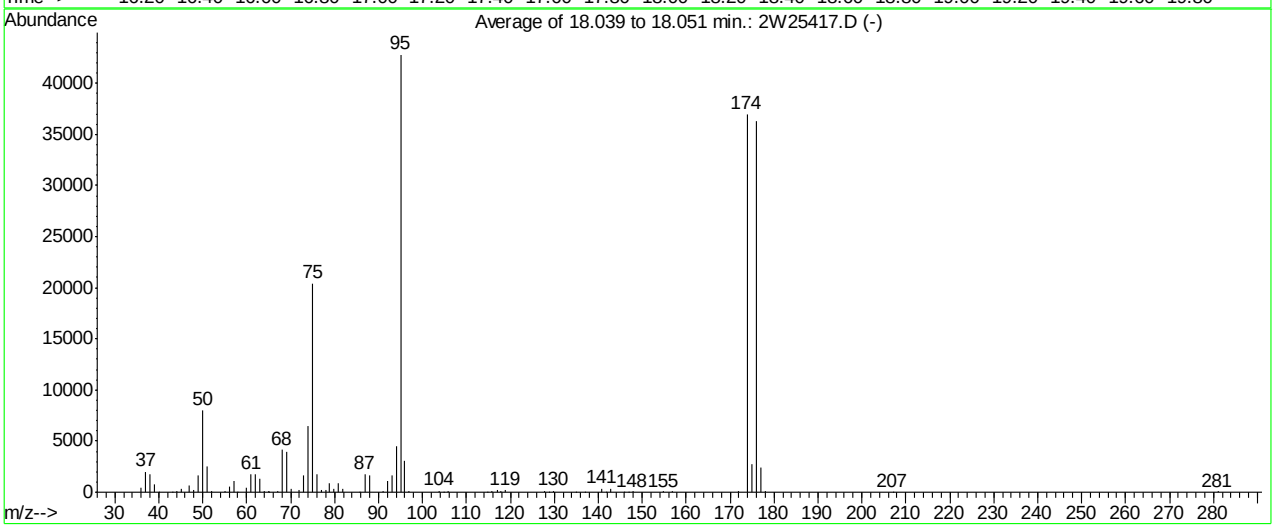
Average of 18.039 to 18.051 min.: 2W25355.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
153.80	39	281.05	108				
154.85	224						
156.85	166						
158.90	74						
160.85	115						
171.90	327						
173.90	70765						
174.90	5329						
175.90	69757						
176.90	4659						
177.85	138						

BFB

Data File : C:\MSDCHEM\1\DATA\V2W1073\2W25417.D Vial: 5
Acq On : 9 Sep 2009 8:18 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2155, 2156, 2157; Background Corrected with Scan 2144

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.8	8049	PASS
75	95	30	66	47.7	20416	PASS
95	95	100	100	100.0	42808	PASS
96	95	5	9	7.1	3021	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	86.4	36965	PASS
175	174	4	9	7.5	2778	PASS
176	174	93	101	98.3	36333	PASS
177	176	5	9	6.7	2417	PASS

2W25417.D M2W1070.M Thu Sep 10 09:04:17 2009 MS2W

Average of 18.039 to 18.051 min.: 2W25417.D
BFB
Modified:subtracted

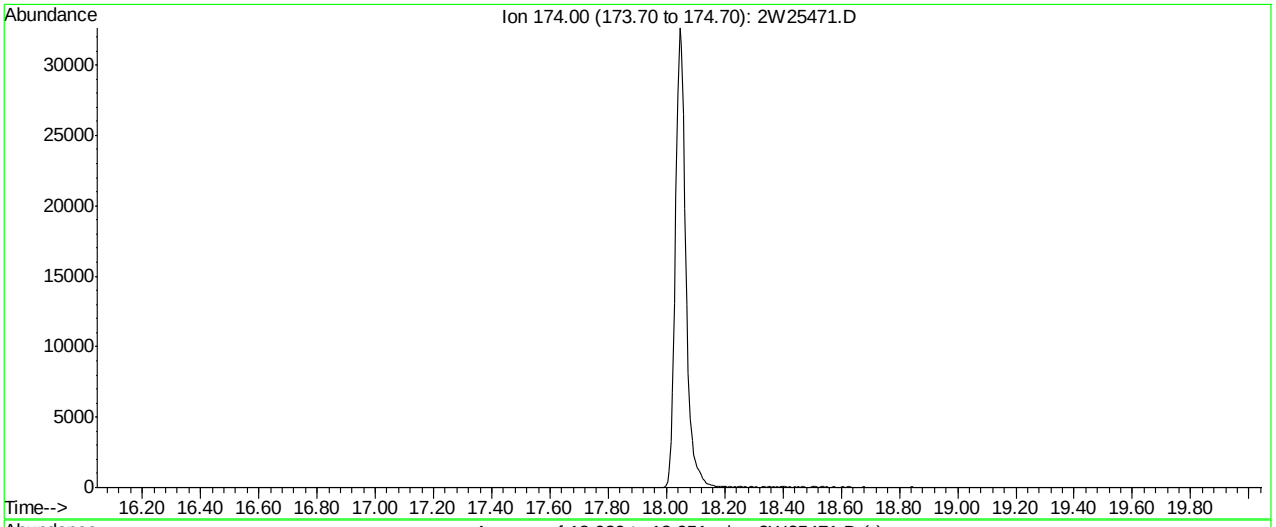
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	397	50.00	8049	64.05	125	76.00	1738
37.00	1980	51.00	2531	64.90	34	77.00	255
38.00	1775	52.00	128	65.05	61	77.95	213
39.00	745	55.00	151	67.05	126	78.90	901
39.95	8	56.00	600	68.00	4129	79.90	349
43.05	45	57.00	1076	69.00	3972	80.90	934
44.00	87	58.00	56	70.00	366	81.90	315
45.00	311	60.00	388	72.00	220	85.80	25
47.00	631	61.00	1808	73.00	1671	86.95	1779
47.95	273	62.00	1804	74.00	6442	87.95	1659
49.00	1699	63.00	1364	75.00	20416	90.95	159

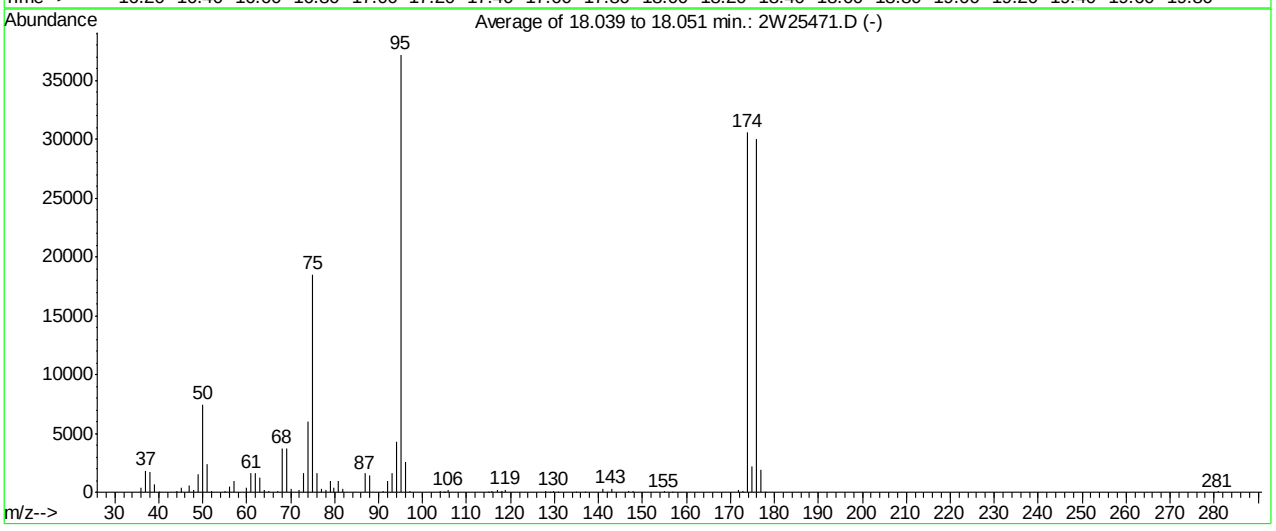
Average of 18.039 to 18.051 min.: 2W25417.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
92.00	1049	116.95	174	145.85	49	207.00	41
93.00	1675	117.85	151	146.95	44	281.05	86
94.00	4536	118.95	207	147.85	106		
95.00	42808	127.85	152	154.90	86		
96.00	3021	128.90	45	156.90	65		
96.95	103	129.85	161	171.85	88		
103.85	148	134.90	20	173.90	36965		
104.90	43	136.90	22	174.90	2778		
105.90	140	140.90	361	175.90	36333		
114.80	20	141.90	26	176.90	2417		
115.85	128	142.90	347	177.95	81		

BFB

Data File : C:\MSDCHEM\1\DATA\2W25471.D Vial: 5
Acq On : 11 Sep 2009 6:34 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS85028,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2155, 2156, 2157; Background Corrected with Scan 2145

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.0	7456	PASS
75	95	30	66	49.8	18520	PASS
95	95	100	100	100.0	37216	PASS
96	95	5	9	6.9	2584	PASS
173	174	0.00	2	0.3	77	PASS
174	95	50	120	82.3	30637	PASS
175	174	4	9	7.1	2189	PASS
176	174	93	101	97.9	29986	PASS
177	176	5	9	6.5	1955	PASS

2W25471.D M2W1070.M Sun Sep 13 11:34:48 2009 MS2W

Average of 18.039 to 18.051 min.: 2W25471.D
BFB
Modified:subtracted

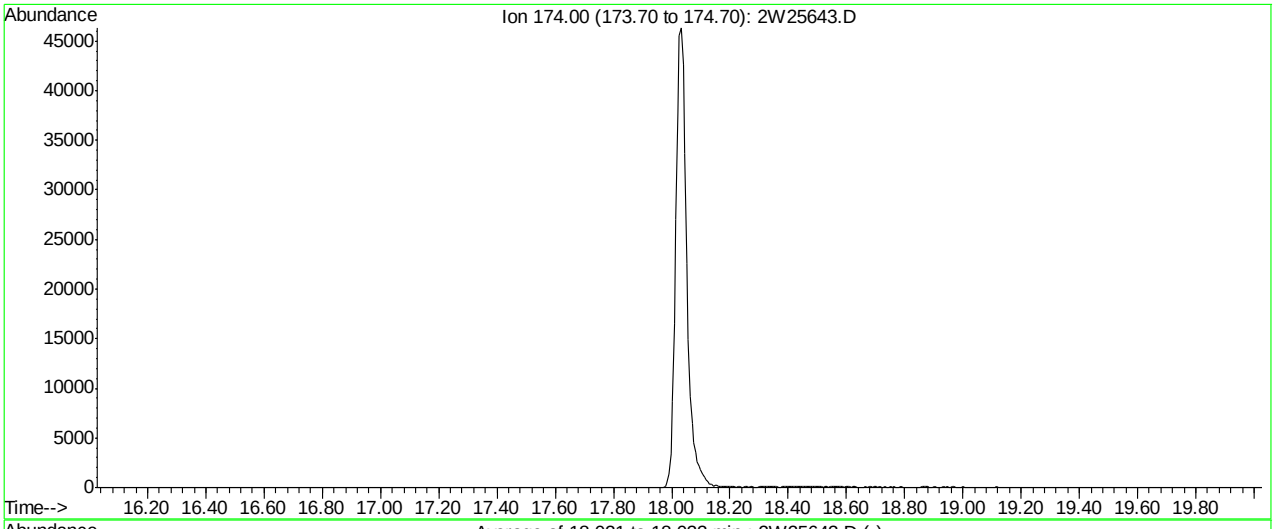
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	348	51.00	2360	66.95	96	78.90	954
37.00	1830	52.00	121	68.00	3724	79.90	413
38.00	1674	54.95	105	69.00	3756	80.90	932
39.00	699	56.00	510	70.00	318	81.95	257
40.00	20	57.00	979	71.95	195	86.90	1580
44.00	139	60.00	366	73.00	1657	87.90	1440
45.00	369	61.00	1657	74.00	6043	90.90	118
47.00	579	62.00	1636	75.00	18520	91.95	964
48.00	221	63.00	1220	76.00	1601	93.00	1594
49.00	1500	63.95	155	76.95	244	94.00	4276
50.00	7456	65.05	130	77.95	170	95.00	37216

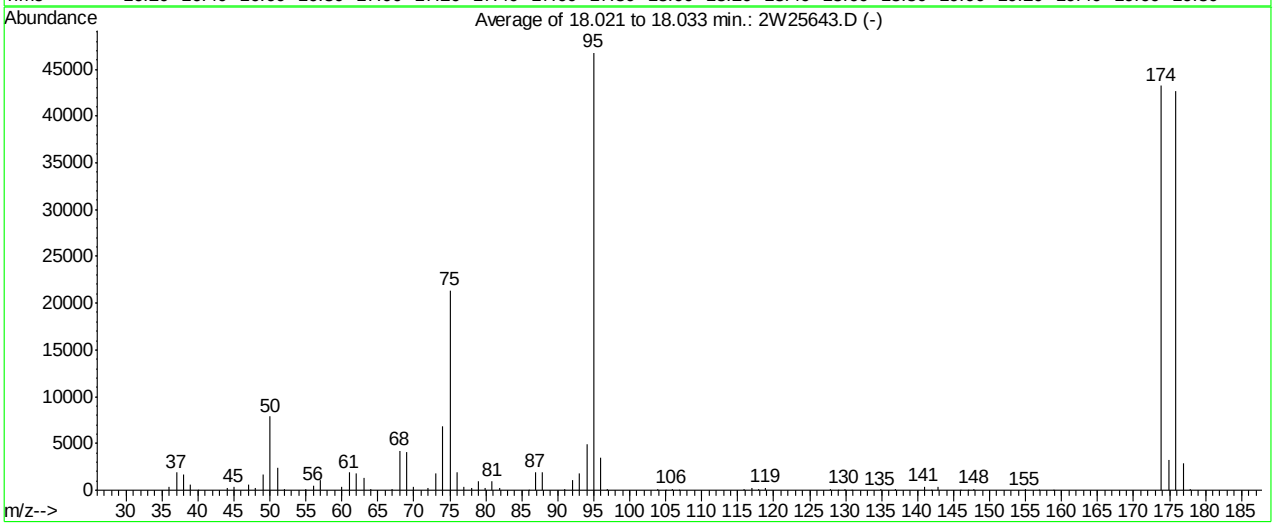
Average of 18.039 to 18.051 min.: 2W25471.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	2584	118.90	193	147.90	81		
97.05	81	127.90	119	154.90	88		
103.90	125	128.90	48	156.80	29		
104.80	21	129.85	137	171.85	162		
105.00	23	130.85	44	172.90	77		
105.90	160	134.90	21	173.90	30637		
114.90	22	136.80	25	174.90	2189		
115.85	137	140.90	281	175.90	29986		
116.90	165	141.90	20	176.90	1955		
117.80	39	142.90	336	177.90	44		
117.95	69	146.95	99	280.95	91		

BFB

Data File : C:\MSDCHEM\1\DATA\2W25643.D Vial: 5
Acq On : 22 Sep 2009 4:01 pm Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2152, 2153, 2154; Background Corrected with Scan 2142

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.8	7860	PASS
75	95	30	66	45.6	21336	PASS
95	95	100	100	100.0	46797	PASS
96	95	5	9	7.4	3480	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	92.4	43234	PASS
175	174	4	9	7.4	3189	PASS
176	174	93	101	98.7	42669	PASS
177	176	5	9	6.7	2872	PASS

2W25643.D M2W1080.M Fri Sep 25 12:37:19 2009 MS2W

Average of 18.021 to 18.033 min.: 2W25643.D
BFB
Modified:subtracted

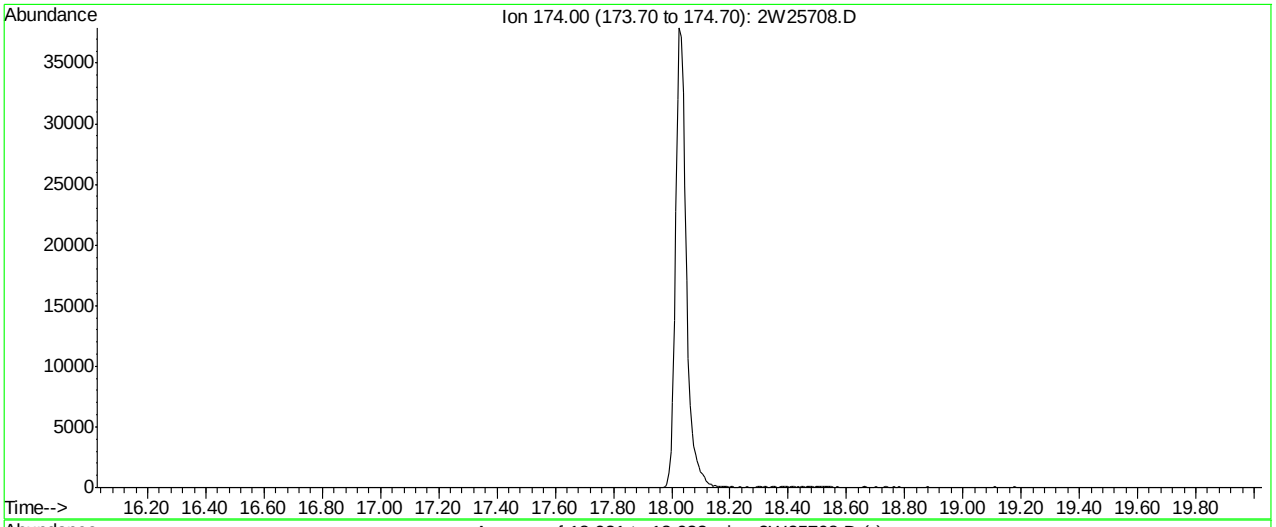
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	339	51.00	2342	68.00	4232	79.90	292
37.00	1893	51.95	121	69.00	4070	80.90	980
38.00	1647	55.00	121	70.00	369	81.90	211
39.00	638	56.00	506	71.95	235	86.00	23
39.95	8	57.00	1111	73.00	1779	86.90	1974
44.00	218	60.00	349	74.00	6845	87.90	1931
45.00	356	61.00	1869	75.00	21336	90.90	145
47.00	602	62.00	1816	76.00	1881	92.00	1128
48.00	230	63.00	1332	76.90	334	93.00	1760
49.00	1691	64.05	130	77.95	233	94.00	4949
50.00	7860	66.95	102	78.90	917	95.00	46797

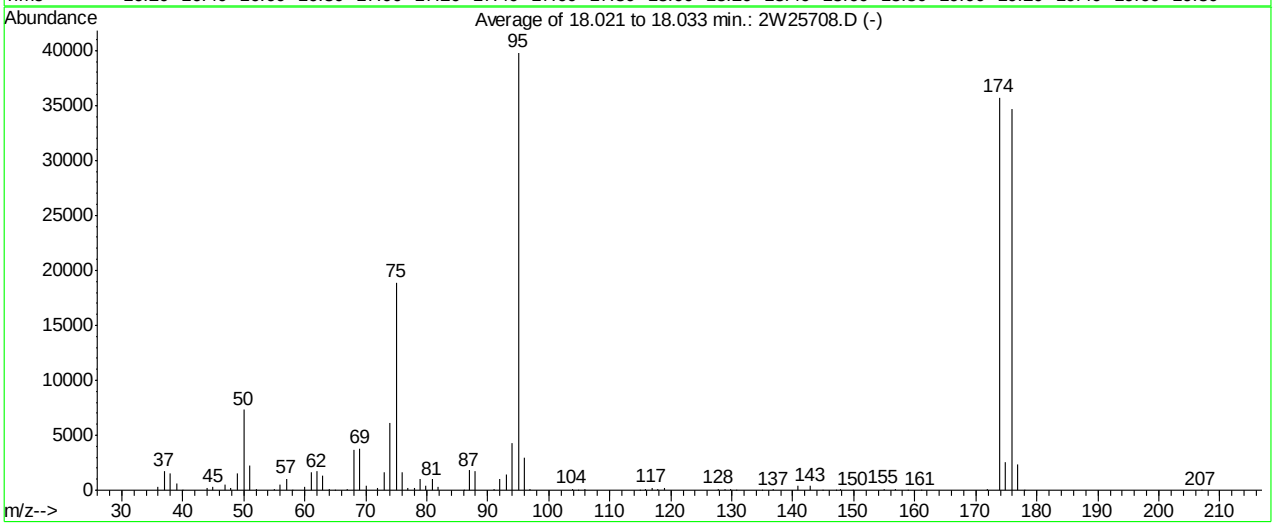
Average of 18.021 to 18.033 min.: 2W25643.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	3480	128.90	56	154.90	109		
96.95	101	129.90	166	156.90	61		
103.85	171	130.90	30	158.85	42		
105.00	23	134.85	81	173.90	43234		
105.85	183	136.85	66	174.90	3189		
106.90	26	140.90	373	175.90	42669		
115.85	132	141.95	43	176.90	2872		
116.90	224	142.90	346	177.85	80		
117.90	135	145.90	47				
118.90	243	147.00	25				
127.85	143	147.85	130				

BFB

Data File : C:\MSDCHEM\1\DATA\2W25708.D Vial: 5
Acq On : 28 Sep 2009 5:58 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2152, 2153, 2154; Background Corrected with Scan 2142

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.4	7339	PASS
75	95	30	66	47.4	18877	PASS
95	95	100	100	100.0	39821	PASS
96	95	5	9	7.6	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	89.7	35712	PASS
175	174	4	9	7.3	2595	PASS
176	174	93	101	97.1	34677	PASS
177	176	5	9	6.7	2321	PASS

2W25708.D M2W1080.M Tue Sep 29 10:48:14 2009 MS2W

Average of 18.021 to 18.033 min.: 2W25708.D
BFB
Modified:subtracted

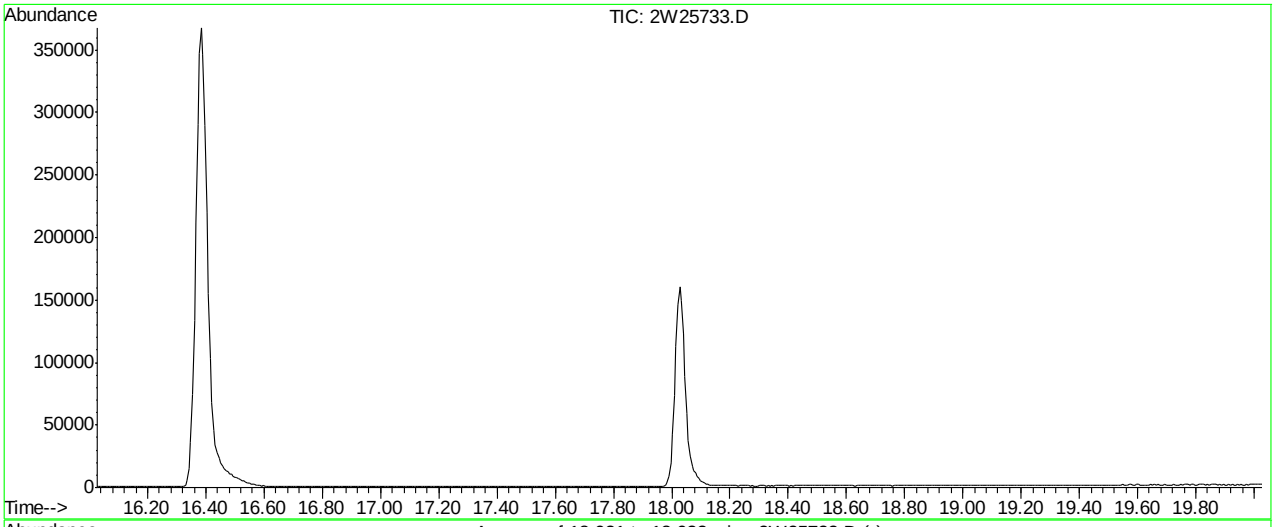
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	357	51.00	2285	65.00	21	78.05	219
37.00	1784	52.00	110	67.00	62	78.90	1029
38.00	1532	55.05	128	68.00	3721	79.90	414
39.00	620	56.00	538	69.00	3818	80.90	1015
39.95	16	57.00	1029	70.00	376	81.90	340
44.00	197	58.00	21	71.95	179	86.10	27
45.00	297	59.95	357	73.00	1679	86.95	1793
47.00	542	61.00	1676	74.00	6142	87.90	1780
47.95	247	62.00	1704	75.00	18877	90.95	120
49.00	1521	63.00	1301	76.00	1590	92.00	984
50.00	7339	63.95	128	76.95	249	93.00	1421

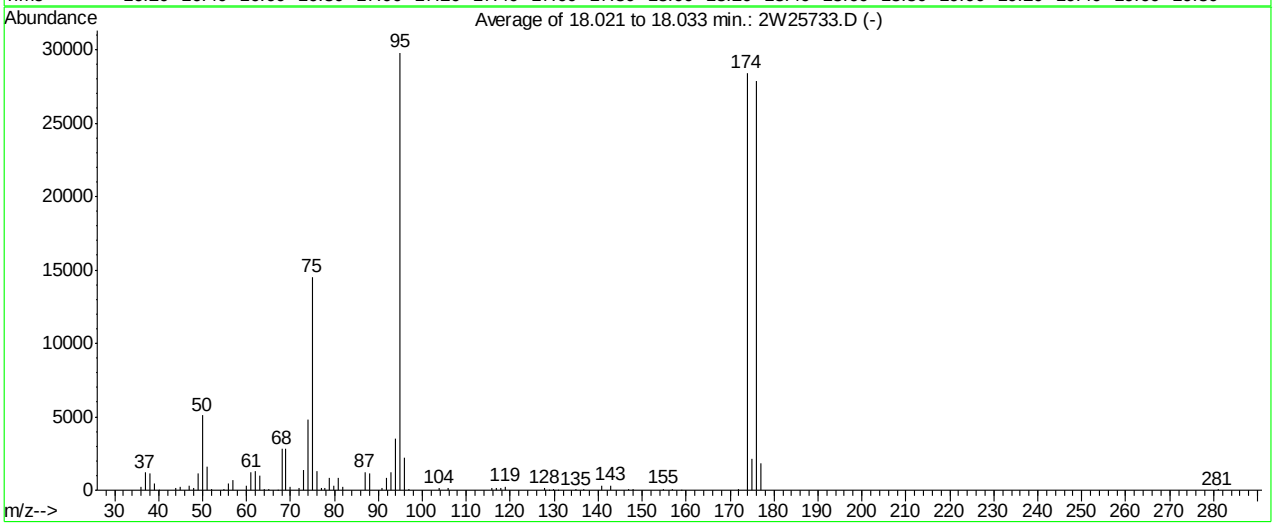
Average of 18.021 to 18.033 min.: 2W25708.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
94.00	4294	118.90	225	147.80	93	177.90	49
95.00	39821	127.85	130	149.90	20	206.90	26
96.00	3008	128.85	76	154.90	117		
97.00	97	129.85	129	156.90	72		
103.90	151	130.80	21	158.90	26		
104.90	24	134.90	24	161.00	20		
105.85	149	136.85	62	171.85	75		
114.90	20	140.90	374	173.90	35712		
115.90	123	142.90	388	174.90	2595		
116.90	226	144.90	20	175.90	34677		
117.90	135	147.00	21	176.90	2321		

BFB

Data File : C:\MSDCHEM\1\DATA\2W25733.D Vial: 5
Acq On : 29 Sep 2009 7:55 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1084,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2152, 2153, 2154; Background Corrected with Scan 2142

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	17.1	5091	PASS
75	95	30	66	48.7	14523	PASS
95	95	100	100	100.0	29808	PASS
96	95	5	9	7.4	2214	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	95.3	28410	PASS
175	174	4	9	7.4	2102	PASS
176	174	93	101	98.1	27880	PASS
177	176	5	9	6.7	1855	PASS

2W25733.D M2W1080.M Wed Sep 30 10:57:51 2009 MS2W

Average of 18.021 to 18.033 min.: 2W25733.D
BFB
Modified:subtracted

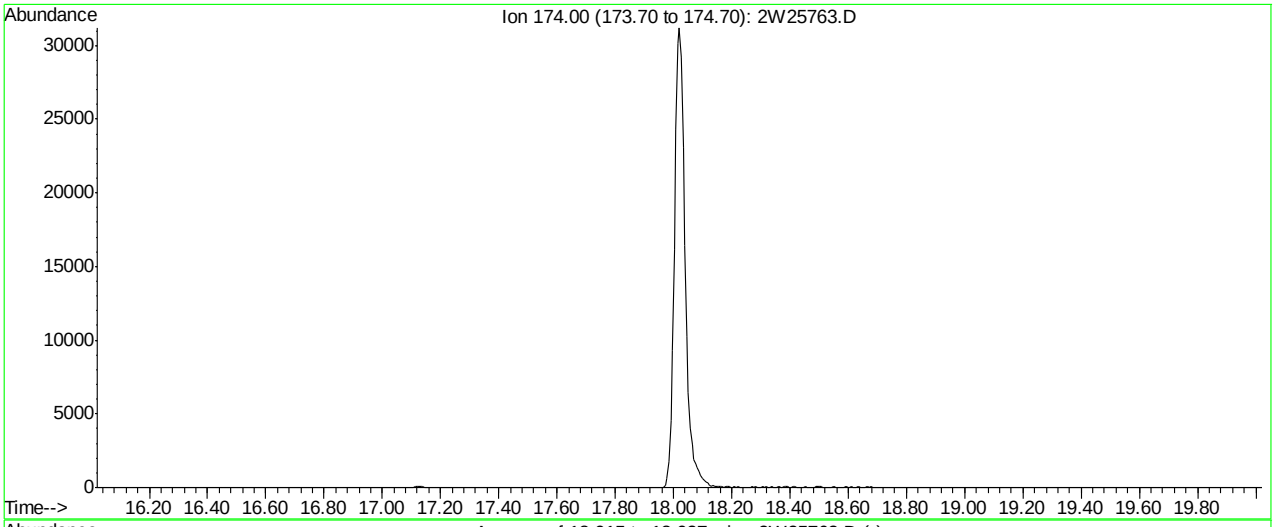
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	240	51.00	1631	67.00	23	78.90	871
37.00	1215	52.00	55	68.00	2798	79.90	311
38.00	1112	54.95	82	69.00	2807	80.90	847
39.00	453	56.00	430	70.00	222	81.90	253
40.00	22	57.00	695	72.00	170	86.90	1228
44.00	146	59.95	274	73.00	1398	87.95	1176
44.95	260	61.00	1248	74.00	4848	90.85	117
47.00	316	62.00	1308	75.00	14523	91.95	813
48.00	156	63.00	1020	76.00	1309	92.95	1236
49.00	1135	63.95	93	77.00	177	94.00	3479
50.00	5091	65.05	51	77.90	140	95.00	29808

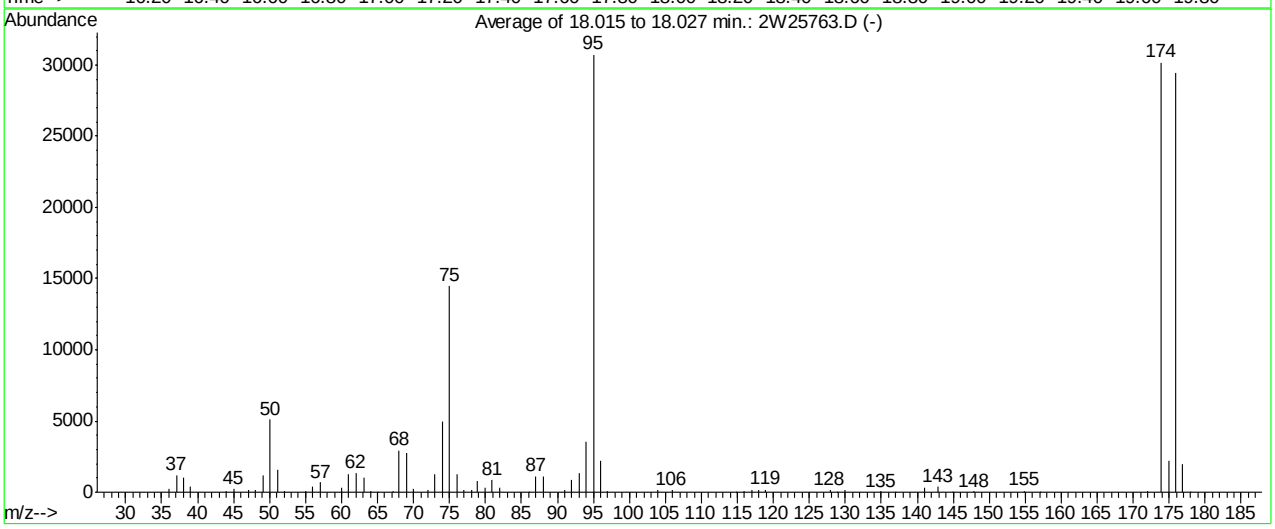
Average of 18.021 to 18.033 min.: 2W25733.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	2214	130.90	22	173.90	28410		
96.95	84	134.95	75	174.90	2102		
103.85	147	136.80	50	175.90	27880		
105.90	123	140.90	321	176.90	1855		
115.85	140	142.85	323	281.00	41		
116.90	180	147.00	75				
117.90	117	147.85	95				
118.90	230	154.90	88				
127.90	120	156.90	77				
128.90	21	158.90	20				
129.85	93	171.85	108				

BFB

Data File : C:\MSDCHEM\1\DATA\2W25763.D Vial: 5
Acq On : 2 Oct 2009 6:47 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2151, 2152, 2153; Background Corrected with Scan 2140

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.5	5083	PASS
75	95	30	66	47.1	14468	PASS
95	95	100	100	100.0	30738	PASS
96	95	5	9	7.2	2216	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	98.2	30186	PASS
175	174	4	9	7.3	2201	PASS
176	174	93	101	97.6	29464	PASS
177	176	5	9	6.7	1981	PASS

2W25763.D M2W1085.M Tue Oct 06 11:13:19 2009 MS2W

Average of 18.015 to 18.027 min.: 2W25763.D
BFB
Modified:subtracted

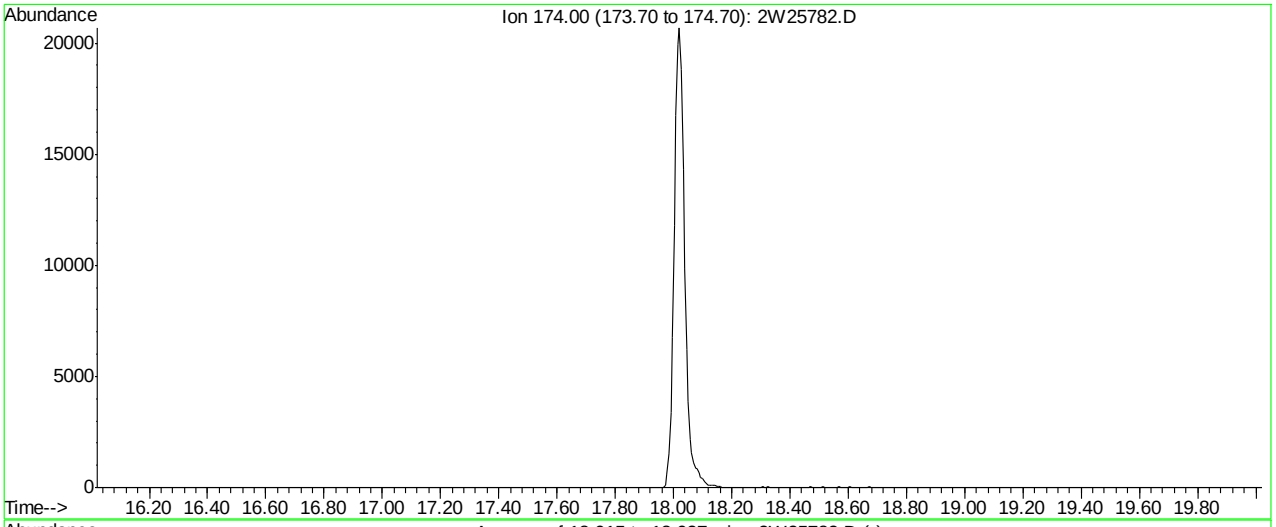
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	227	52.10	90	68.00	2954	79.95	333
37.10	1208	54.95	94	69.00	2766	80.95	844
38.10	991	56.00	427	70.05	247	81.95	298
39.05	433	57.05	696	72.05	169	86.00	22
44.00	119	60.00	286	73.00	1261	87.00	1110
45.05	203	61.00	1278	74.00	4946	88.00	1096
47.05	173	62.00	1373	75.00	14468	91.00	131
48.05	161	63.05	1065	76.00	1285	92.00	894
49.05	1149	64.00	100	77.00	178	93.00	1318
50.10	5083	65.00	29	78.00	129	94.00	3532
51.05	1592	67.10	105	78.90	817	95.00	30738

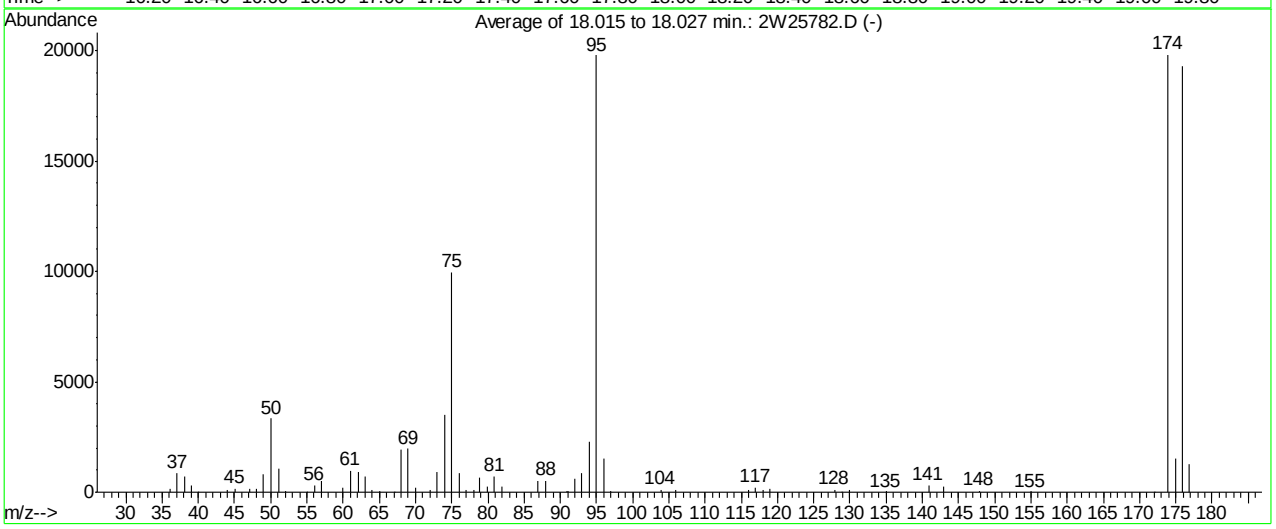
Average of 18.015 to 18.027 min.: 2W25763.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	2216	129.90	121	174.95	2201		
96.95	96	134.95	46	175.95	29464		
103.95	137	136.90	23	176.90	1981		
105.90	157	140.95	299	177.90	21		
114.90	27	142.90	367				
115.90	109	144.90	22				
116.95	174	147.90	77				
117.90	125	154.90	98				
118.95	185	157.00	32				
127.90	126	172.00	52				
128.80	25	173.95	30186				

BFB

Data File : C:\MSDCHEM\1\DATA\2W25782.D Vial: 5
Acq On : 5 Oct 2009 6:27 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2151, 2152, 2153; Background Corrected with Scan 2140

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	16.9	3347	PASS
75	95	30	66	50.3	9956	PASS
95	95	100	100	100.0	19784	PASS
96	95	5	9	7.7	1521	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	100.2	19824	PASS
175	174	4	9	7.7	1532	PASS
176	174	93	101	97.2	19272	PASS
177	176	5	9	6.7	1287	PASS

2W25782.D M2W1085.M Tue Oct 06 11:55:29 2009 MS2W

Average of 18.015 to 18.027 min.: 2W25782.D
BFB
Modified:subtracted

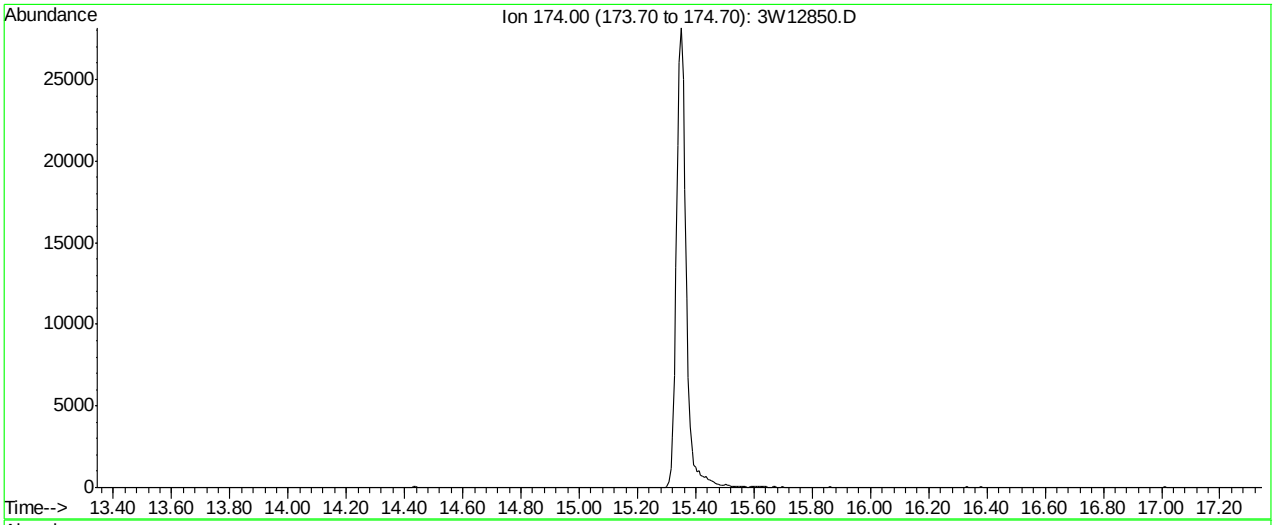
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	179	51.05	1071	67.10	21	78.90	661
37.05	886	52.05	59	68.00	1940	79.95	259
38.10	716	55.00	22	69.00	1972	80.90	727
39.10	307	56.05	329	70.00	204	81.95	242
40.00	20	57.00	517	72.00	121	86.95	485
44.00	106	60.00	217	73.00	892	88.00	520
45.05	175	61.00	991	74.00	3493	90.90	52
47.10	132	62.05	912	75.00	9956	91.10	30
48.05	138	63.05	732	76.00	882	92.00	617
49.00	801	64.05	91	77.00	117	93.00	868
50.10	3347	65.10	27	78.05	84	94.00	2275

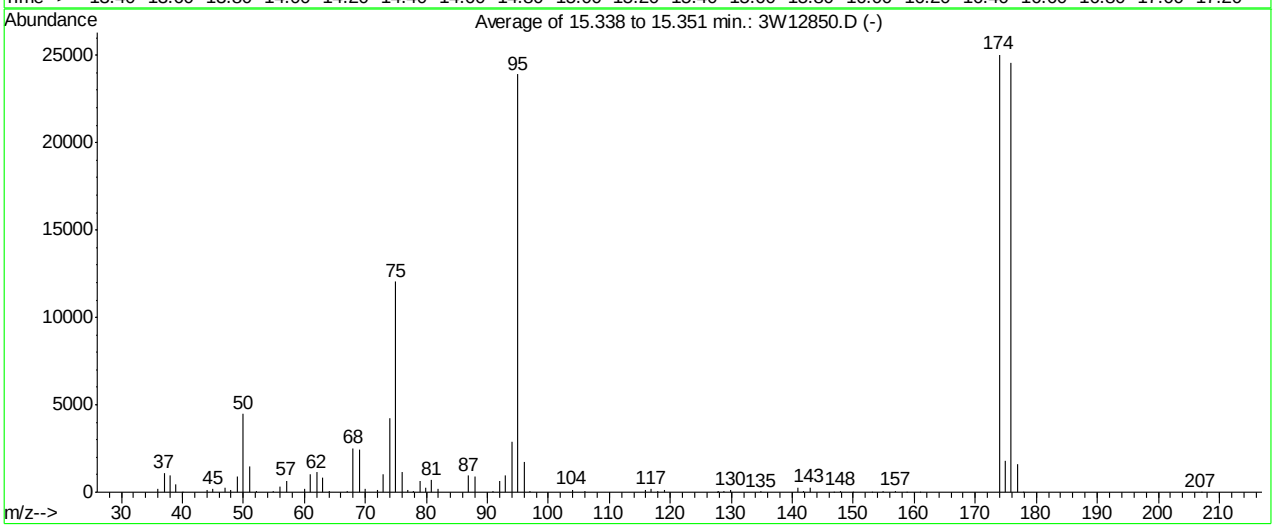
Average of 18.015 to 18.027 min.: 2W25782.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
95.00	19784	129.95	95				
96.00	1521	135.00	29				
97.00	29	140.90	320				
103.85	120	142.95	276				
105.90	106	147.85	74				
115.95	117	154.95	45				
116.95	213	172.00	25				
117.95	113	173.95	19824				
118.90	151	174.95	1532				
127.90	103	175.95	19272				
128.80	21	176.90	1287				

BFB

Data File : C:\MSDCHEM\1\DATA\3W12850.D Vial: 5
Acq On : 2 Oct 2009 7:06 pm Operator: YOUMINH
Sample : BFB Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um





AutoFind: Scans 1859, 1860, 1861; Background Corrected with Scan 1849

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.7	4462	PASS
75	95	30	66	50.4	12055	PASS
95	95	100	100	100.0	23920	PASS
96	95	5	9	7.3	1743	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	104.7	25045	PASS
175	174	4	9	7.2	1800	PASS
176	174	93	101	98.0	24549	PASS
177	176	5	9	6.6	1618	PASS

3W12850.D M3W523.M Tue Oct 06 12:25:22 2009 MS3W

Average of 15.338 to 15.351 min.: 3W12850.D
BFB
Modified:subtracted

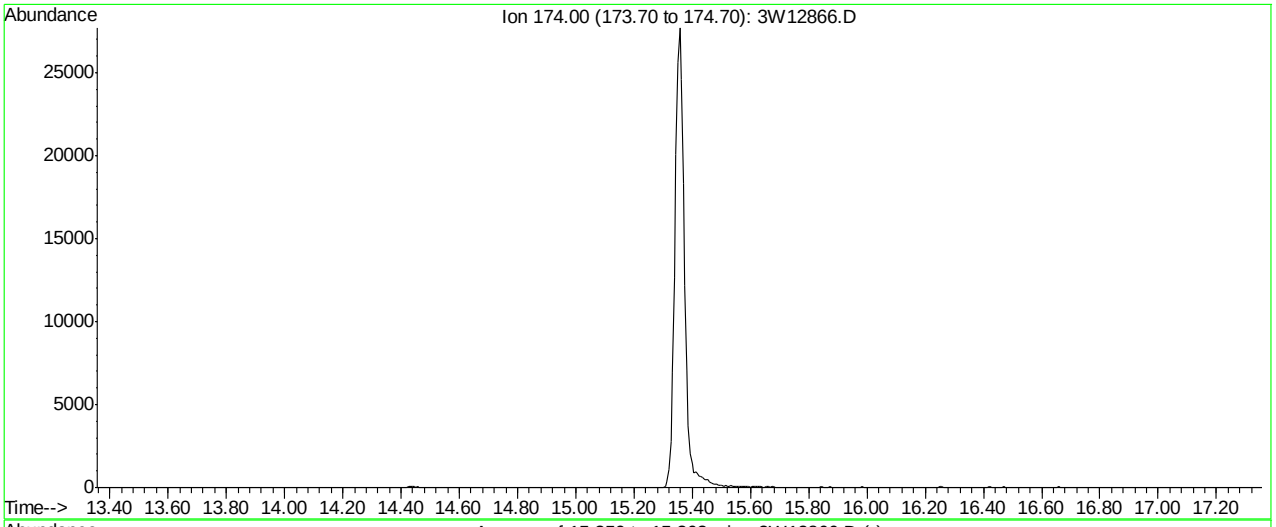
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	205	51.05	1472	68.00	2526	79.95	238
37.05	1099	52.05	75	69.00	2435	80.90	695
38.05	989	54.95	70	69.95	218	81.95	176
39.00	440	56.00	329	72.00	156	86.90	957
40.00	24	57.05	651	73.00	1038	87.95	892
44.00	132	60.00	215	74.00	4243	90.95	91
45.05	187	61.00	1058	75.00	12055	92.00	667
47.00	230	62.00	1134	76.00	1134	93.00	992
48.00	134	63.05	805	76.95	138	94.00	2881
49.00	922	64.05	98	77.90	84	95.00	23920
50.00	4462	67.00	57	78.95	653	96.00	1743

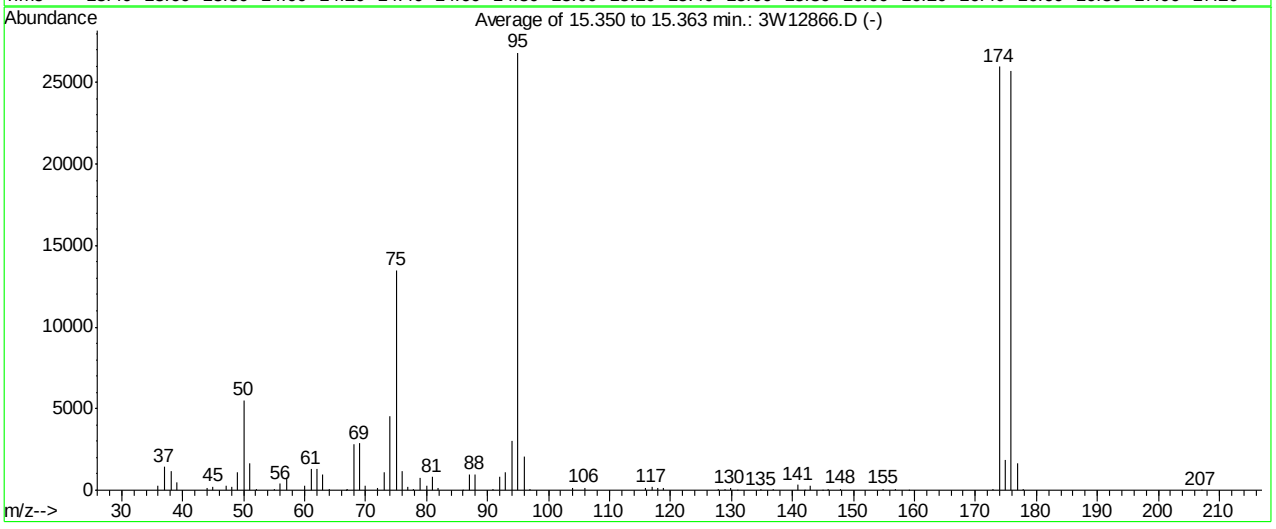
Average of 15.338 to 15.351 min.: 3W12850.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
97.05	60	134.90	62	160.90	17		
103.90	129	140.90	241	173.90	25045		
105.90	96	141.90	38	174.90	1800		
115.85	102	142.90	270	175.90	24549		
116.90	173	146.80	16	176.90	1618		
117.85	95	147.90	80	177.90	17		
118.95	132	149.90	19	207.00	24		
127.70	20	153.00	19				
127.90	66	154.90	46				
128.75	39	156.95	70				
129.90	119	158.80	34				

BFB

Data File : C:\MSDCHEM\1\DATA\3W12866.D Vial: 5
Acq On : 5 Oct 2009 7:13 am Operator: YOUMINH
Sample : BFB Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um





AutoFind: Scans 1861, 1862, 1863; Background Corrected with Scan 1851

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.5	5509	PASS
75	95	30	66	50.3	13487	PASS
95	95	100	100	100.0	26834	PASS
96	95	5	9	7.7	2061	PASS
173	174	0.00	2	0.3	70	PASS
174	95	50	120	96.7	25957	PASS
175	174	4	9	7.1	1846	PASS
176	174	93	101	99.1	25720	PASS
177	176	5	9	6.4	1648	PASS

3W12866.D M3W523.M Tue Oct 06 13:01:48 2009 MS3W

Average of 15.350 to 15.363 min.: 3W12866.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	274	52.05	82	68.00	2789	79.95	272
37.00	1439	55.05	84	69.00	2860	80.90	794
38.05	1184	56.05	385	70.00	245	81.90	160
39.05	465	57.00	779	71.95	128	86.00	25
44.00	128	60.00	271	73.00	1117	86.95	973
45.00	228	61.05	1281	74.00	4562	87.90	988
47.05	309	62.00	1276	75.00	13487	90.95	99
48.00	200	63.00	949	76.00	1194	92.00	826
49.00	1112	64.00	89	76.95	184	93.00	1113
50.00	5509	66.80	20	77.90	73	94.00	3035
51.05	1674	67.05	56	78.95	771	95.00	26834

Average of 15.350 to 15.363 min.: 3W12866.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	2061	130.90	21	159.00	17		
96.95	44	134.90	63	172.80	70		
103.95	129	136.85	39	173.90	25957		
105.90	153	140.90	317	174.90	1846		
115.90	120	142.00	21	175.90	25720		
116.95	189	142.95	281	176.90	1648		
117.95	127	144.90	26	177.80	42		
118.90	156	145.85	41	207.00	17		
127.85	89	147.95	69				
128.95	42	154.95	87				
129.85	130	156.90	79				

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:37 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	121875	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	602919	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	324618	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	324618	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	180344	5.45	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 109.00%

Target Compounds						Qvalue
2) FREON 115	5.01	119	115320	9.19	PPBV	100
3) DICHLORODIFLUOROMETHANE	5.01	85	180109	9.51	PPBV	100
4) FREON 152A	5.13	65	131899	10.15	PPBV	100
5) CHLORODIFLUOROMETHANE	5.17	67	50430	9.94	PPBV	100
6) PROPYLENE	5.21	41	214297	10.05	PPBV	100
7) PROPANE	5.24	43	76207	9.17	PPBV #	100
8) FREON 114	5.56	85	497134	9.78	PPBV	100
9) CHLOROMETHANE	5.46	52	70283	9.86	PPBV	97
10) VINYL CHLORIDE	5.69	62	226276	10.13	PPBV	100
11) 1,3-BUTADIENE	5.82	54	176547	10.32	PPBV	100
12) n-BUTANE	5.88	43	367874	9.99	PPBV	100
13) BROMOMETHANE	6.11	94	174888	9.77	PPBV	100
14) CHLOROETHANE	6.28	64	122721	10.39	PPBV	100
15) FREON 123	6.75	83	390491	10.12	PPBV #	100
16) FREON 123A	6.81	117	203864	9.70	PPBV	100
17) TRICHLOROFLUOROMETHANE	7.05	101	406630	9.60	PPBV	100
18) ISOPROPYL ALCOHOL	7.08	45	303139	9.72	PPBV	100
19) ACETONE	6.86	58	84912	9.62	PPBV	100
20) PENTANE	7.40	42	244369	9.43	PPBV	100
21) TVHC as EQUIV PENTANE	7.39	TIC	1459582m	10.27	PPBV	
22) ETHYL ETHER	7.39	74	86494	10.19	PPBV	100
23) IODOMETHANE	7.63	142	418692	10.05	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.69	96	159177	9.52	PPBV	100
25) CARBON DISULFIDE	8.15	76	552501	9.68	PPBV	100
26) ETHANOL	6.38	45	67692	9.29	PPBV	100
27) BROMOETHENE	6.64	106	165747	10.08	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	153657	9.15	PPBV	99
29) 3-CHLOROPROPENE	7.92	76	86156	10.18	PPBV	100
30) FREON 113	8.05	151	253620	9.61	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	194366	9.82	PPBV	100
32) TERTIARY BUTYL ALCOHOL	7.69	59	362174	10.26	PPBV	100
33) METHYL TERTIARY BUTYL ETHE	8.97	73	470257	10.08	PPBV	100
34) TETRAHYDROFURAN	10.48	42	253551	10.59	PPBV	100
35) HEXANE	9.98	57	305394	10.30	PPBV	100
36) VINYL ACETATE	9.04	86	41483	10.64	PPBV	100
37) 1,1-DICHLOROETHANE	8.94	63	377623	10.16	PPBV	100
38) METHYL ETHYL KETONE	9.30	72	91118	10.18	PPBV	100
39) cis-1,2-DICHLOROETHYLENE	9.77	96	192874	9.96	PPBV	100
40) ETHYL ACETATE	9.95	61	57311	10.16	PPBV	100
41) CHLOROFORM	10.07	83	358439	10.13	PPBV	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:37 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	362219	10.42	PPBV		100
43)	1,1,1-TRICHLOROETHANE	11.09	97	367972	10.16	PPBV		100
44)	CARBON TETRACHLORIDE	11.72	117	379122	10.08	PPBV		100
45)	1,2-DICHLOROETHANE	10.82	62	264373	10.41	PPBV		100
47)	BENZENE	11.56	78	603850	9.70	PPBV		100
48)	CYCLOHEXANE	11.85	84	259784	9.31	PPBV		100
49)	2,3-DIMETHYLPENTANE	12.06	71	132993	10.26	PPBV		100
50)	TRICHLOROETHYLENE	12.62	95	221136	9.76	PPBV		100
51)	1,2-DICHLOROPROPANE	12.39	63	237516	10.25	PPBV		100
52)	BROMODICHLOROMETHANE	12.58	83	381640	10.32	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	841921	9.85	PPBV		100
54)	1,4-DIOXANE	12.62	88	109047	9.62	PPBV		100
55)	METHYL METHACRYLATE	12.78	69	184302	10.21	PPBV		100
56)	HEPTANE	12.89	43	378222	10.04	PPBV		100
57)	TVHC as EQUIV HEPTANE	12.90	TIC	1537019m	10.06	PPBV		
58)	METHYL ISOBUTYL KETONE	13.51	43	433341	9.97	PPBV		100
59)	cis-1,3-DICHLOROPROPENE	13.49	75	320130	10.62	PPBV		100
60)	TOLUENE	14.53	92	392299	10.38	PPBV		100
61)	trans-1,3-DICHLOROPROPENE	14.03	75	300475	10.56	PPBV		100
62)	1,1,2-TRICHLOROETHANE	14.22	83	188848	10.26	PPBV		100
64)	2-HEXANONE	14.77	58	203283	8.84	PPBV		100
65)	TETRACHLOROETHYLENE	15.73	164	234921	9.24	PPBV		100
66)	DIBROMOCHLOROMETHANE	14.98	129	356064	10.01	PPBV		100
67)	1,2-DIBROMOETHANE	15.25	107	297731	9.57	PPBV		100
68)	OCTANE	15.52	43	473508	10.36	PPBV		100
69)	1,1,1,2-TETRACHLOROETHANE	16.44	131	238630	9.99	PPBV	#	100
70)	CHLOROBENZENE	16.46	112	405554	9.15	PPBV		100
71)	ETHYLBENZENE	16.85	91	731267	9.82	PPBV		100
72)	m,p-XYLENE	17.05	106	529697	19.68	PPBV		100
73)	o-XYLENE	17.56	106	249063	9.85	PPBV		100
74)	STYRENE	17.44	104	385389	10.72	PPBV		100
75)	NONANE	17.75	43	409959	10.97	PPBV		100
76)	BROMOFORM	17.17	173	284402	10.29	PPBV		100
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	298300	9.84	PPBV		100
79)	ISOPROPYLBENZENE	18.18	105	672075	10.20	PPBV		100
80)	2-CHLOROTOLUENE	18.71	126	151885	10.19	PPBV		100
81)	n-PROPYLBENZENE	18.73	120	165506	10.47	PPBV		100
82)	4-ETHYLTOLUENE	18.89	105	542858	10.61	PPBV		100
83)	1,3,5-TRIMETHYLBENZENE	18.97	105	444154	10.38	PPBV		100
84)	TERT-BUTYLBENZENE	19.41	134	111492	10.39	PPBV		100
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	384892	10.73	PPBV		100
86)	m-DICHLOROBENZENE	19.61	146	214774	10.07	PPBV		100
87)	BENZYL CHLORIDE	19.58	91	222413	9.92	PPBV		100
88)	p-DICHLOROBENZENE	19.68	146	189986	9.63	PPBV		100
89)	SEC-BUTYLBENZENE	19.71	134	118909	10.48	PPBV		100
90)	p-ISOPROPYLTOLUENE	19.88	134	113549	10.76	PPBV		100
91)	o-DICHLOROBENZENE	20.06	146	175047	9.93	PPBV		100
92)	n-BUTYLBENZENE	20.35	134	73929	10.45	PPBV		100
93)	HEXACHLOROBUTADIENE	22.43	225	47839	7.70	PPBV		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:37 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

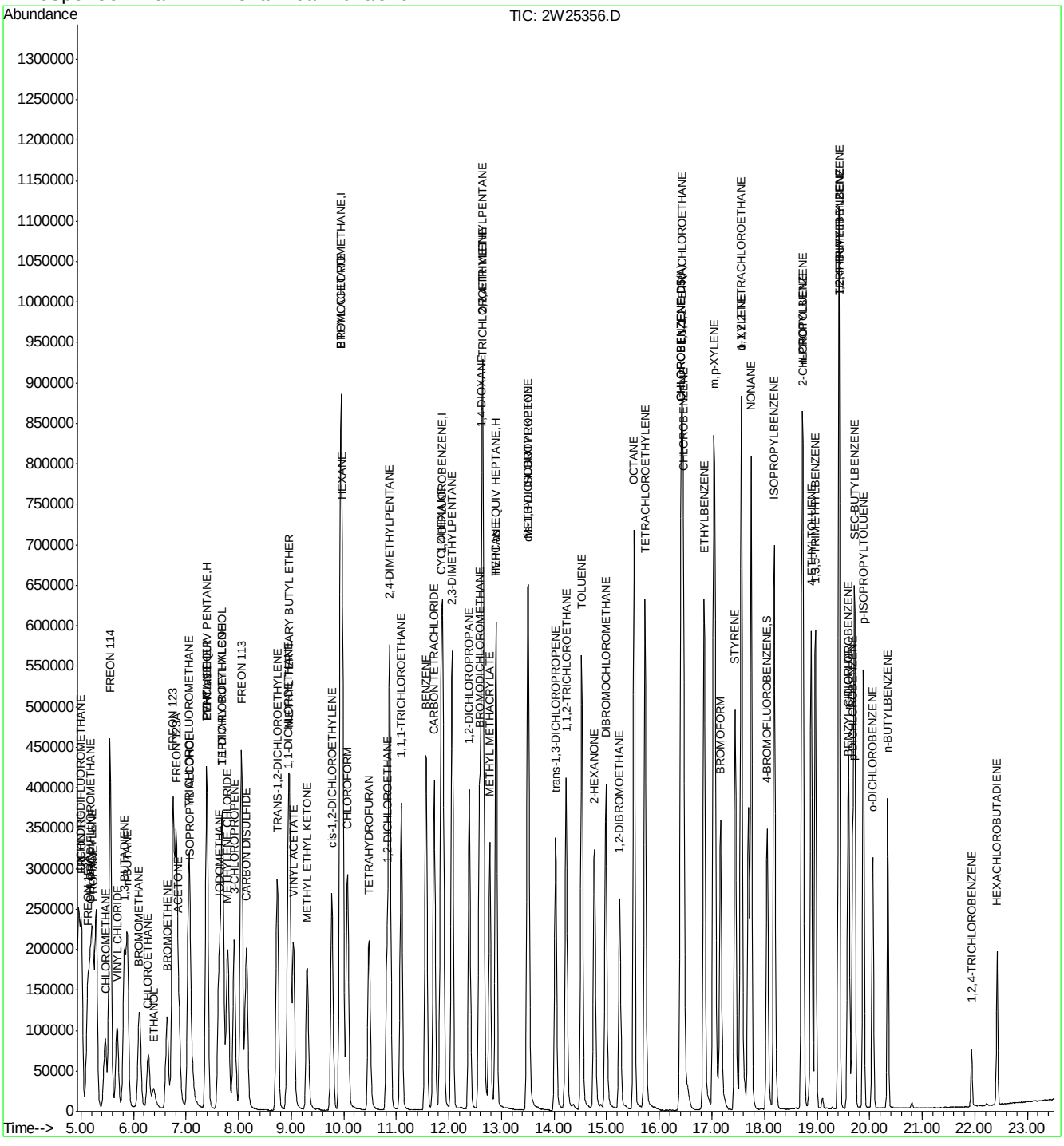
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	30104	7.53	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:47 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

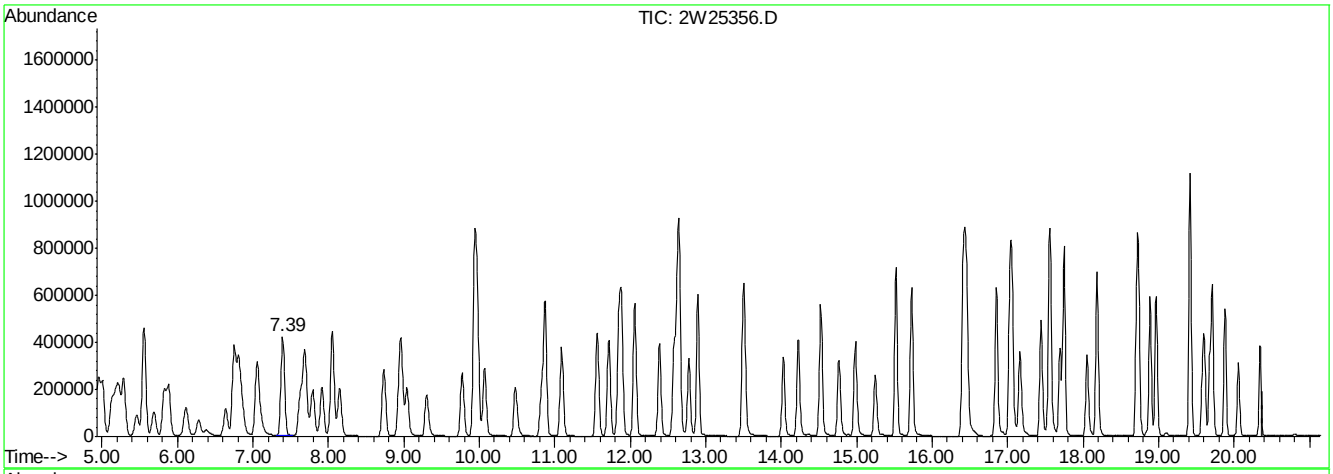


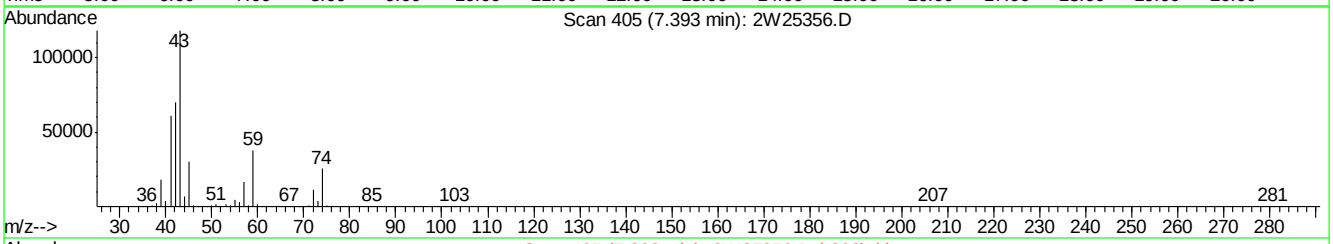
ACCUTEST Laboratories JA28238

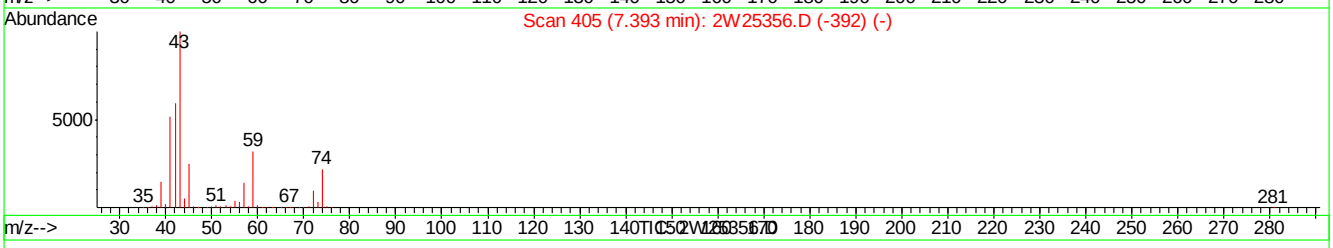
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 10.27PPBV m

response 1459582

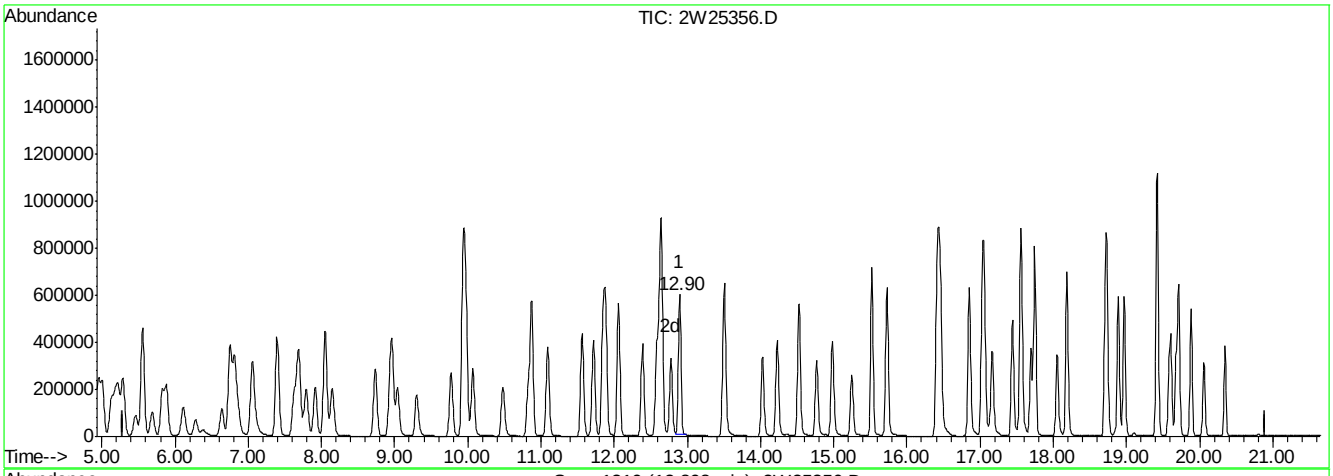
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

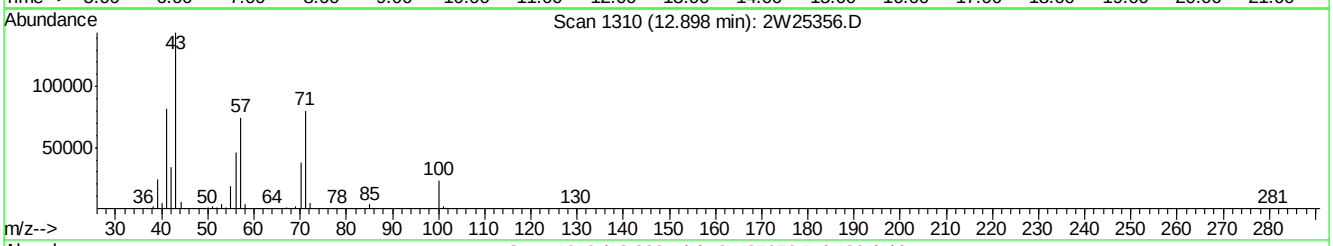
2W25356.D M2W1070.M Sun Sep 06 15:06:49 2009 MS2W

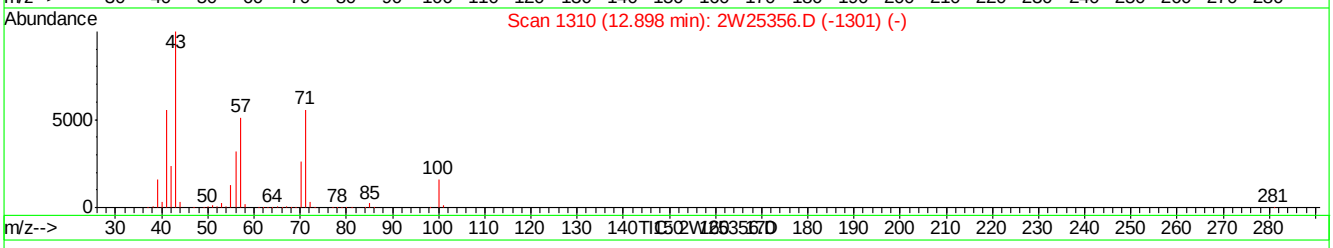
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 10.06PPBV m

response 1537019

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25356.D M2W1070.M Sun Sep 06 15:06:53 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:39 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	136804	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	642918	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	301322	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	301322	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	143688	4.67	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 93.40%

Target Compounds						Qvalue
2) FREON 115	5.01	119	6645	0.47	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	10036	0.47	PPBV	97
4) FREON 152A	5.14	65	6725	0.46	PPBV	91
5) CHLORODIFLUOROMETHANE	5.17	67	2811	0.49	PPBV #	42
6) PROPYLENE	5.21	41	11924	0.50	PPBV	99
7) PROPANE	5.23	43	4675	0.50	PPBV #	100
8) FREON 114	5.56	85	27474	0.48	PPBV	99
9) CHLOROMETHANE	5.46	52	3814	0.48	PPBV #	53
10) VINYL CHLORIDE	5.68	62	11942	0.48	PPBV	99
11) 1,3-BUTADIENE	5.84	54	9251	0.48	PPBV	98
12) n-BUTANE	5.89	43	19753	0.48	PPBV #	96
13) BROMOMETHANE	6.12	94	9548	0.48	PPBV	98
14) CHLOROETHANE	6.29	64	6378	0.48	PPBV	98
15) FREON 123	6.77	83	22397	0.52	PPBV #	98
16) FREON 123A	6.81	117	11776	0.50	PPBV	99
17) TRICHLOROFLUOROMETHANE	7.05	101	22442	0.47	PPBV	98
18) ISOPROPYL ALCOHOL	7.16	45	18964	0.54	PPBV	93
19) ACETONE	6.91	58	5145	0.52	PPBV	97
20) PENTANE	7.40	42	13992	0.48	PPBV	96
21) TVHC as EQUIV PENTANE	7.40	TIC	76713m	0.48	PPBV	
22) ETHYL ETHER	7.44	74	4431	0.46	PPBV	94
23) IODOMETHANE	7.64	142	22103	0.47	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.69	96	9002	0.48	PPBV	99
25) CARBON DISULFIDE	8.15	76	31271	0.49	PPBV	98
26) ETHANOL	6.45	45	3739	0.46	PPBV #	93
27) BROMOETHENE	6.64	106	8543	0.46	PPBV	99
28) METHYLENE CHLORIDE	7.79	84	9651	0.51	PPBV	95
29) 3-CHLOROPROPENE	7.92	76	4230	0.45	PPBV #	89
30) FREON 113	8.06	151	14162	0.48	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	10707	0.48	PPBV	95
32) TERTIARY BUTYL ALCOHOL	7.76	59	21143	0.53	PPBV	95
33) METHYL TERTIARY BUTYL ETHE	9.01	73	27312	0.52	PPBV	96
34) TETRAHYDROFURAN	10.53	42	13251	0.49	PPBV	97
35) HEXANE	9.98	57	16728	0.50	PPBV	97
36) VINYL ACETATE	9.06	86	2038	0.47	PPBV #	29
37) 1,1-DICHLOROETHANE	8.94	63	21358	0.51	PPBV	99
38) METHYL ETHYL KETONE	9.35	72	4657	0.46	PPBV #	90
39) cis-1,2-DICHLOROETHYLENE	9.77	96	10560	0.49	PPBV	96
40) ETHYL ACETATE	9.98	61	3403	0.54	PPBV #	96
41) CHLOROFORM	10.07	83	19763	0.50	PPBV	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:39 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	20042	0.51	PPBV		98
43) 1,1,1-TRICHLOROETHANE	11.09	97	20453	0.50	PPBV		98
44) CARBON TETRACHLORIDE	11.71	117	21141	0.50	PPBV		98
45) 1,2-DICHLOROETHANE	10.83	62	14214	0.50	PPBV		99
47) BENZENE	11.56	78	33419	0.50	PPBV		100
48) CYCLOHEXANE	11.85	84	14853	0.50	PPBV	#	35
49) 2,3-DIMETHYLPENTANE	12.06	71	6642	0.48	PPBV		88
50) TRICHLOROETHYLENE	12.62	95	12941	0.54	PPBV		99
51) 1,2-DICHLOROPROPANE	12.39	63	12410	0.50	PPBV		98
52) BROMODICHLOROMETHANE	12.58	83	20473	0.52	PPBV		98
53) 2,2,4-TRIMETHYLPENTANE	12.64	57	52269	0.57	PPBV		97
54) 1,4-DIOXANE	12.69	88	6747	0.56	PPBV	#	33
55) METHYL METHACRYLATE	12.79	69	9552	0.50	PPBV		98
56) HEPTANE	12.89	43	20818	0.52	PPBV		98
57) TVHC as EQUIV HEPTANE	12.89	TIC	81705m	0.50	PPBV		
58) METHYL ISOBUTYL KETONE	13.53	43	26254	0.57	PPBV		95
59) cis-1,3-DICHLOROPROPENE	13.49	75	16311	0.51	PPBV		91
60) TOLUENE	14.52	92	20678	0.51	PPBV		98
61) trans-1,3-DICHLOROPROPENE	14.03	75	14577	0.48	PPBV		97
62) 1,1,2-TRICHLOROETHANE	14.22	83	9629	0.49	PPBV		97
64) 2-HEXANONE	14.78	58	12887	0.60	PPBV		92
65) TETRACHLOROETHYLENE	15.73	164	12661	0.54	PPBV		98
66) DIBROMOCHLOROMETHANE	14.98	129	16727	0.51	PPBV		99
67) 1,2-DIBROMOETHANE	15.25	107	14927	0.52	PPBV	#	98
68) OCTANE	15.52	43	23040	0.54	PPBV		97
69) 1,1,1,2-TETRACHLOROETHANE	16.43	131	11288	0.51	PPBV	#	97
70) CHLOROBENZENE	16.46	112	21652	0.53	PPBV	#	80
71) ETHYLBENZENE	16.85	91	36595	0.53	PPBV		99
72) m,p-XYLENE	17.05	106	26605	1.06	PPBV		90
73) o-XYLENE	17.55	106	12491	0.53	PPBV		91
74) STYRENE	17.44	104	15616	0.47	PPBV		100
75) NONANE	17.75	43	18716	0.54	PPBV	#	93
76) BROMOFORM	17.16	173	12050	0.47	PPBV		98
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	14155	0.50	PPBV		98
79) ISOPROPYLBENZENE	18.18	105	31893	0.52	PPBV		97
80) 2-CHLOROTOLUENE	18.71	126	6433	0.46	PPBV	#	77
81) n-PROPYLBENZENE	18.73	120	6737	0.46	PPBV		67
82) 4-ETHYLTOLUENE	18.88	105	22076	0.46	PPBV	#	99
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	19925	0.50	PPBV		96
84) TERT-BUTYLBENZENE	19.41	134	4580	0.46	PPBV		82
85) 1,2,4-TRIMETHYLBENZENE	19.42	105	16645	0.50	PPBV		95
86) m-DICHLOROBENZENE	19.60	146	9018	0.46	PPBV		98
87) BENZYL CHLORIDE	19.58	91	9916	0.48	PPBV		98
88) p-DICHLOROBENZENE	19.68	146	8784	0.48	PPBV		97
89) SEC-BUTYLBENZENE	19.71	134	4823	0.46	PPBV		86
90) p-ISOPROPYLTOLUENE	19.88	134	4081	0.42	PPBV		84
91) o-DICHLOROBENZENE	20.06	146	7472	0.46	PPBV		97
92) n-BUTYLBENZENE	20.34	134	2686	0.41	PPBV		86
93) HEXACHLOROBUTADIENE	22.43	225	4338	0.75	PPBV		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:39 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

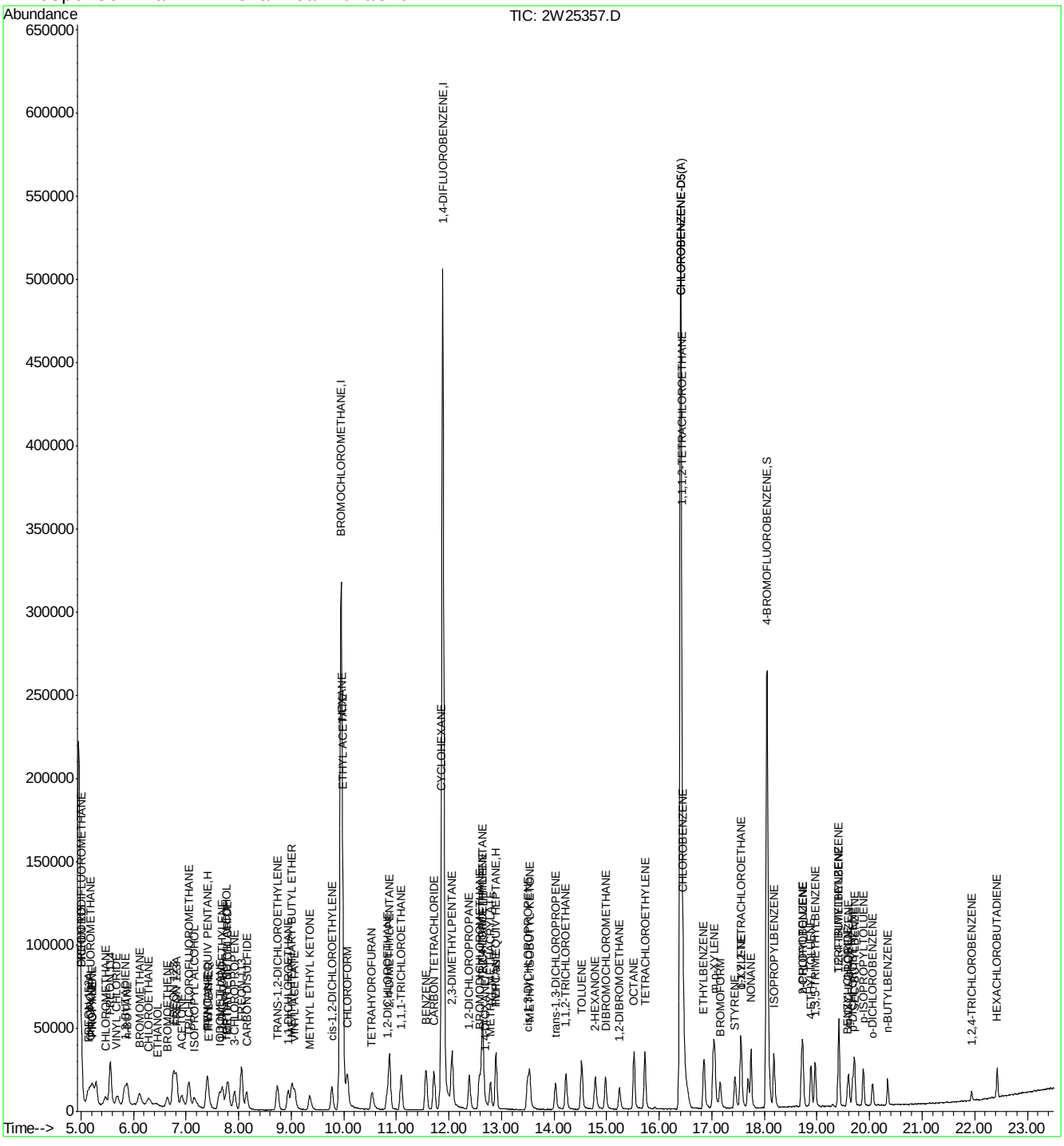
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	2463	0.66	PPBV #	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:49 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

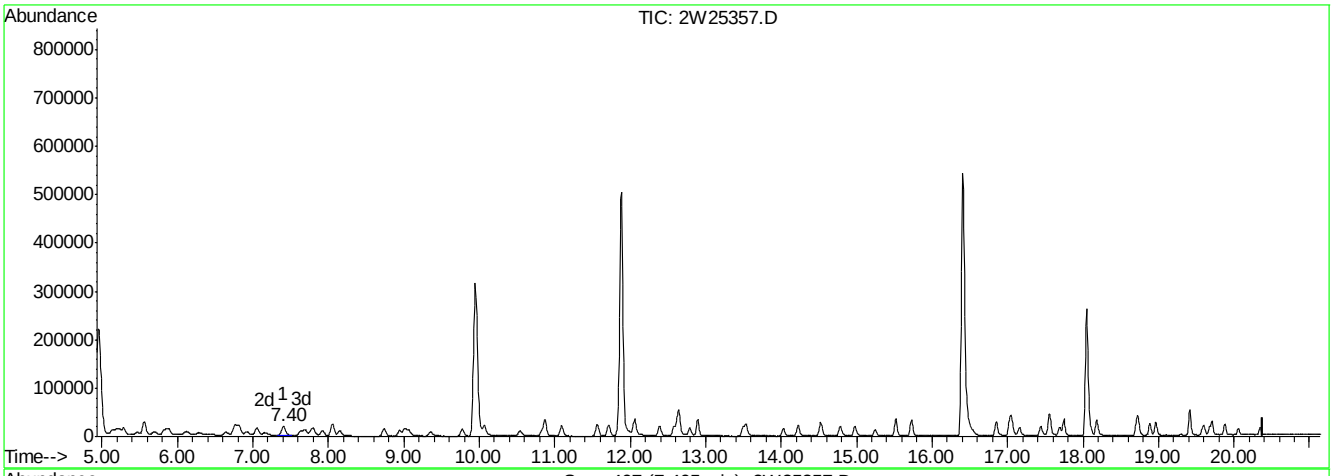


ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:49 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration



(21) TVHC as EQUIV PENTANE (H)

7.40min 0.48PPBV m

response 76713

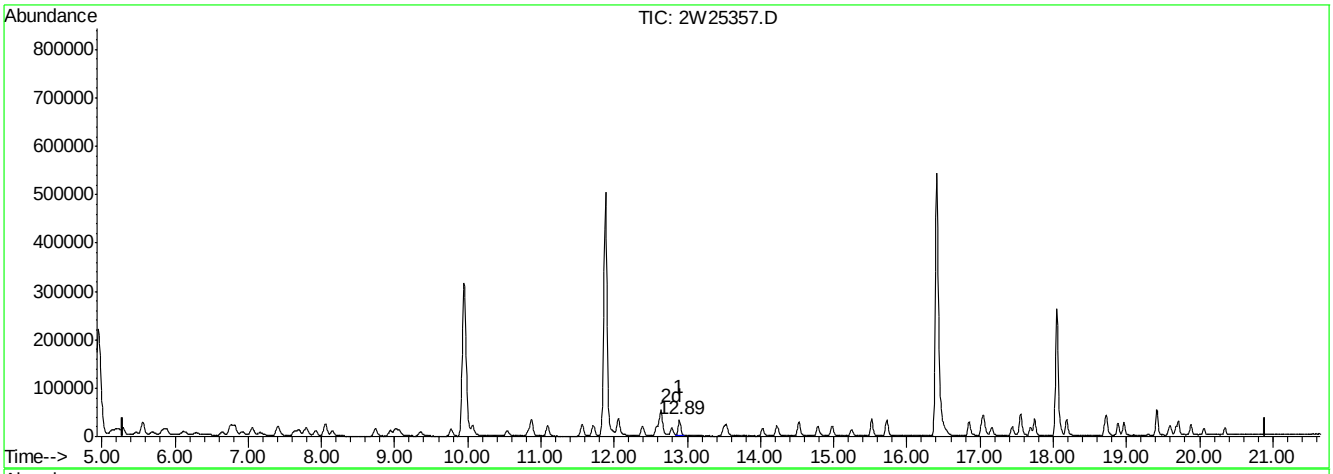
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

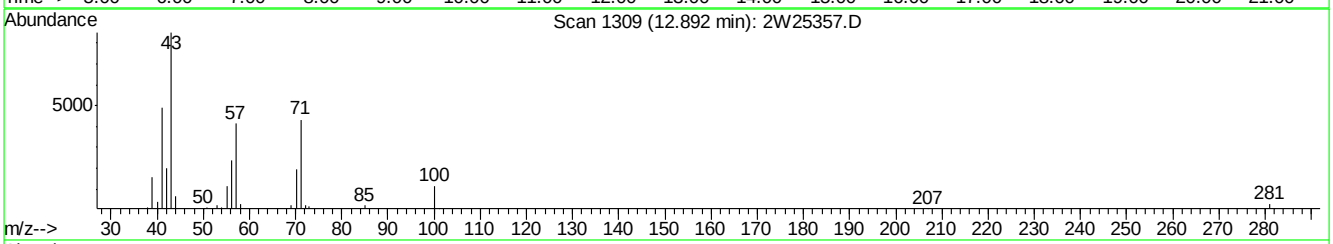
2W25357.D M2W1070.M Sun Sep 06 15:07:02 2009 MS2W

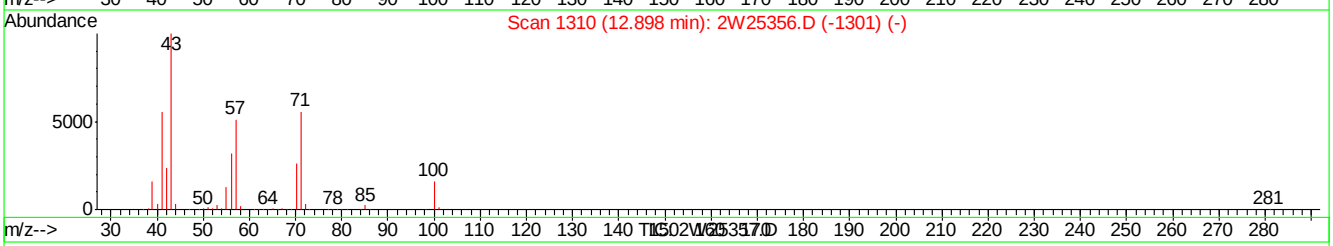
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:49 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 0.50PPBV m

response 81705

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25357.D M2W1070.M Sun Sep 06 15:07:07 2009 MS2W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu
09/14/09 08:59

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:45 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	136025	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	633129	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	292447	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	292447	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	130921	4.39	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 87.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	3143	0.22	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	4745	0.22	PPBV #	89
4) FREON 152A	5.12	65	3238	0.22	PPBV	94
5) CHLORODIFLUOROMETHANE	5.17	67	1279	0.23	PPBV #	42
6) PROPYLENE	5.21	41	5653	0.24	PPBV	94
7) PROPANE	5.23	43	2748	0.30	PPBV #	100
8) FREON 114	5.56	85	13000	0.23	PPBV	99
9) CHLOROMETHANE	5.46	52	1878	0.24	PPBV #	67
10) VINYL CHLORIDE	5.68	62	5492	0.22	PPBV #	93
11) 1,3-BUTADIENE	5.83	54	4239	0.22	PPBV	98
12) n-BUTANE	5.88	43	9431	0.23	PPBV #	97
13) BROMOMETHANE	6.12	94	4323	0.22	PPBV #	93
14) CHLOROETHANE	6.29	64	2823	0.21	PPBV #	45
15) FREON 123	6.75	83	9104	0.21	PPBV #	98
16) FREON 123A	6.81	117	5128	0.22	PPBV	96
17) TRICHLOROFLUOROMETHANE	7.05	101	10187	0.22	PPBV #	96
18) ISOPROPYL ALCOHOL	7.17	45	8093	0.23	PPBV	81
19) ACETONE	6.92	58	2298	0.23	PPBV	91
20) PENTANE	7.39	42	6647	0.23	PPBV	94
21) TVHC as EQUIV PENTANE	7.40	TIC	33717m	0.21	PPBV	
22) ETHYL ETHER	7.44	74	1785	0.19	PPBV	94
23) IODOMETHANE	7.64	142	9744	0.21	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.69	96	4129	0.22	PPBV	92
25) CARBON DISULFIDE	8.15	76	14079	0.22	PPBV	96
26) ETHANOL	6.47	45	2351m	0.29	PPBV	
27) BROMOETHENE	6.64	106	3772	0.21	PPBV #	93
28) METHYLENE CHLORIDE	7.79	84	4838	0.26	PPBV	95
29) 3-CHLOROPROPENE	7.92	76	1861	0.20	PPBV #	87
30) FREON 113	8.05	151	6342	0.22	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	4830	0.22	PPBV	92
32) TERTIARY BUTYL ALCOHOL	7.78	59	7490	0.19	PPBV	83
33) METHYL TERTIARY BUTYL ETHE	9.02	73	11007	0.21	PPBV	93
34) TETRAHYDROFURAN	10.54	42	5412	0.20	PPBV	94
35) HEXANE	9.98	57	7391	0.22	PPBV	97
36) VINYL ACETATE	9.08	86	698m	0.16	PPBV	
37) 1,1-DICHLOROETHANE	8.94	63	9256	0.22	PPBV #	88
38) METHYL ETHYL KETONE	9.37	72	1918	0.19	PPBV #	84
39) cis-1,2-DICHLOROETHYLENE	9.78	96	4527	0.21	PPBV	95
40) ETHYL ACETATE	9.98	61	1296m	0.21	PPBV	
41) CHLOROFORM	10.07	83	8566	0.22	PPBV	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:45 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	8223	0.21	PPBV		95
43)	1,1,1-TRICHLOROETHANE	11.09	97	8647	0.21	PPBV		99
44)	CARBON TETRACHLORIDE	11.71	117	9033	0.22	PPBV		97
45)	1,2-DICHLOROETHANE	10.83	62	6096	0.22	PPBV	#	92
47)	BENZENE	11.56	78	14357	0.22	PPBV		99
48)	CYCLOHEXANE	11.85	84	6808	0.23	PPBV	#	1
49)	2,3-DIMETHYLPENTANE	12.06	71	2747	0.20	PPBV	#	83
50)	TRICHLOROETHYLENE	12.62	95	5537	0.23	PPBV		96
51)	1,2-DICHLOROPROPANE	12.39	63	5099	0.21	PPBV		98
52)	BROMODICHLOROMETHANE	12.58	83	8498	0.22	PPBV	#	97
53)	2,2,4-TRIMETHYLPENTANE	12.64	57	21883	0.24	PPBV		99
54)	1,4-DIOXANE	12.72	88	2437	0.20	PPBV	#	9
55)	METHYL METHACRYLATE	12.79	69	3629	0.19	PPBV		94
56)	HEPTANE	12.89	43	9166	0.23	PPBV		92
57)	TVHC as EQUIV HEPTANE	12.89	TIC	35008m	0.22	PPBV		
58)	METHYL ISOBUTYL KETONE	13.54	43	10500	0.23	PPBV		94
59)	cis-1,3-DICHLOROPROPENE	13.49	75	6671	0.21	PPBV		89
60)	TOLUENE	14.52	92	8531	0.21	PPBV		96
61)	trans-1,3-DICHLOROPROPENE	14.03	75	5676	0.19	PPBV		95
62)	1,1,2-TRICHLOROETHANE	14.22	83	4020	0.21	PPBV		99
64)	2-HEXANONE	14.79	58	5392	0.26	PPBV	#	81
65)	TETRACHLOROETHYLENE	15.72	164	5233	0.23	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.98	129	6721	0.21	PPBV		98
67)	1,2-DIBROMOETHANE	15.24	107	5921	0.21	PPBV	#	99
68)	OCTANE	15.52	43	8903	0.22	PPBV		96
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	4600	0.21	PPBV	#	96
70)	CHLOROBENZENE	16.45	112	9079	0.23	PPBV		92
71)	ETHYLBENZENE	16.85	91	14854	0.22	PPBV		97
72)	m,p-XYLENE	17.04	106	10507	0.43	PPBV		99
73)	o-XYLENE	17.56	106	4783	0.21	PPBV		90
74)	STYRENE	17.44	104	5833	0.18	PPBV		98
75)	NONANE	17.74	43	7186	0.21	PPBV	#	89
76)	BROMOFORM	17.16	173	4619	0.19	PPBV	#	92
78)	1,1,2,2-TETRACHLOROETHANE	17.54	83	5680	0.21	PPBV	#	91
79)	ISOPROPYLBENZENE	18.18	105	12340	0.21	PPBV		97
80)	2-CHLOROTOLUENE	18.71	126	2523	0.19	PPBV	#	77
81)	n-PROPYLBENZENE	18.73	120	2530	0.18	PPBV		63
82)	4-ETHYLTOLUENE	18.88	105	8363	0.18	PPBV	#	97
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	7087	0.18	PPBV	#	91
84)	TERT-BUTYLBENZENE	19.41	134	1749	0.18	PPBV		88
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	5848	0.18	PPBV		93
86)	m-DICHLOROBENZENE	19.61	146	3768	0.20	PPBV		92
87)	BENZYL CHLORIDE	19.58	91	3997	0.20	PPBV	#	60
88)	p-DICHLOROBENZENE	19.68	146	3770	0.21	PPBV		97
89)	SEC-BUTYLBENZENE	19.71	134	1641	0.16	PPBV	#	72
90)	p-ISOPROPYLTOLUENE	19.88	134	1412	0.15	PPBV		86
91)	o-DICHLOROBENZENE	20.06	146	3090	0.19	PPBV		95
92)	n-BUTYLBENZENE	20.34	134	1000	0.16	PPBV		89
93)	HEXACHLOROBUTADIENE	22.43	225	1596	0.29	PPBV		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:45 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

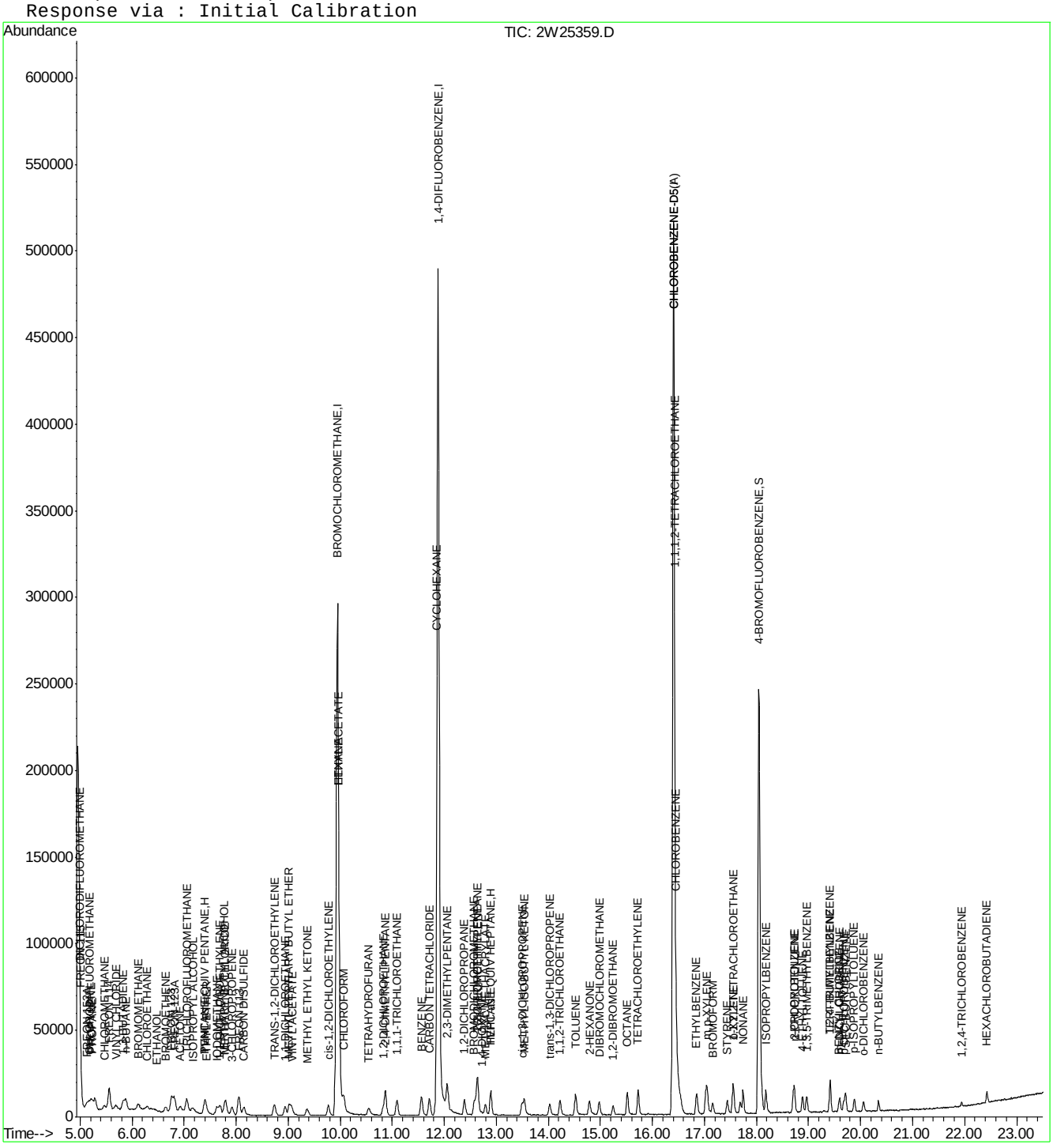
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	1025	0.28	PPBV #	12

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: M2W1070.RES

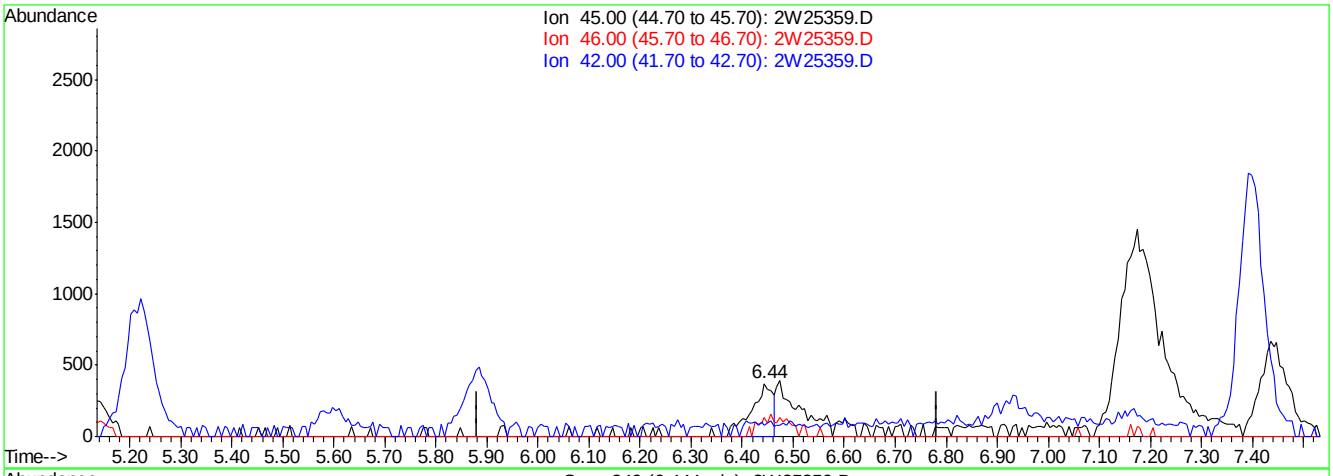
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

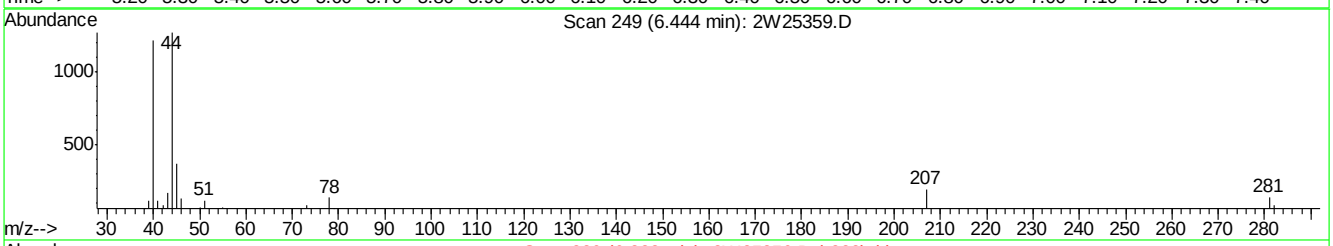


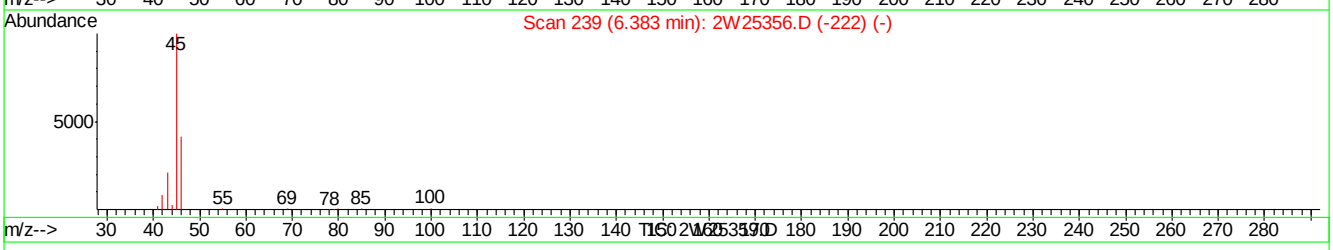
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(26) ETHANOL

6.44min 0.13PPBV

response 1088

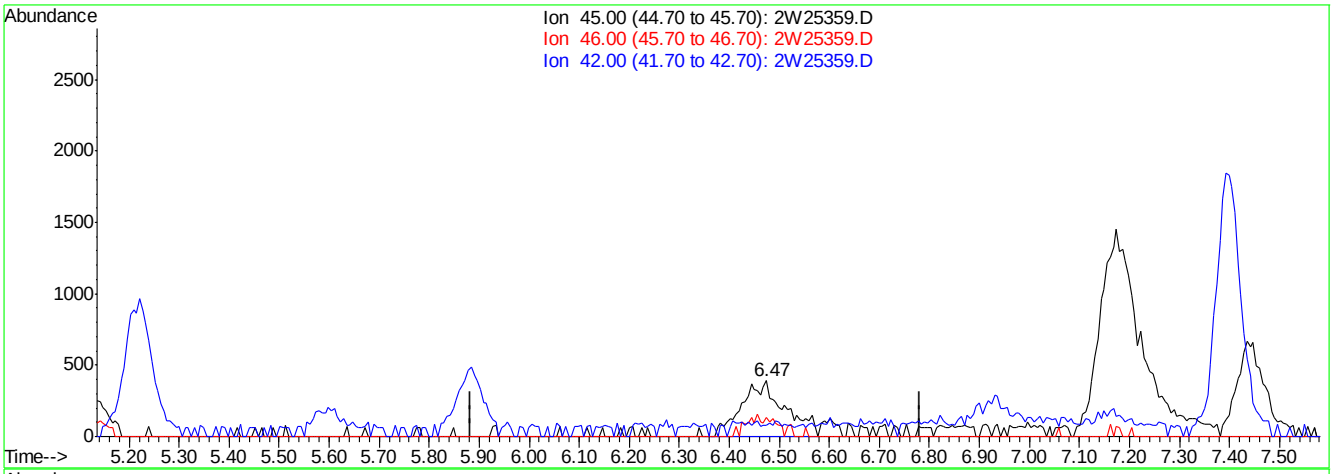
Ion	Exp%	Act%
45.00	100	100
46.00	39.10	0.00#
42.00	7.30	0.00
0.00	0.00	0.00

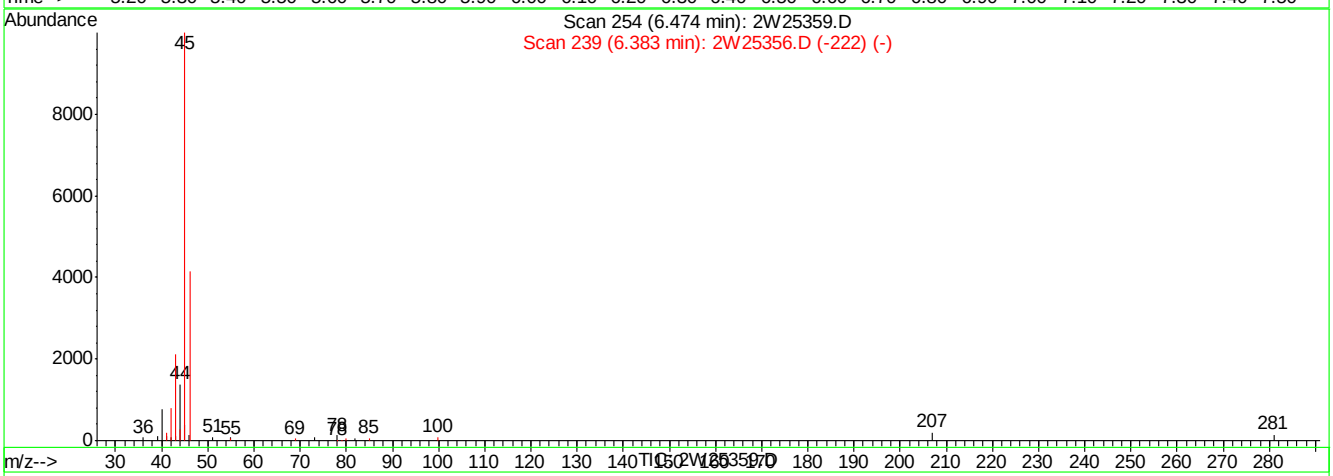
2W25359.D M2W1070.M Sun Sep 06 14:51:09 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(26) ETHANOL

6.47min 0.29PPBV m

response 2351

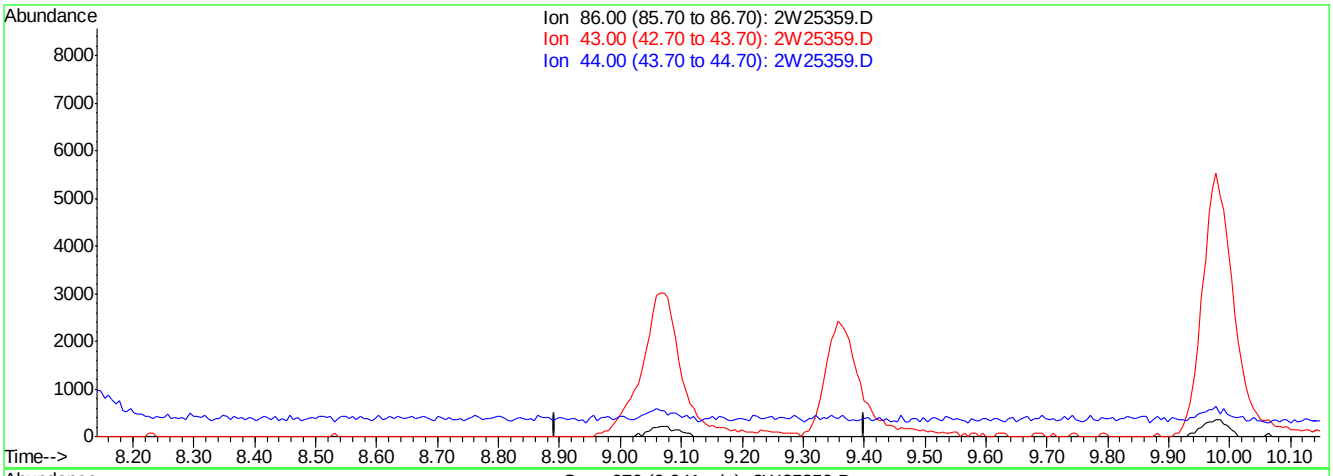
Ion	Exp%	Act%
45.00	100	100
46.00	39.10	0.00#
42.00	7.30	0.00
0.00	0.00	0.00

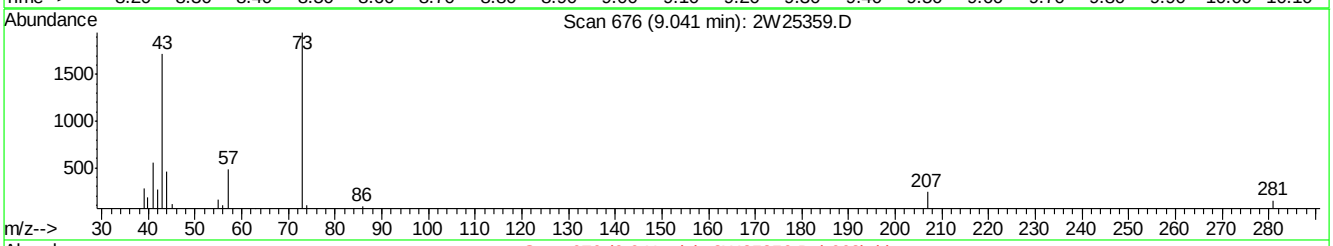
2W25359.D M2W1070.M Sun Sep 06 14:51:17 2009 MS2W

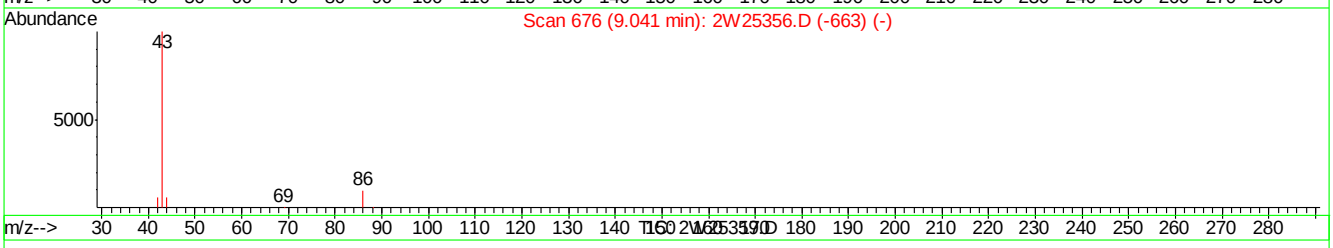
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(36) VINYL ACETATE

9.04min 0.00PPBV

response 0

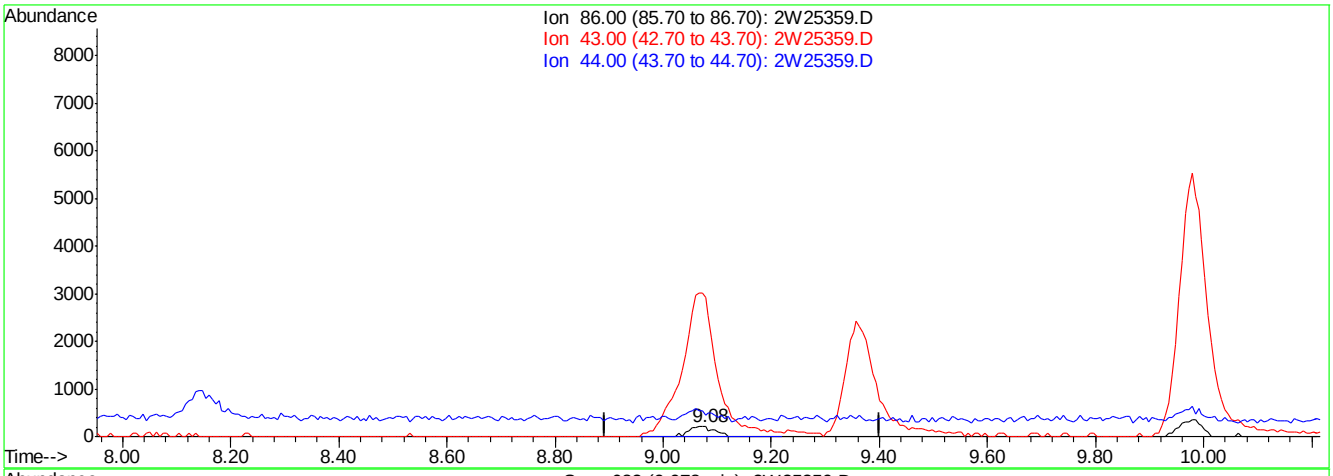
Ion	Exp%	Act%
86.00	100	0.00
43.00	1284.50	0.00#
44.00	61.90	0.00#
0.00	0.00	0.00

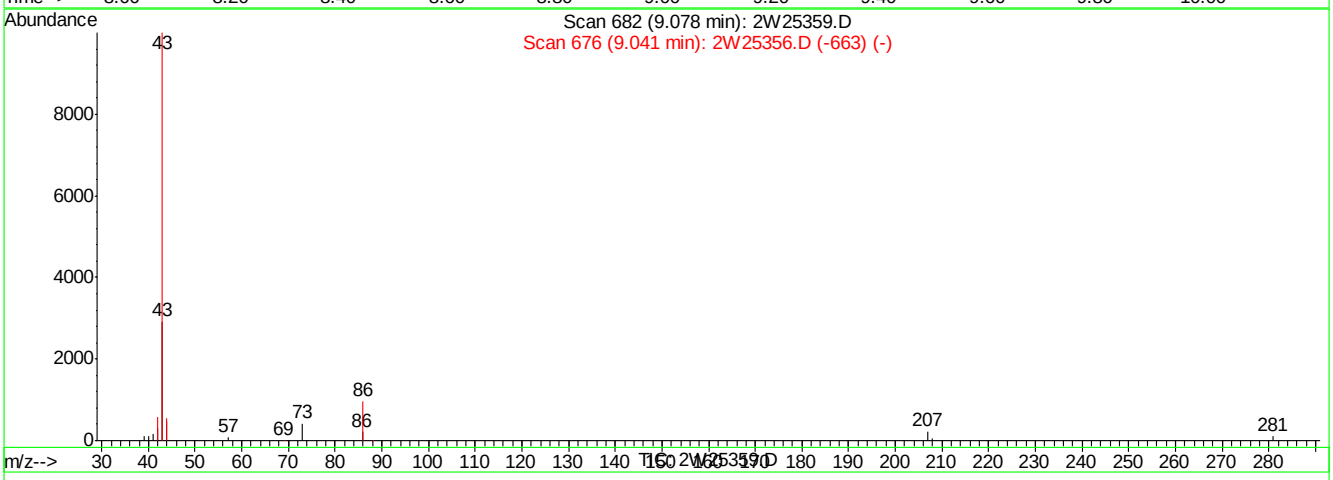
2W25359.D M2W1070.M Sun Sep 06 14:51:25 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(36) VINYL ACETATE

9.08min 0.16PPBV m

response 698

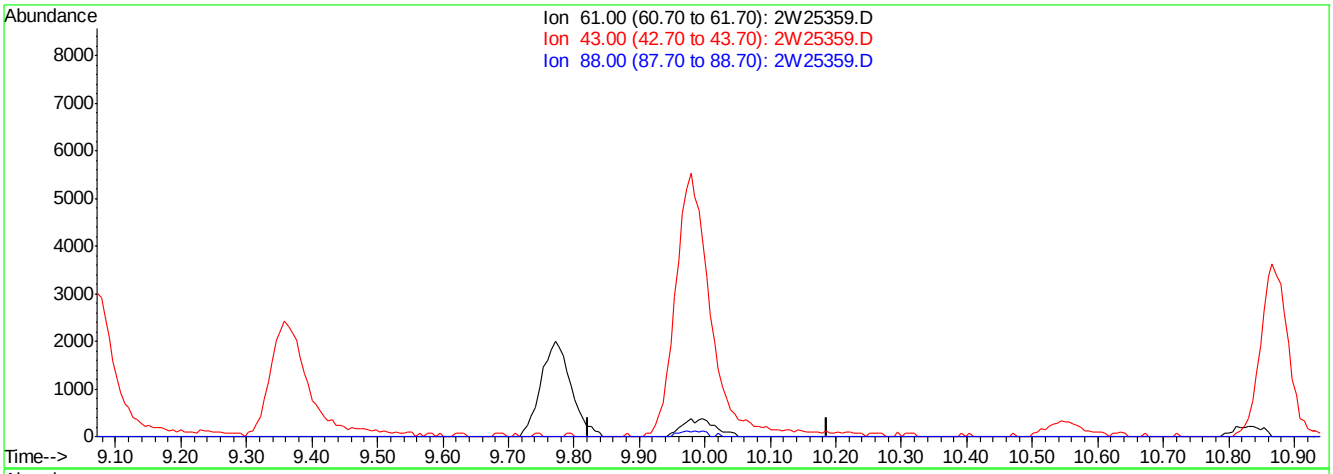
Ion	Exp%	Act%
86.00	100	100
43.00	1284.50	0.00#
44.00	61.90	0.00#
0.00	0.00	0.00

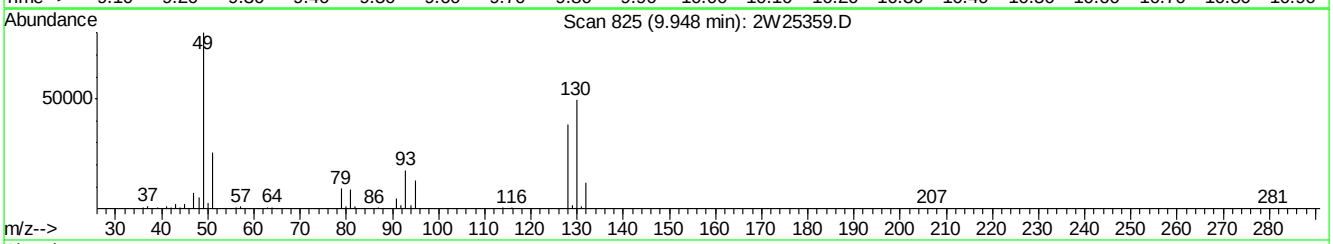
2W25359.D M2W1070.M Sun Sep 06 14:51:30 2009 MS2W

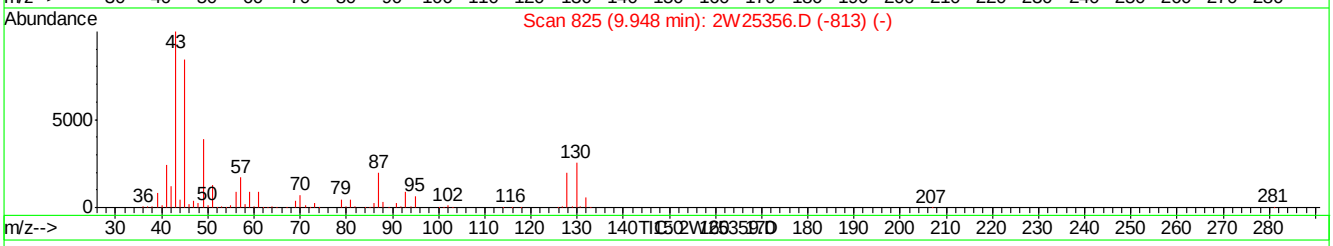
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(40) ETHYL ACETATE

9.95min 0.00PPBV

response 0

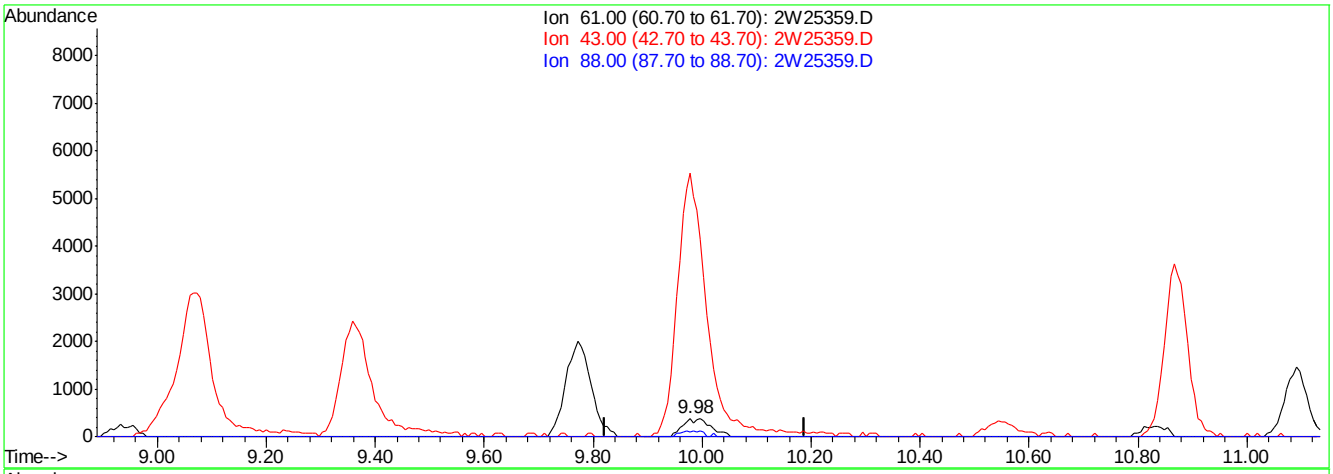
Ion	Exp%	Act%
61.00	100	0.00
43.00	1419.30	0.00#
88.00	39.00	0.00#
0.00	0.00	0.00

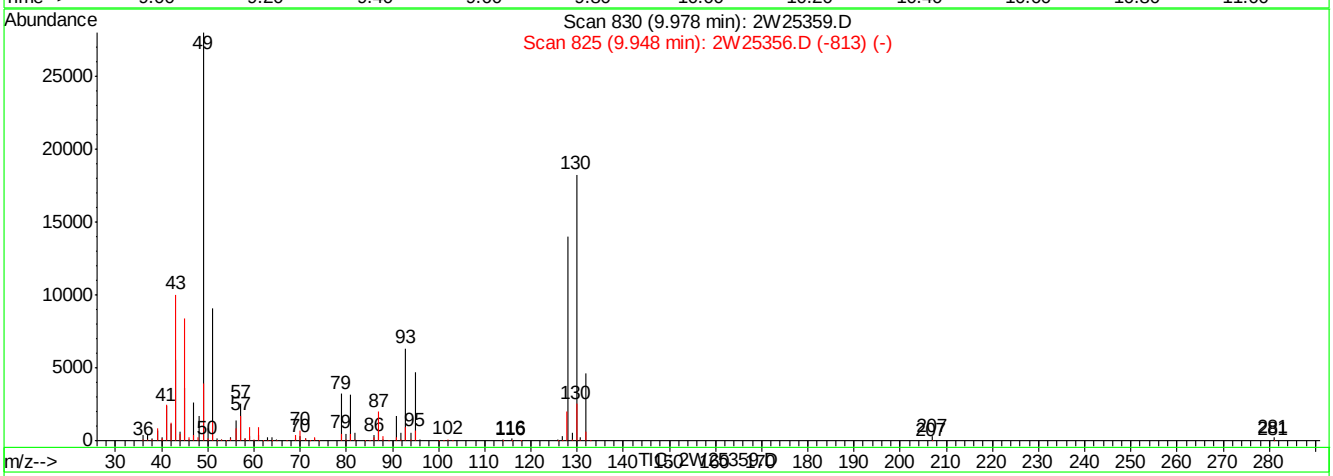
2W25359.D M2W1070.M Sun Sep 06 14:51:35 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(40) ETHYL ACETATE

9.98min 0.21PPBV m

response 1296

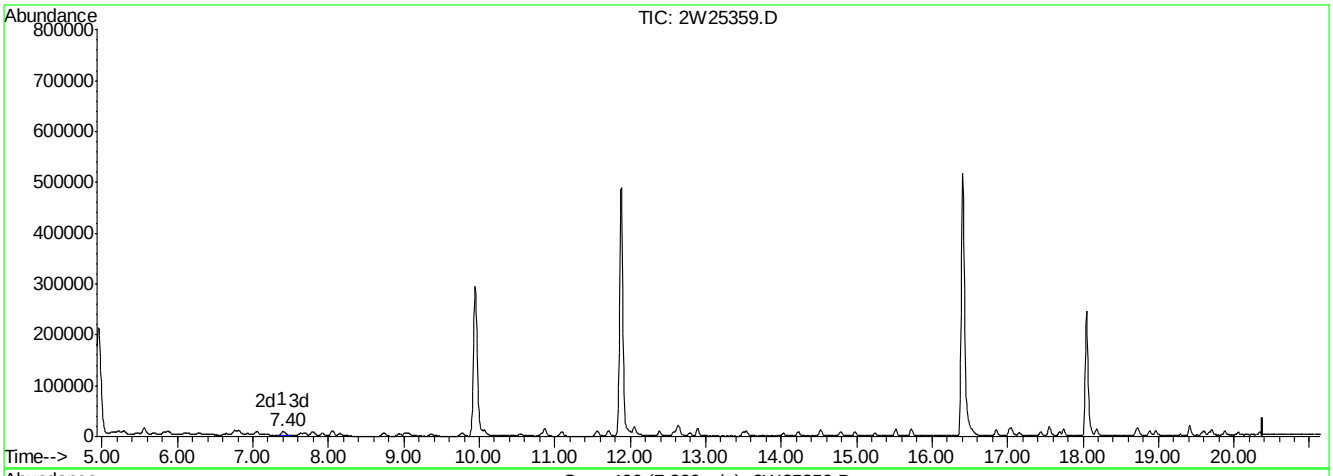
Ion	Exp%	Act%
61.00	100	100
43.00	1419.30	0.00#
88.00	39.00	0.00#
0.00	0.00	0.00

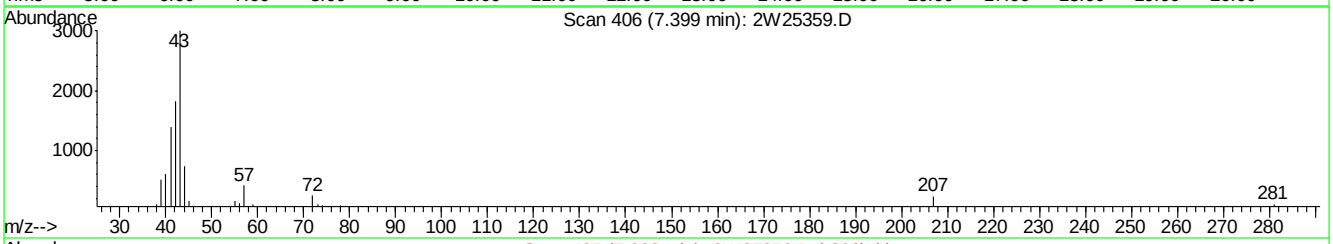
2W25359.D M2W1070.M Sun Sep 06 14:51:41 2009 MS2W

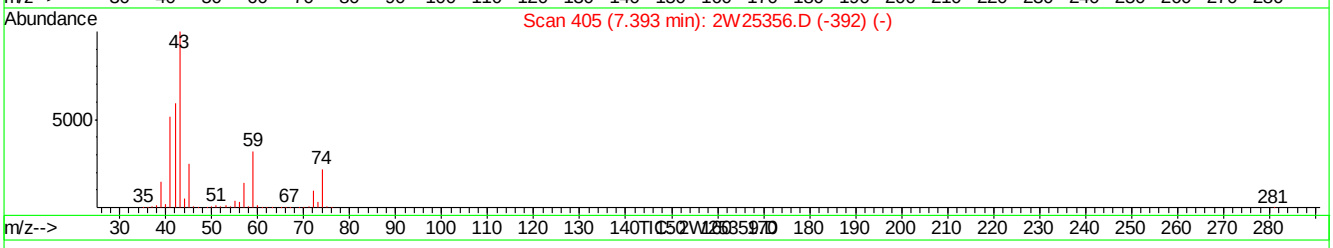
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 0.21PPBV m

response 33717

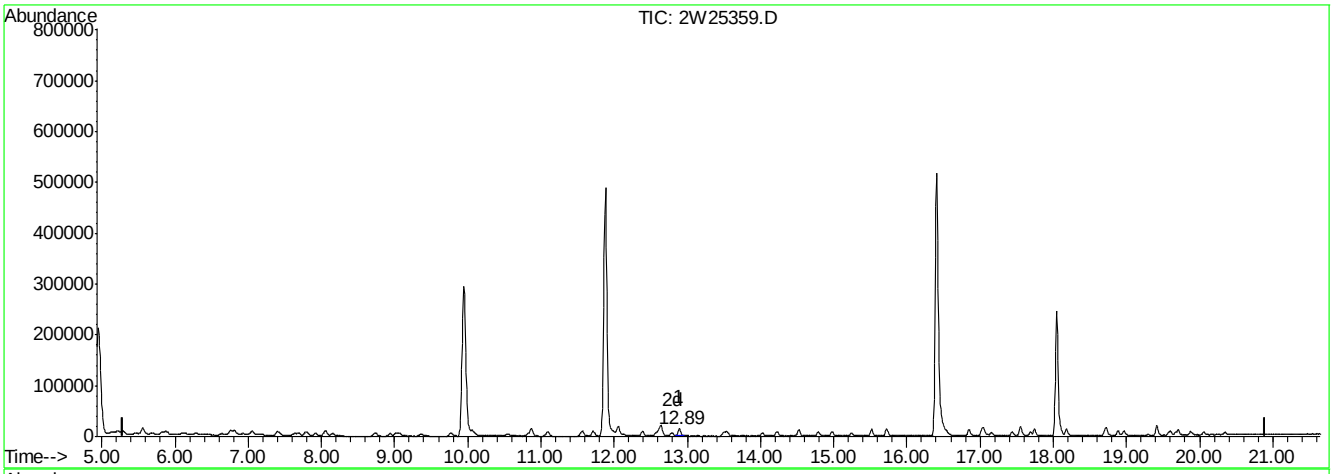
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

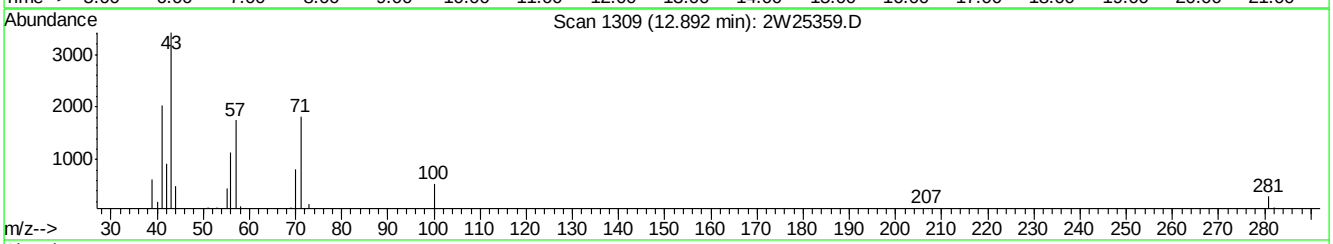
2W25359.D M2W1070.M Sun Sep 06 15:07:17 2009 MS2W

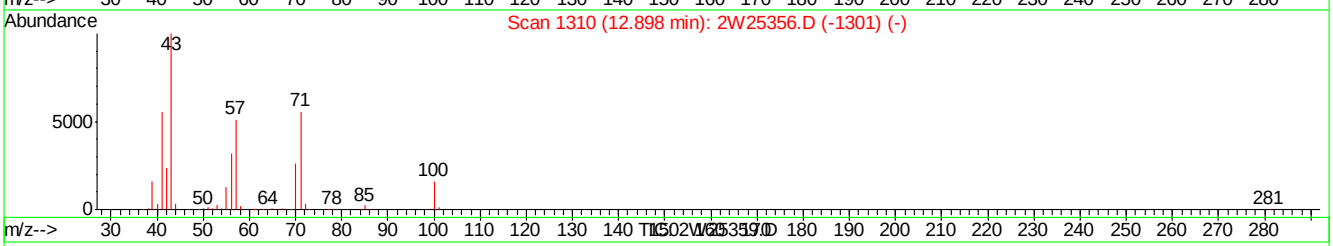
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 0.22PPBV m

response 35008

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25359.D M2W1070.M Sun Sep 06 15:07:22 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:47 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	113592	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	570376	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	312683	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	312683	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.06	95	178268	5.59	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 111.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	241547	20.66	PPBV	98
3) DICHLORODIFLUOROMETHANE	5.01	85	368055	20.85	PPBV	100
4) FREON 152A	5.12	65	236062	19.49	PPBV	99
5) CHLORODIFLUOROMETHANE	5.17	67	89132	18.84	PPBV	99
6) PROPYLENE	5.21	41	368454	18.55	PPBV	98
7) PROPANE	5.24	43	132523	17.11	PPBV #	100
8) FREON 114	5.56	85	859158	18.13	PPBV	98
9) CHLOROMETHANE	5.46	52	126850	19.10	PPBV #	84
10) VINYL CHLORIDE	5.69	62	406762	19.54	PPBV	100
11) 1,3-BUTADIENE	5.82	54	310328	19.46	PPBV	97
12) n-BUTANE	5.88	43	633488	18.47	PPBV	99
13) BROMOMETHANE	6.11	94	318581	19.10	PPBV	100
14) CHLOROETHANE	6.28	64	223402	20.29	PPBV	100
15) FREON 123	6.75	83	685713	19.06	PPBV #	99
16) FREON 123A	6.81	117	371270	18.96	PPBV	96
17) TRICHLOROFLUOROMETHANE	7.05	101	727990	18.45	PPBV	99
18) ISOPROPYL ALCOHOL	7.09	45	543227	18.70	PPBV	99
19) ACETONE	6.85	58	154887	18.84	PPBV	95
20) PENTANE	7.40	42	422113	17.47	PPBV	99
21) TVHC as EQUIV PENTANE	7.39	TIC	2571881m	19.41	PPBV	
22) ETHYL ETHER	7.39	74	159934	20.21	PPBV	98
23) IODOMETHANE	7.63	142	768020	19.78	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.68	96	290954	18.66	PPBV	96
25) CARBON DISULFIDE	8.15	76	985754	18.53	PPBV	100
26) ETHANOL	6.38	45	123080	18.13	PPBV	100
27) BROMOETHENE	6.64	106	302577	19.74	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	279083	17.83	PPBV	99
29) 3-CHLOROPROPENE	7.92	76	158866	20.15	PPBV	95
30) FREON 113	8.05	151	463630	18.86	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	354131	19.20	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.69	59	586374	17.82	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	836219	19.23	PPBV	100
34) TETRAHYDROFURAN	10.48	42	453844	20.33	PPBV	98
35) HEXANE	9.98	57	536789	19.43	PPBV	98
36) VINYL ACETATE	9.04	86	75546	20.80	PPBV #	92
37) 1,1-DICHLOROETHANE	8.94	63	656351	18.94	PPBV	99
38) METHYL ETHYL KETONE	9.30	72	169727	20.35	PPBV	94
39) cis-1,2-DICHLOROETHYLENE	9.77	96	352574	19.53	PPBV	98
40) ETHYL ACETATE	9.95	61	101240	19.26	PPBV #	87
41) CHLOROFORM	10.07	83	640690	19.43	PPBV	99

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:47 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	637812	19.68	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.09	97	653352	19.35	PPBV		99
44) CARBON TETRACHLORIDE	11.72	117	674877	19.25	PPBV		99
45) 1,2-DICHLOROETHANE	10.83	62	467156	19.73	PPBV		99
47) BENZENE	11.57	78	1063268	18.06	PPBV		100
48) CYCLOHEXANE	11.85	84	472590	17.90	PPBV		95
49) 2,3-DIMETHYLPENTANE	12.06	71	244060	19.91	PPBV		96
50) TRICHLOROETHYLENE	12.62	95	386657	18.04	PPBV		97
51) 1,2-DICHLOROPROPANE	12.39	63	425253	19.40	PPBV		100
52) BROMODICHLOROMETHANE	12.58	83	668186	19.10	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.66	57	1389789	17.18	PPBV		98
54) 1,4-DIOXANE	12.62	88	196639	18.33	PPBV	#	73
55) METHYL METHACRYLATE	12.78	69	343481	20.11	PPBV		97
56) HEPTANE	12.90	43	647784	18.18	PPBV		97
57) TVHC as EQUIV HEPTANE	12.90	TIC	2724248m	18.85	PPBV		
58) METHYL ISOBUTYL KETONE	13.52	43	736219	17.90	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.49	75	569692	19.97	PPBV		98
60) TOLUENE	14.53	92	698847	19.55	PPBV		97
61) trans-1,3-DICHLOROPROPENE	14.04	75	550284	20.44	PPBV		99
62) 1,1,2-TRICHLOROETHANE	14.23	83	334392	19.20	PPBV		98
64) 2-HEXANONE	14.77	58	379531	17.13	PPBV		97
65) TETRACHLOROETHYLENE	15.73	164	428248	17.48	PPBV		100
66) DIBROMOCHLOROMETHANE	14.99	129	651336	19.00	PPBV		99
67) 1,2-DIBROMOETHANE	15.25	107	548886	18.31	PPBV		99
68) OCTANE	15.52	43	784404	17.82	PPBV		95
69) 1,1,1,2-TETRACHLOROETHANE	16.44	131	434479	18.89	PPBV	#	99
70) CHLOROBENZENE	16.46	112	732306	17.15	PPBV		98
71) ETHYLBENZENE	16.85	91	1271249	17.72	PPBV		97
72) m,p-XYLENE	17.05	106	942270	36.34	PPBV		92
73) o-XYLENE	17.56	106	449814	18.46	PPBV		95
74) STYRENE	17.45	104	714429	20.64	PPBV		99
75) NONANE	17.75	43	690565	19.18	PPBV		96
76) BROMOFORM	17.18	173	537808	20.20	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.56	83	529134	18.13	PPBV		99
79) ISOPROPYLBENZENE	18.19	105	1186967	18.71	PPBV		97
80) 2-CHLOROTOLUENE	18.71	126	285812	19.90	PPBV	#	81
81) n-PROPYLBENZENE	18.74	120	313037	20.56	PPBV		80
82) 4-ETHYLTOLUENE	18.89	105	983156	19.94	PPBV		96
83) 1,3,5-TRIMETHYLBENZENE	18.97	105	818650	19.85	PPBV		98
84) TERT-BUTYLBENZENE	19.42	134	213059	20.62	PPBV		90
85) 1,2,4-TRIMETHYLBENZENE	19.43	105	693868	20.07	PPBV		99
86) m-DICHLOROBENZENE	19.61	146	418605	20.38	PPBV		99
87) BENZYL CHLORIDE	19.58	91	448360	20.76	PPBV		98
88) p-DICHLOROBENZENE	19.68	146	381212	20.06	PPBV		99
89) SEC-BUTYLBENZENE	19.72	134	230062	21.05	PPBV		88
90) p-ISOPROPYLTOLUENE	19.88	134	224453	22.09	PPBV		94
91) o-DICHLOROBENZENE	20.06	146	348754	20.53	PPBV		100
92) n-BUTYLBENZENE	20.35	134	152988	22.45	PPBV		92
93) HEXACHLOROBUTADIENE	22.43	225	85158	14.23	PPBV		99

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:47 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

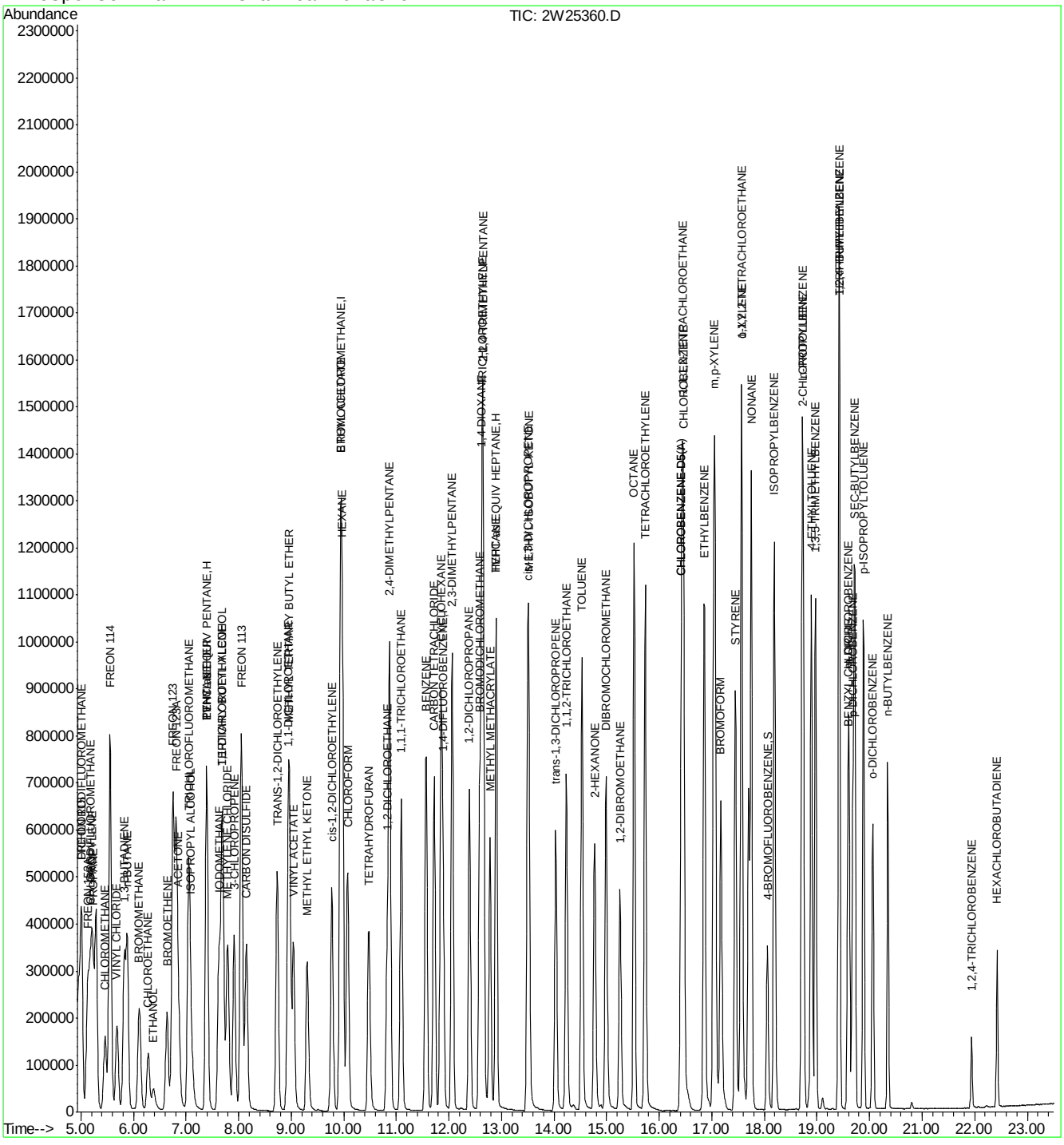
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	63328	16.44	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:52 2009 Quant Results File: M2W1070.RES

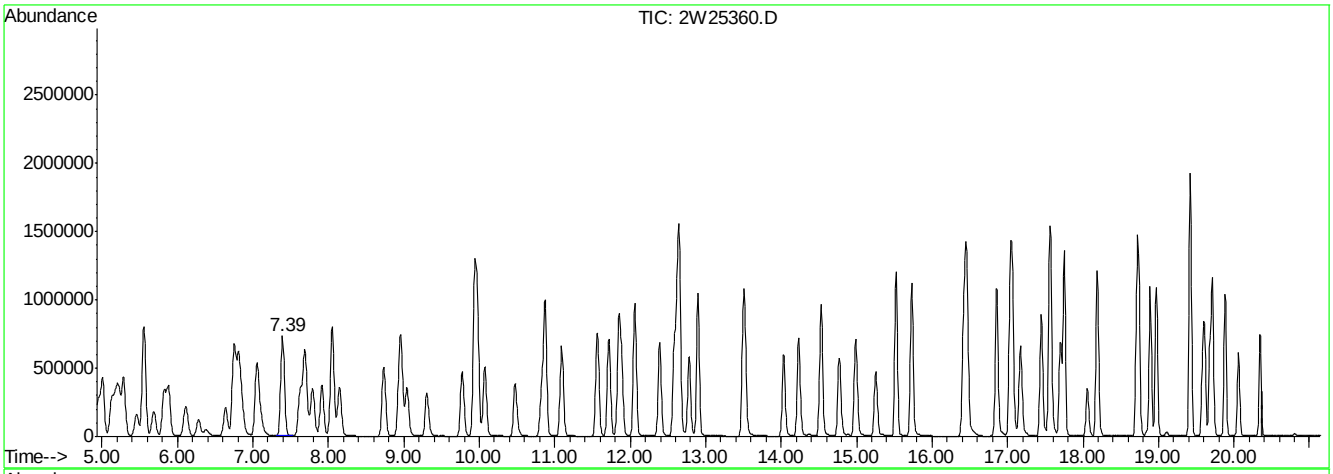
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

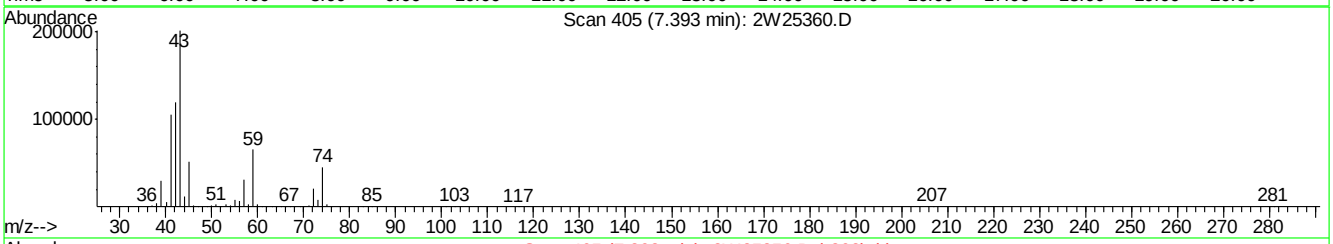


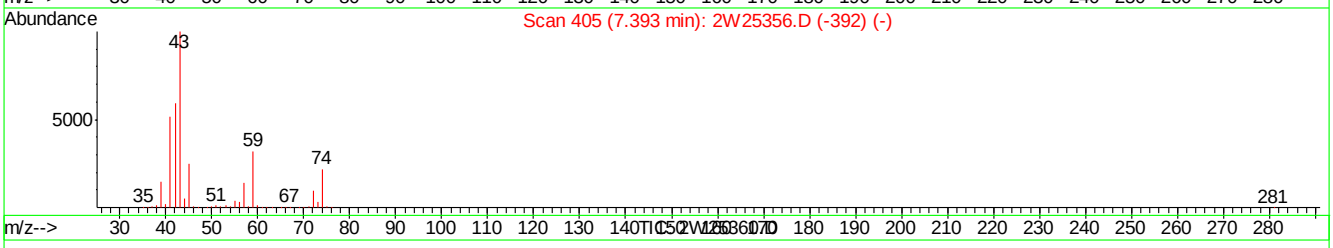
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:52 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 19.41PPBV m

response 2571881

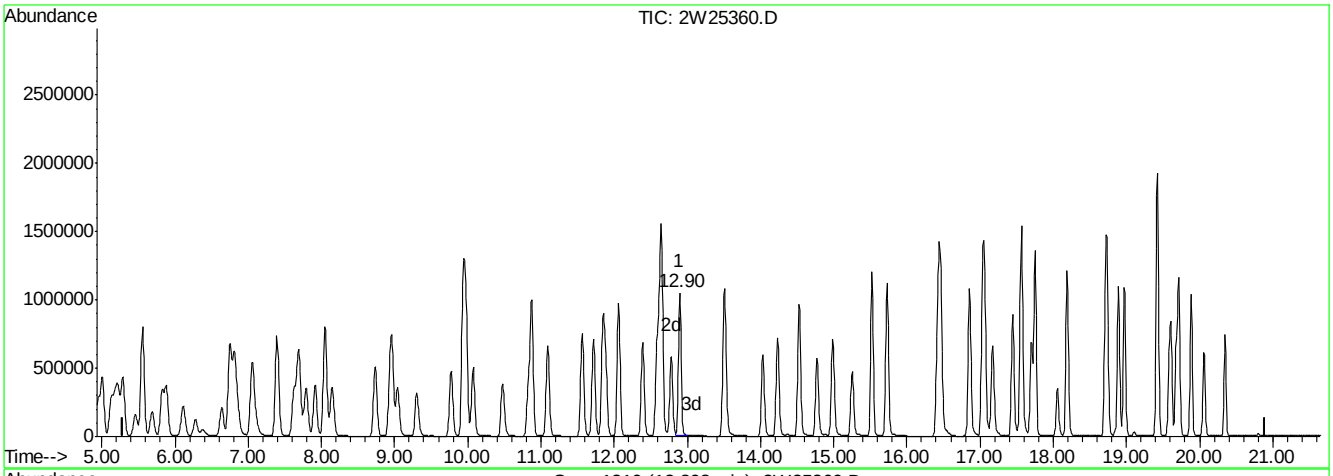
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

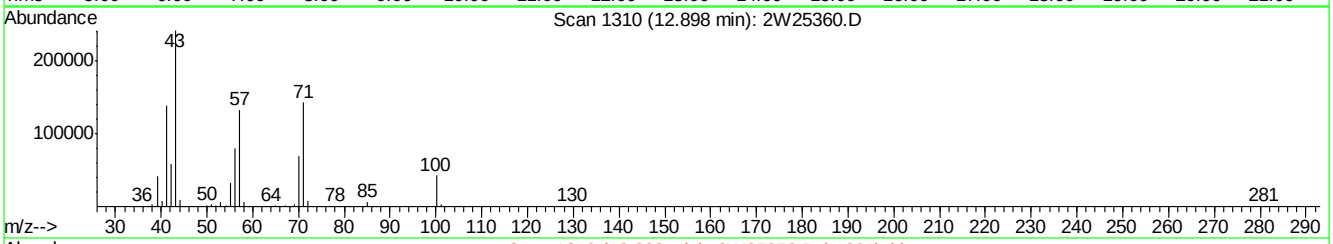
2W25360.D M2W1070.M Sun Sep 06 15:07:32 2009 MS2W

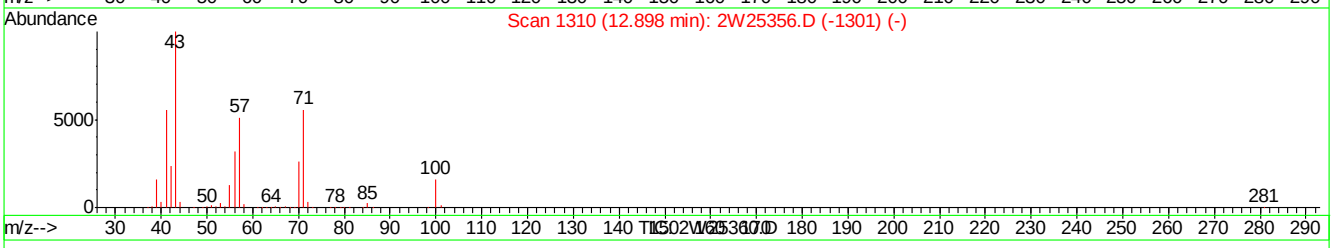
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:52 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 18.85PPBV m

response 2724248

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25360.D M2W1070.M Sun Sep 06 15:07:35 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:50 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.94	128	129325	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	611123	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	309325	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	309325	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	167076	5.29	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 105.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	72967	5.48	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	109791	5.46	PPBV	99
4) FREON 152A	5.13	65	76098	5.52	PPBV	97
5) CHLORODIFLUOROMETHANE	5.17	67	28508	5.29	PPBV	97
6) PROPYLENE	5.21	41	118838	5.25	PPBV	99
7) PROPANE	5.24	43	42372	4.81	PPBV #	100
8) FREON 114	5.56	85	299838	5.56	PPBV	97
9) CHLOROMETHANE	5.46	52	38513	5.09	PPBV #	86
10) VINYL CHLORIDE	5.68	62	129210	5.45	PPBV	100
11) 1,3-BUTADIENE	5.82	54	99720	5.49	PPBV	94
12) n-BUTANE	5.88	43	196857	5.04	PPBV	99
13) BROMOMETHANE	6.11	94	110011	5.79	PPBV	100
14) CHLOROETHANE	6.28	64	70213	5.60	PPBV	98
15) FREON 123	6.75	83	235109	5.74	PPBV #	99
16) FREON 123A	6.81	117	125376	5.62	PPBV	94
17) TRICHLOROFLUOROMETHANE	7.05	101	249454	5.55	PPBV	99
18) ISOPROPYL ALCOHOL	7.09	45	164241	4.97	PPBV	99
19) ACETONE	6.86	58	46093	4.92	PPBV	93
20) PENTANE	7.39	42	138006	5.02	PPBV	99
21) TVHC as EQUIV PENTANE	7.39	TIC	823743m	5.46	PPBV	
22) ETHYL ETHER	7.39	74	48418	5.37	PPBV	97
23) IODOMETHANE	7.63	142	266213	6.02	PPBV	97
24) 1,1-DICHLOROETHYLENE	7.68	96	99606	5.61	PPBV	94
25) CARBON DISULFIDE	8.15	76	334558	5.52	PPBV	98
26) ETHANOL	6.39	45	34745	4.50	PPBV	96
27) BROMOETHENE	6.64	106	104909	6.01	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	90256	5.07	PPBV	96
29) 3-CHLOROPROPENE	7.92	76	49515	5.52	PPBV #	91
30) FREON 113	8.06	151	158089	5.65	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	116952	5.57	PPBV	96
32) TERTIARY BUTYL ALCOHOL	7.70	59	200919	5.36	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	259164	5.24	PPBV	98
34) TETRAHYDROFURAN	10.49	42	128563	5.06	PPBV	97
35) HEXANE	9.98	57	174660	5.55	PPBV	98
36) VINYL ACETATE	9.04	86	21837	5.28	PPBV	97
37) 1,1-DICHLOROETHANE	8.94	63	217697	5.52	PPBV	100
38) METHYL ETHYL KETONE	9.31	72	49119	5.17	PPBV #	92
39) cis-1,2-DICHLOROETHYLENE	9.77	96	113158	5.51	PPBV	96
40) ETHYL ACETATE	9.95	61	30393	5.08	PPBV #	94
41) CHLOROFORM	10.07	83	208335	5.55	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:50 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	207160	5.61	PPBV		100
43)	1,1,1-TRICHLOROETHANE	11.09	97	214262	5.58	PPBV		99
44)	CARBON TETRACHLORIDE	11.71	117	225558	5.65	PPBV		99
45)	1,2-DICHLOROETHANE	10.82	62	146083	5.42	PPBV		99
47)	BENZENE	11.56	78	345957	5.48	PPBV		99
48)	CYCLOHEXANE	11.85	84	154011	5.44	PPBV		98
49)	2,3-DIMETHYLPENTANE	12.06	71	74971	5.71	PPBV		100
50)	TRICHLOROETHYLENE	12.62	95	131487	5.73	PPBV		99
51)	1,2-DICHLOROPROPANE	12.39	63	133232	5.67	PPBV		98
52)	BROMODICHLOROMETHANE	12.58	83	220010	5.87	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	489973	5.65	PPBV		100
54)	1,4-DIOXANE	12.62	88	61899	5.39	PPBV	#	1
55)	METHYL METHACRYLATE	12.78	69	97052	5.30	PPBV		96
56)	HEPTANE	12.89	43	211175	5.53	PPBV		99
57)	TVHC as EQUIV HEPTANE	12.89	TIC	875058m	5.65	PPBV		
58)	METHYL ISOBUTYL KETONE	13.51	43	232594	5.28	PPBV		100
59)	cis-1,3-DICHLOROPROPENE	13.49	75	174818	5.72	PPBV		100
60)	TOLUENE	14.52	92	220688	5.76	PPBV		98
61)	trans-1,3-DICHLOROPROPENE	14.02	75	160109	5.55	PPBV		98
62)	1,1,2-TRICHLOROETHANE	14.22	83	104920	5.62	PPBV		99
64)	2-HEXANONE	14.77	58	106114	4.84	PPBV		99
65)	TETRACHLOROETHYLENE	15.73	164	138854	5.73	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.98	129	201883	5.95	PPBV		99
67)	1,2-DIBROMOETHANE	15.25	107	165077	5.57	PPBV		99
68)	OCTANE	15.52	43	255954	5.88	PPBV		98
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	133363	5.86	PPBV	#	100
70)	CHLOROBENZENE	16.46	112	231057	5.47	PPBV		99
71)	ETHYLBENZENE	16.85	91	409497	5.77	PPBV		100
72)	m,p-XYLENE	17.04	106	295999	11.54	PPBV		97
73)	o-XYLENE	17.56	106	139126	5.77	PPBV		99
74)	STYRENE	17.44	104	204875	5.98	PPBV		99
75)	NONANE	17.75	43	217199	6.10	PPBV		99
76)	BROMOFORM	17.16	173	155446	5.90	PPBV		100
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	163608	5.67	PPBV		100
79)	ISOPROPYLBENZENE	18.19	105	372910	5.94	PPBV		99
80)	2-CHLOROTOLUENE	18.71	126	82960	5.84	PPBV		96
81)	n-PROPYLBENZENE	18.73	120	88663	5.89	PPBV		92
82)	4-ETHYLTOLUENE	18.88	105	284832	5.84	PPBV		100
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	244382	5.99	PPBV		98
84)	TERT-BUTYLBENZENE	19.41	134	59319	5.80	PPBV		96
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	205420	6.01	PPBV		98
86)	m-DICHLOROBENZENE	19.60	146	112849	5.55	PPBV		99
87)	BENZYL CHLORIDE	19.58	91	108525	5.08	PPBV		99
88)	p-DICHLOROBENZENE	19.68	146	97250	5.17	PPBV		99
89)	SEC-BUTYLBENZENE	19.71	134	62744	5.80	PPBV		95
90)	p-ISOPROPYLTOLUENE	19.88	134	58535	5.82	PPBV		98
91)	o-DICHLOROBENZENE	20.06	146	91069	5.42	PPBV		99
92)	n-BUTYLBENZENE	20.34	134	36572	5.43	PPBV		98
93)	HEXACHLOROBUTADIENE	22.43	225	27794	4.70	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:50 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

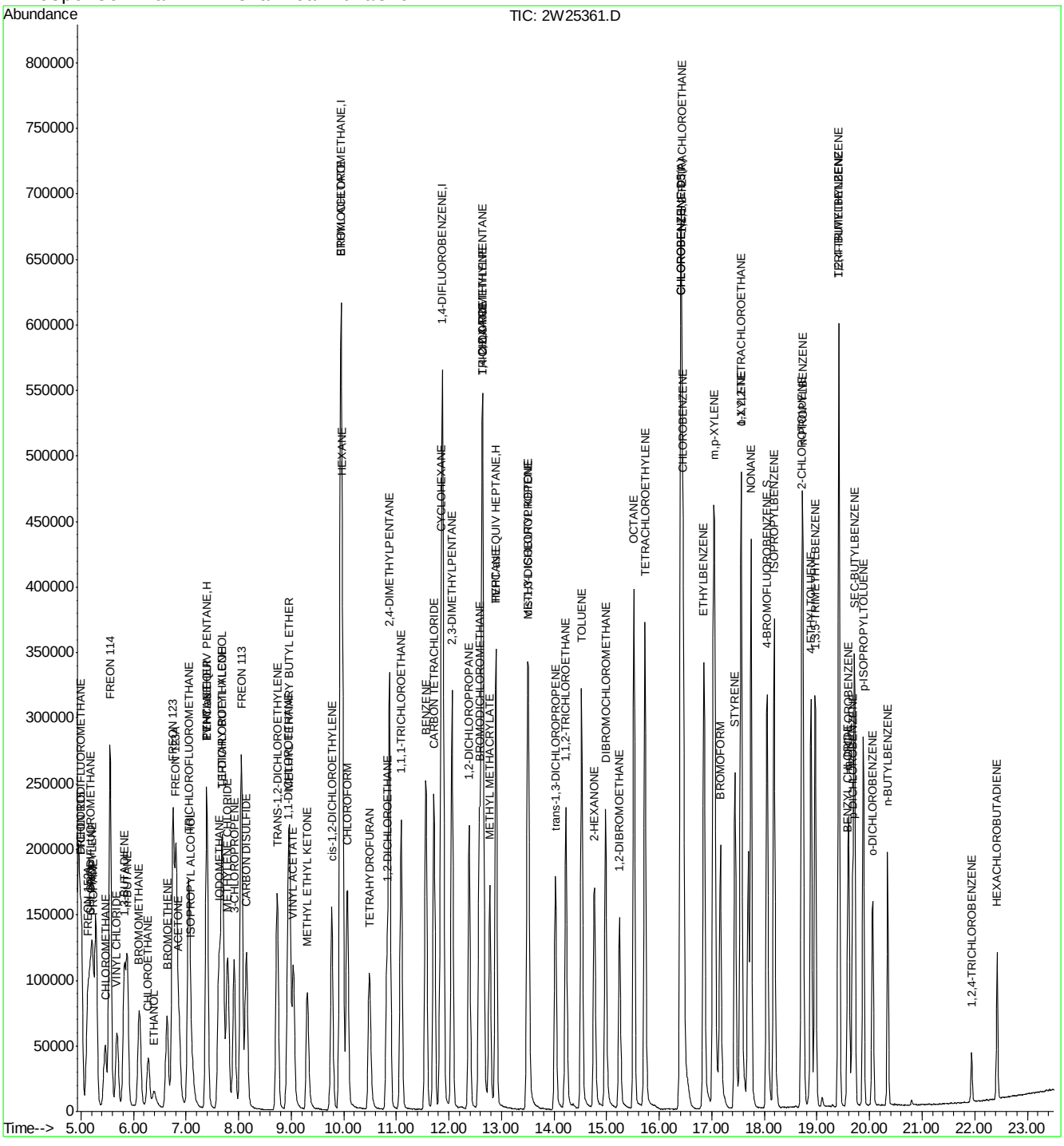
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	16055	4.21	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:53 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

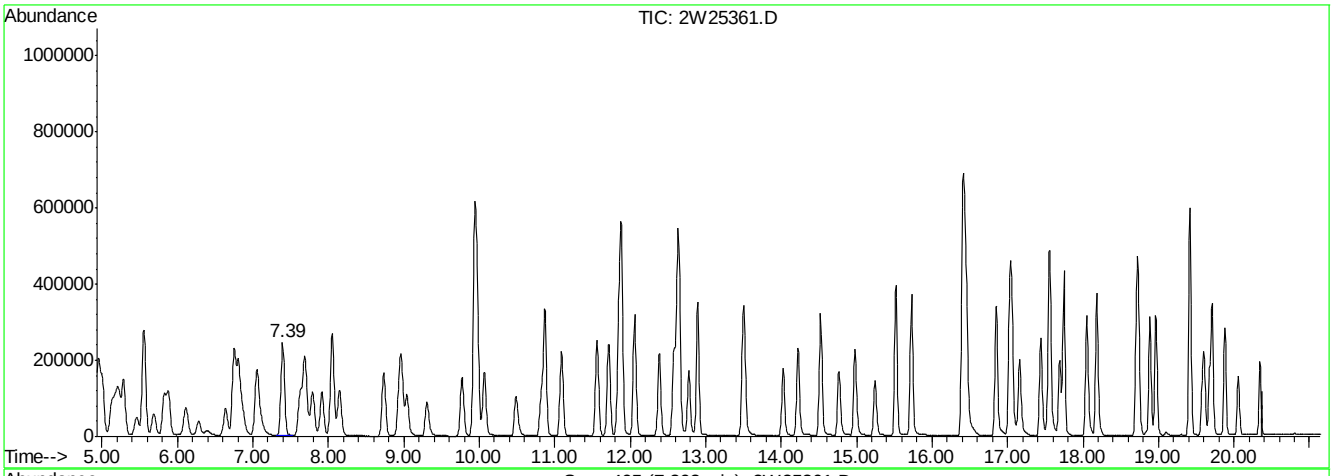


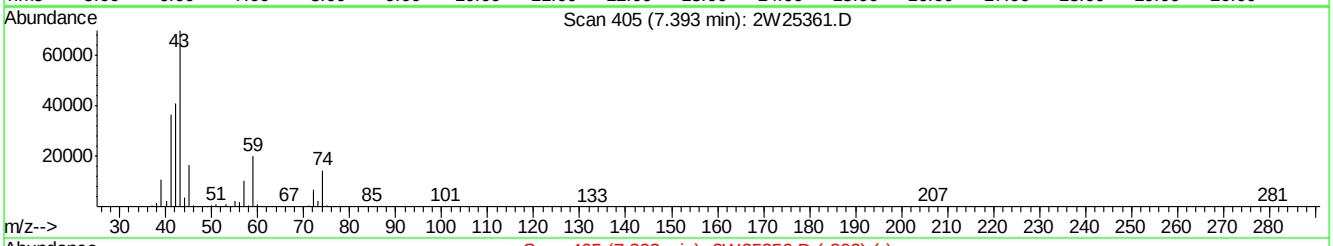
ACCUTEST Laboratories JA28238

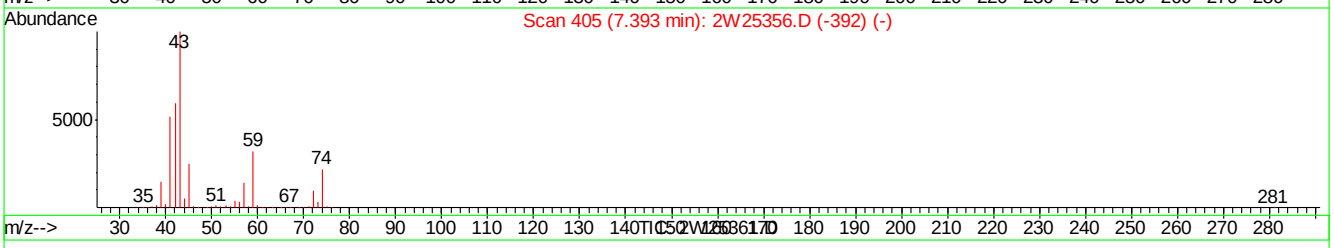
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:53 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 5.46PPBV m

response 823743

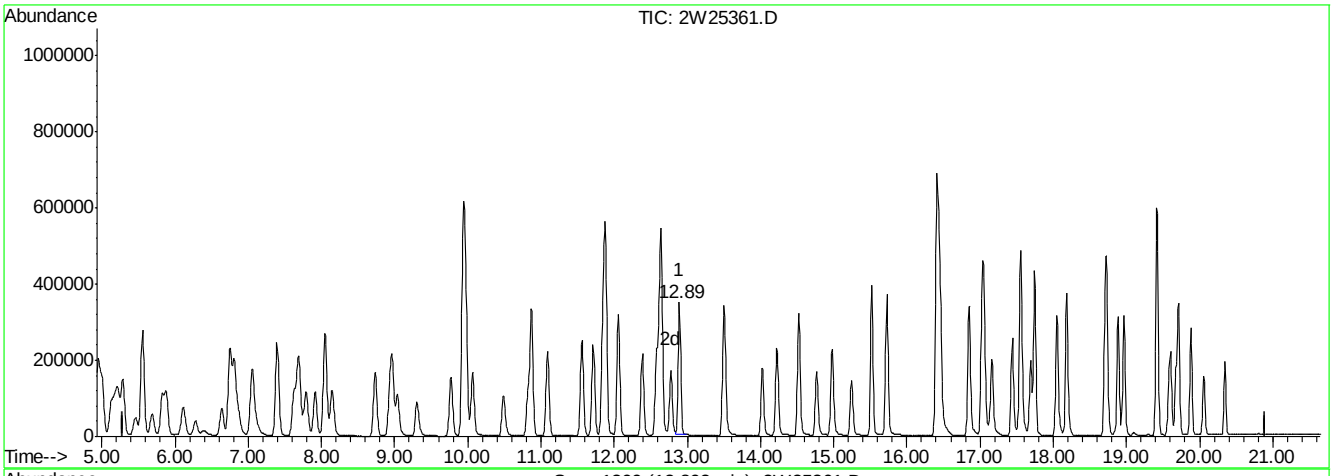
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

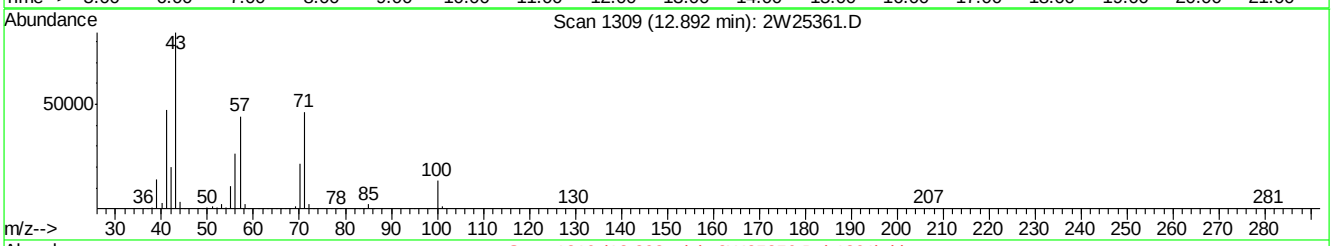
2W25361.D M2W1070.M Sun Sep 06 15:07:46 2009 MS2W

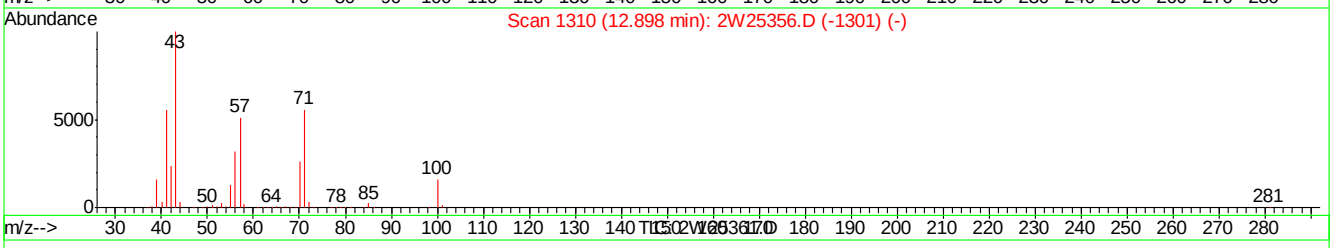
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:53 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 5.65PPBV m

response 875058

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25361.D M2W1070.M Sun Sep 06 15:07:50 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:53 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	138219	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	647187	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	294519	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	294519	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	133812	4.45	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 89.00%

Target Compounds						Qvalue
2) FREON 115	5.01	119	1394	0.10	PPBV #	75
3) DICHLORODIFLUOROMETHANE	5.01	85	2044	0.10	PPBV #	49
4) FREON 152A	5.13	65	1387	0.09	PPBV #	46
8) FREON 114	5.56	85	5613	0.10	PPBV	98
10) VINYL CHLORIDE	5.68	62	2367	0.09	PPBV #	50
11) 1,3-BUTADIENE	5.84	54	1737	0.09	PPBV	90
12) n-BUTANE	5.89	43	4761	0.11	PPBV #	73
13) BROMOMETHANE	6.11	94	1943	0.10	PPBV #	87
14) CHLOROETHANE	6.30	64	1076	0.08	PPBV #	45
15) FREON 123	6.75	83	4133	0.09	PPBV #	91
16) FREON 123A	6.81	117	2281	0.10	PPBV #	90
17) TRICHLOROFLUOROMETHANE	7.06	101	4631	0.10	PPBV #	96
20) PENTANE	7.40	42	2892	0.10	PPBV #	80
23) IODOMETHANE	7.63	142	4342	0.09	PPBV	97
24) 1,1-DICHLOROETHYLENE	7.69	96	1938	0.10	PPBV #	86
25) CARBON DISULFIDE	8.15	76	6360	0.10	PPBV #	85
27) BROMOETHENE	6.63	106	1665	0.09	PPBV #	88
30) FREON 113	8.06	151	2894	0.10	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	2169	0.10	PPBV	89
32) TERTIARY BUTYL ALCOHOL	7.81	59	3970	0.10	PPBV #	78
33) METHYL TERTIARY BUTYL ETHE	9.04	73	5089	0.10	PPBV	91
34) TETRAHYDROFURAN	10.58	42	2486	0.09	PPBV #	39
35) HEXANE	9.98	57	3008	0.09	PPBV	87
37) 1,1-DICHLOROETHANE	8.95	63	3980	0.09	PPBV #	90
39) cis-1,2-DICHLOROETHYLENE	9.77	96	2117	0.10	PPBV	88
41) CHLOROFORM	10.07	83	3663	0.09	PPBV	95
42) 2,4-DIMETHYLPENTANE	10.87	57	3510	0.09	PPBV #	80
43) 1,1,1-TRICHLOROETHANE	11.09	97	3851	0.09	PPBV	95
44) CARBON TETRACHLORIDE	11.71	117	3906	0.09	PPBV	99
45) 1,2-DICHLOROETHANE	10.83	62	2589	0.09	PPBV #	49
47) BENZENE	11.57	78	6690	0.10	PPBV	97
48) CYCLOHEXANE	11.84	84	3283	0.11	PPBV #	1
49) 2,3-DIMETHYLPENTANE	12.06	71	1299	0.09	PPBV #	81
50) TRICHLOROETHYLENE	12.62	95	2382	0.10	PPBV	99
51) 1,2-DICHLOROPROPANE	12.39	63	2309	0.09	PPBV #	40
52) BROMODICHLOROMETHANE	12.58	83	3721	0.09	PPBV #	94
53) 2,2,4-TRIMETHYLPENTANE	12.65	57	8841	0.10	PPBV #	94
54) 1,4-DIOXANE	12.75	88	1356	0.11	PPBV #	8
55) METHYL METHACRYLATE	12.80	69	1891	0.10	PPBV #	86
56) HEPTANE	12.89	43	3919	0.10	PPBV	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:53 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

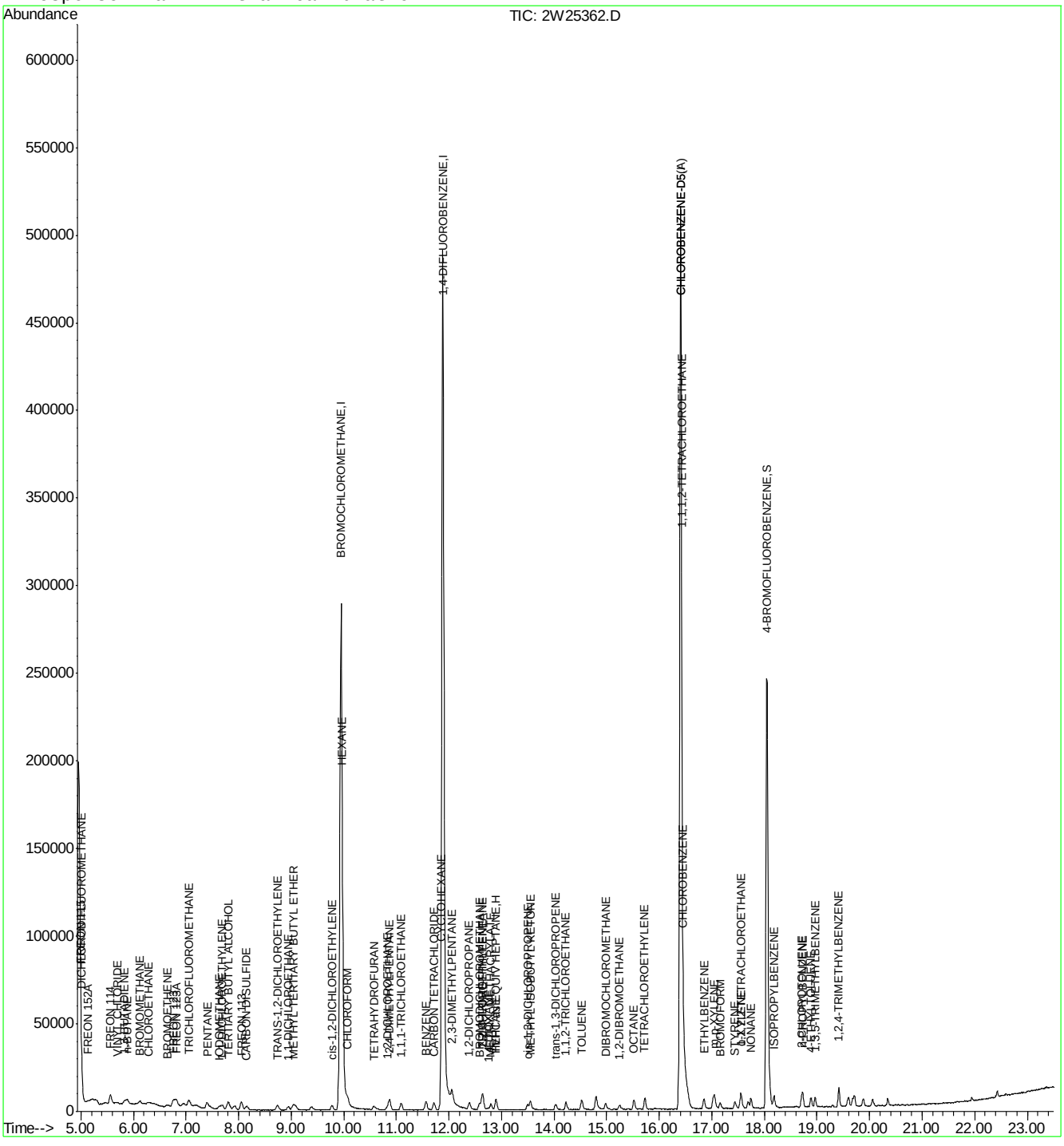
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
57)	TVHC as EQUIV HEPTANE	12.89	TIC	15316m	0.09	PPBV		
58)	METHYL ISOBUTYL KETONE	13.55	43	6095	0.13	PPBV	#	81
59)	cis-1,3-DICHLOROPROPENE	13.49	75	2961	0.09	PPBV	#	72
60)	TOLUENE	14.53	92	3950	0.10	PPBV	#	92
61)	trans-1,3-DICHLOROPROPENE	14.03	75	2833	0.09	PPBV	#	71
62)	1,1,2-TRICHLOROETHANE	14.22	83	1925	0.10	PPBV		98
65)	TETRACHLOROETHYLENE	15.73	164	2437	0.11	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.99	129	3188	0.10	PPBV	#	83
67)	1,2-DIBROMOETHANE	15.24	107	3028	0.11	PPBV	#	94
68)	OCTANE	15.52	43	3811	0.09	PPBV		94
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	2059	0.10	PPBV	#	95
70)	CHLOROBENZENE	16.46	112	4446	0.11	PPBV		85
71)	ETHYLBENZENE	16.85	91	7173	0.11	PPBV	#	89
72)	m,p-XYLENE	17.05	106	5394	0.22	PPBV		97
73)	o-XYLENE	17.55	106	2312	0.10	PPBV	#	78
74)	STYRENE	17.44	104	2976	0.09	PPBV		93
75)	NONANE	17.74	43	3027	0.09	PPBV	#	58
76)	BROMOFORM	17.16	173	2418	0.10	PPBV	#	92
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	3166	0.12	PPBV	#	94
79)	ISOPROPYLBENZENE	18.18	105	6310	0.11	PPBV		98
80)	2-CHLOROTOLUENE	18.71	126	1382	0.10	PPBV	#	80
81)	n-PROPYLBENZENE	18.73	120	1399	0.10	PPBV		68
82)	4-ETHYLTOLUENE	18.89	105	4871	0.10	PPBV	#	96
83)	1,3,5-TRIMETHYLBENZENE	18.97	105	4109	0.11	PPBV	#	91
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	3524	0.11	PPBV		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:55 2009 Quant Results File: M2W1070.RES

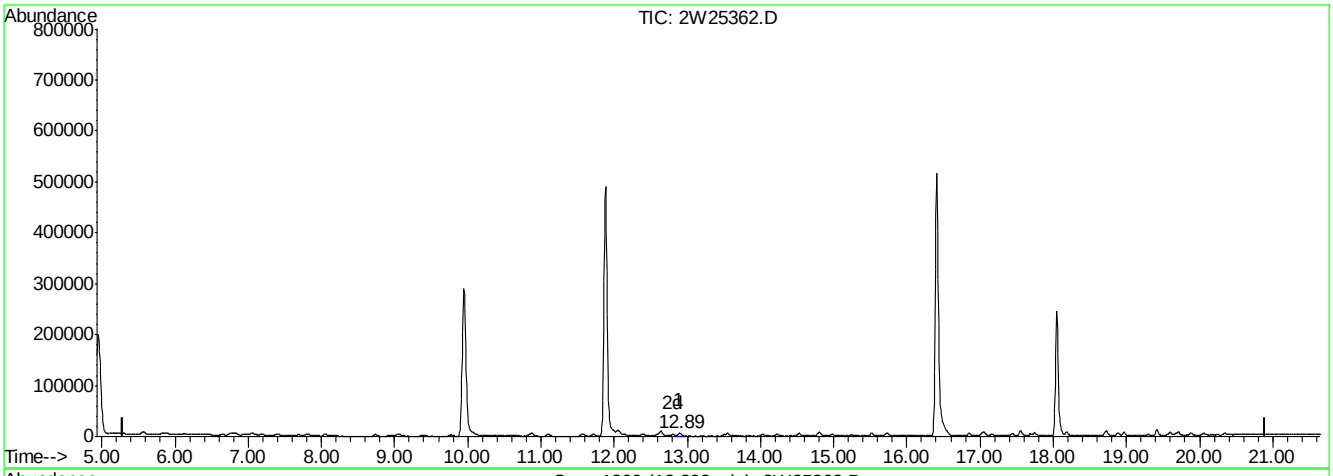
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

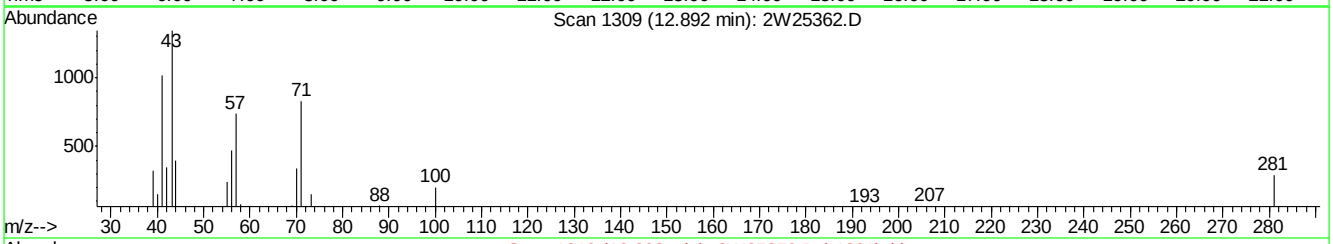


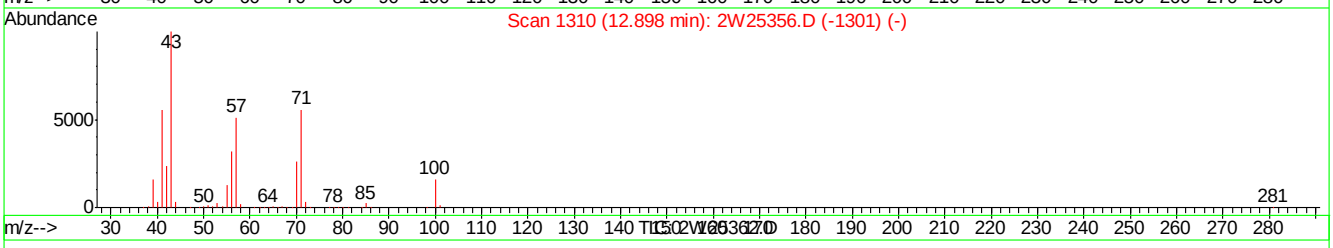
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:55 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 0.09PPBV m

response 15316

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25362.D M2W1070.M Sun Sep 06 15:08:03 2009 MS2W

2W25363.D

Manual Integrations APPROVED (compounds with "m" flag)

Jessica Reitan-Chu 09/14/09 08:59

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1070\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:56 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	130925	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	619828	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	282724	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	282724	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	126044	4.37	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 87.40%

Target Compounds						Qvalue
15) FREON 123	6.75	83	1620	0.04	PPBV #	74
17) TRICHLOROFLUOROMETHANE	7.06	101	2090	0.05	PPBV #	93
23) IODOMETHANE	7.64	142	1692	0.04	PPBV #	34
25) CARBON DISULFIDE	8.15	76	2647	0.04	PPBV #	69
30) FREON 113	8.06	151	1197	0.04	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	9.05	73	2017	0.04	PPBV #	50
35) HEXANE	9.97	57	1309	0.04	PPBV #	63
37) 1,1-DICHLOROETHANE	8.94	63	1573	0.04	PPBV #	50
41) CHLOROFORM	10.06	83	1516	0.04	PPBV #	26
42) 2,4-DIMETHYLPENTANE	10.87	57	1483	0.04	PPBV #	31
43) 1,1,1-TRICHLOROETHANE	11.09	97	1545	0.04	PPBV #	22
44) CARBON TETRACHLORIDE	11.71	117	1651	0.04	PPBV #	83
47) BENZENE	11.57	78	2861	0.04	PPBV #	55
50) TRICHLOROETHYLENE	12.62	95	933m	0.04	PPBV	
52) BROMODICHLOROMETHANE	12.58	83	1441	0.04	PPBV #	25
53) 2,2,4-TRIMETHYLPENTANE	12.64	57	3656	0.04	PPBV #	93
56) HEPTANE	12.90	43	1617	0.04	PPBV #	26
58) METHYL ISOBUTYL KETONE	13.56	43	1672	0.04	PPBV #	48
59) cis-1,3-DICHLOROPROPENE	13.50	75	1116	0.04	PPBV #	25
60) TOLUENE	14.53	92	1355	0.03	PPBV #	80
65) TETRACHLOROETHYLENE	15.73	164	919m	0.04	PPBV	
66) DIBROMOCHLOROMETHANE	14.98	129	1173	0.04	PPBV #	20
68) OCTANE	15.52	43	1508	0.04	PPBV #	35
70) CHLOROBENZENE	16.46	112	1679	0.04	PPBV #	26
71) ETHYLBENZENE	16.85	91	2578	0.04	PPBV #	50
72) m,p-XYLENE	17.04	106	1688	0.07	PPBV	92
73) o-XYLENE	17.55	106	841m	0.04	PPBV	
75) NONANE	17.75	43	1213	0.04	PPBV #	58
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	1073	0.04	PPBV #	25
79) ISOPROPYLBENZENE	18.19	105	2109	0.04	PPBV #	53
83) 1,3,5-TRIMETHYLBENZENE	18.97	105	1368	0.04	PPBV #	33
85) 1,2,4-TRIMETHYLBENZENE	19.42	105	1114	0.04	PPBV #	65

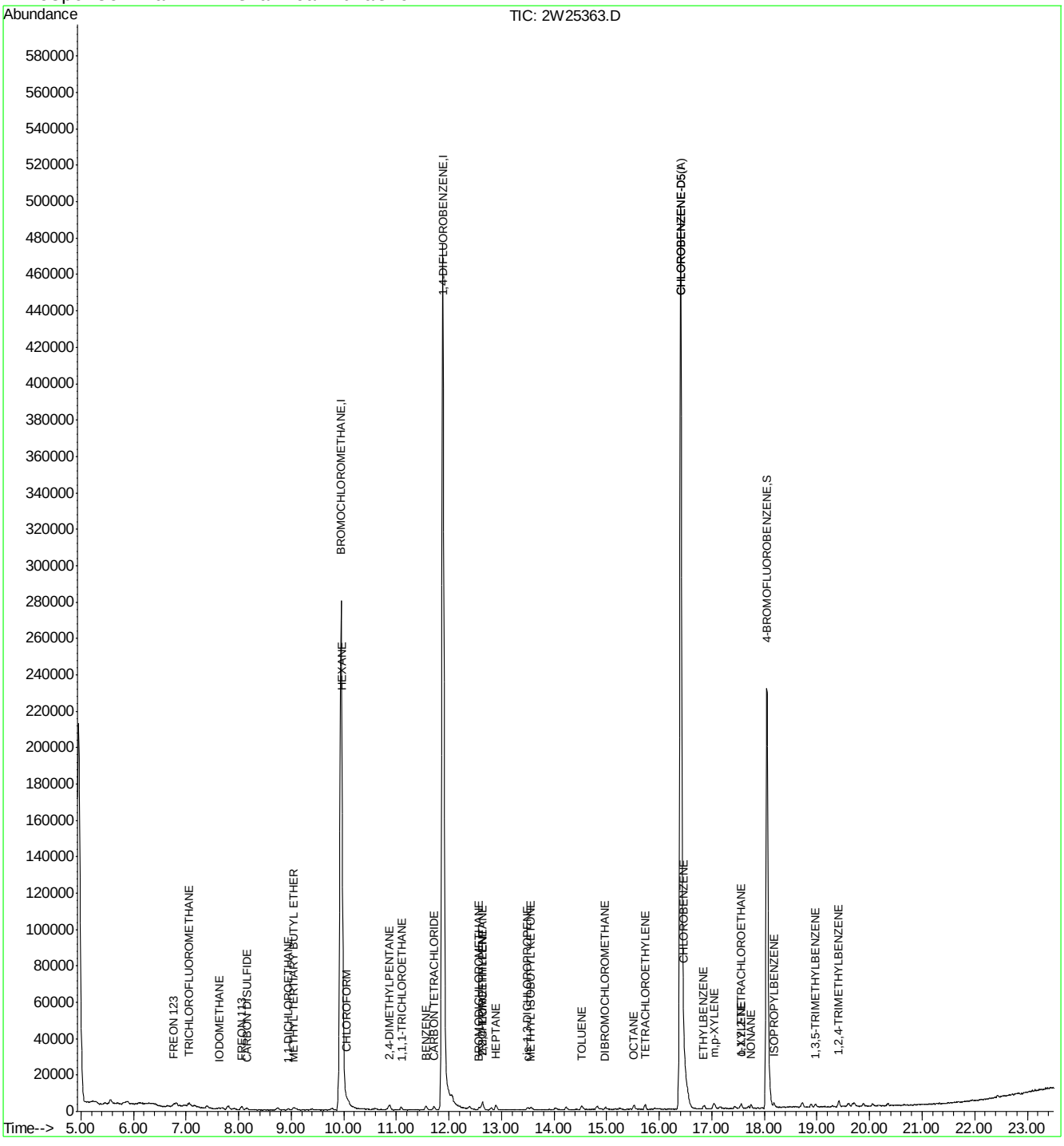
(#) = qualifier out of range (m) = manual integration (+) = signals summed

2W25363.D M2W1070.M Mon Sep 14 08:56:01 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1070\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 14 8:55 2009 Quant Results File: M2W1070.RES

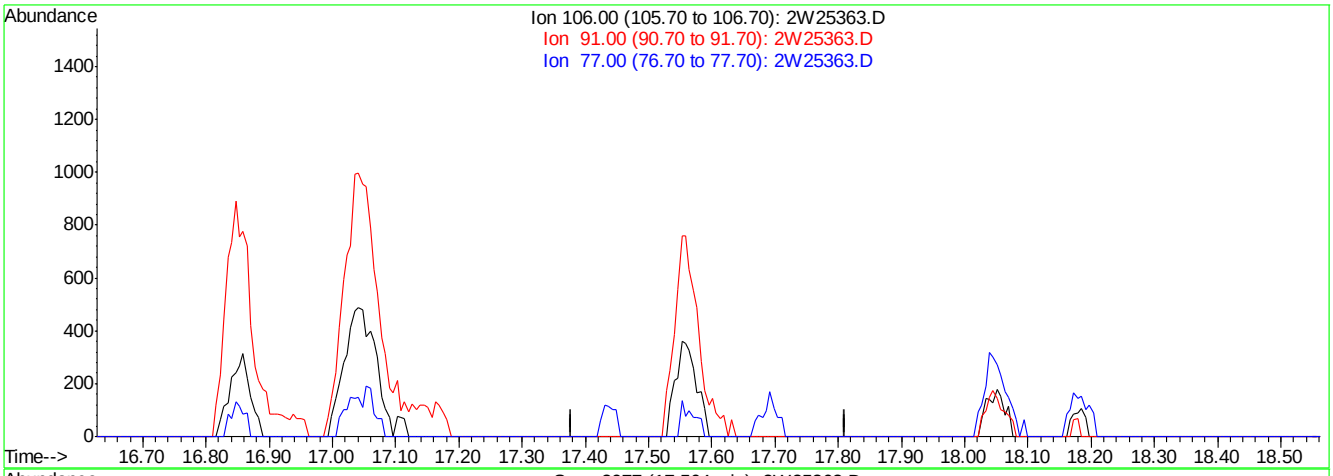
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

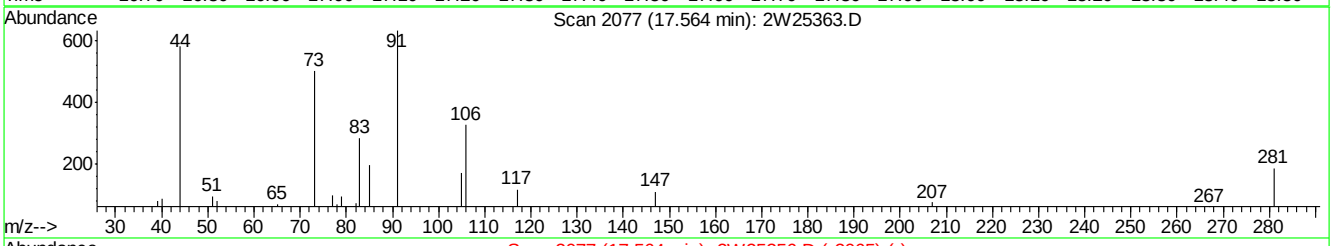


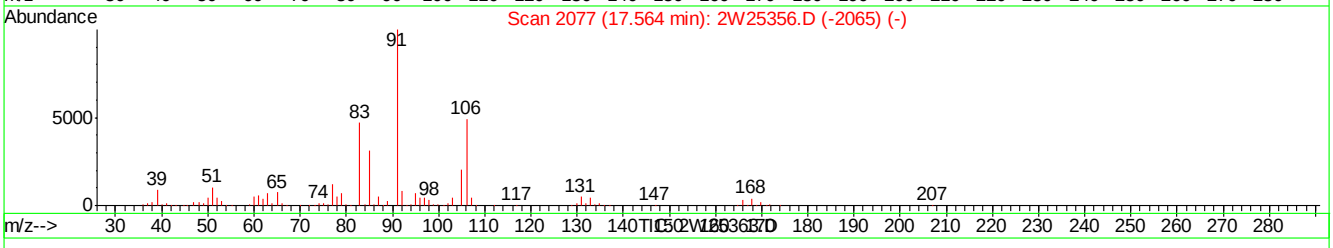
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(73) o-XYLENE

17.56min 0.00PPBV

response 0

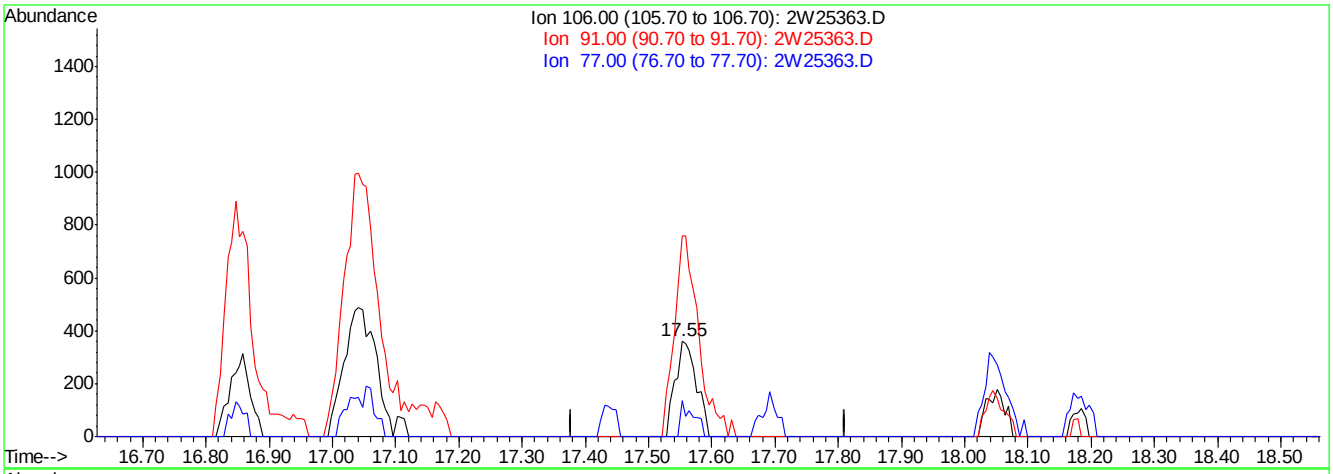
Ion	Exp%	Act%
106.00	100	0.00
91.00	208.60	0.00#
77.00	26.50	0.00#
0.00	0.00	0.00

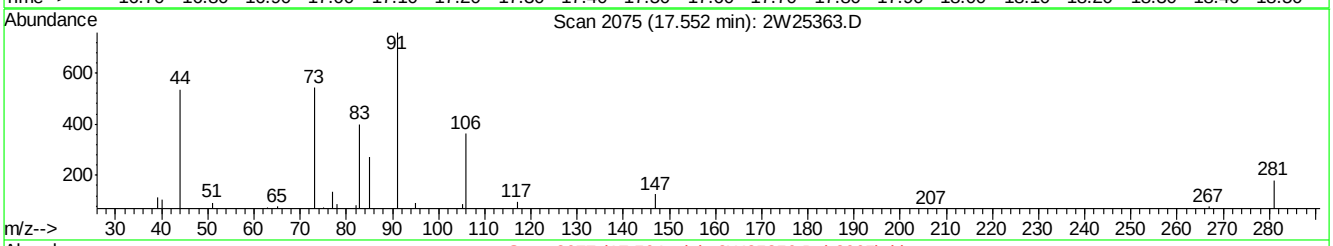
2W25363.D M2W1070.M Sun Sep 06 14:56:26 2009 MS2W

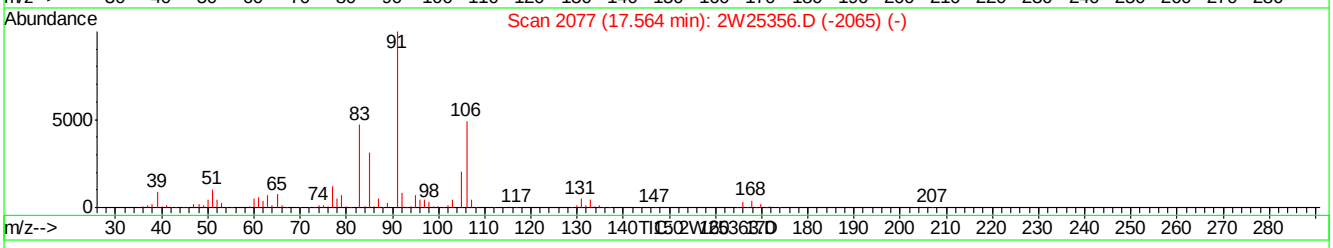
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(73) o-XYLENE

17.55min 0.04PPBV m

response 841

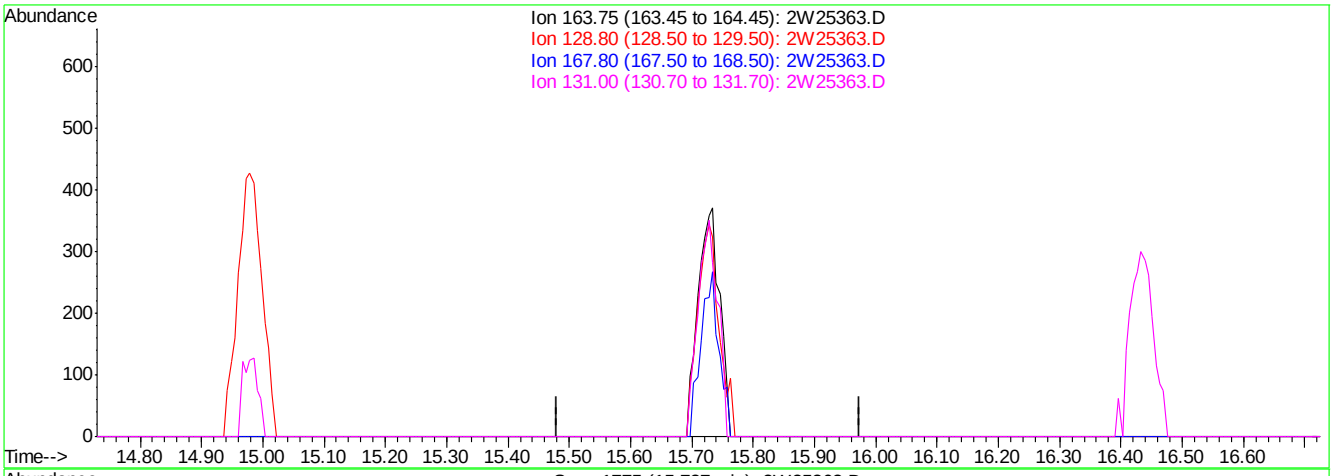
Ion	Exp%	Act%
106.00	100	100
91.00	208.60	0.00#
77.00	26.50	0.00#
0.00	0.00	0.00

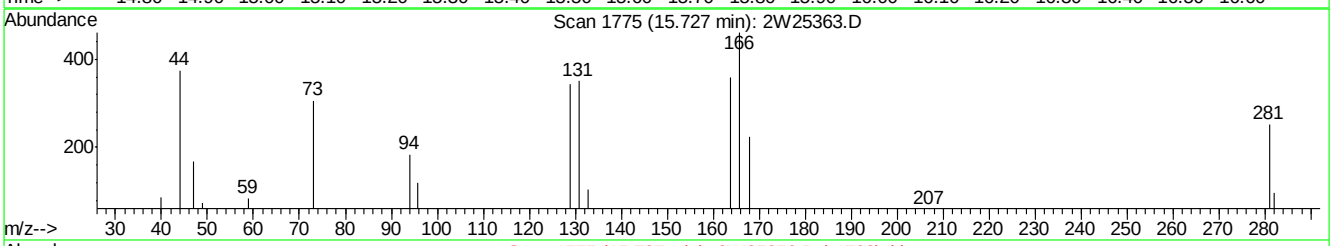
2W25363.D M2W1070.M Sun Sep 06 14:56:32 2009 MS2W

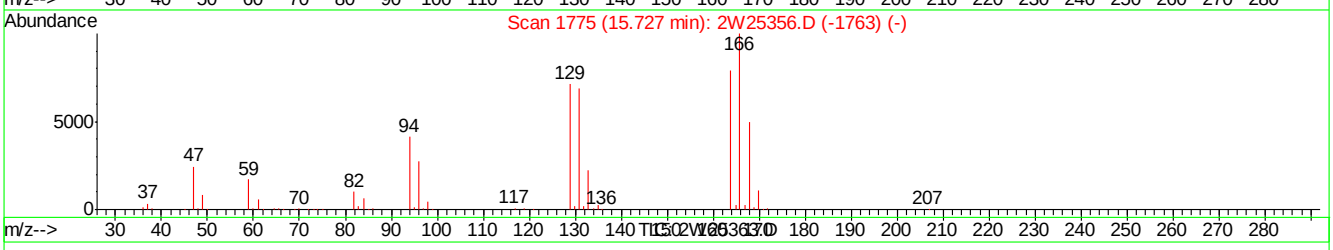
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(65) TETRACHLOROETHYLENE

15.73min 0.00PPBV

response 0

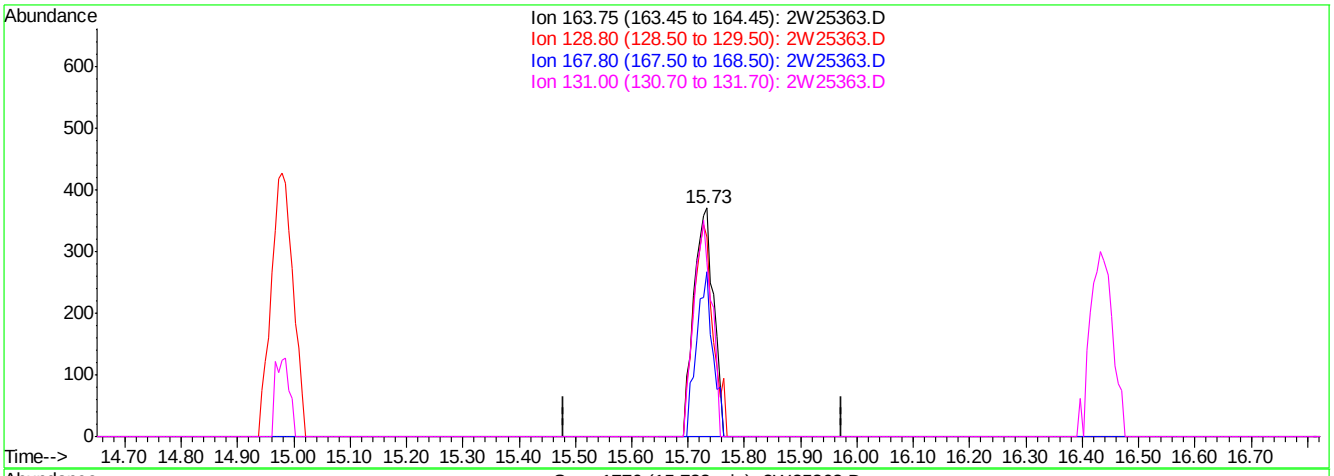
Ion	Exp%	Act%
163.75	100	0.00
128.80	90.30	0.00#
167.80	63.20	0.00#
131.00	87.70	0.00#

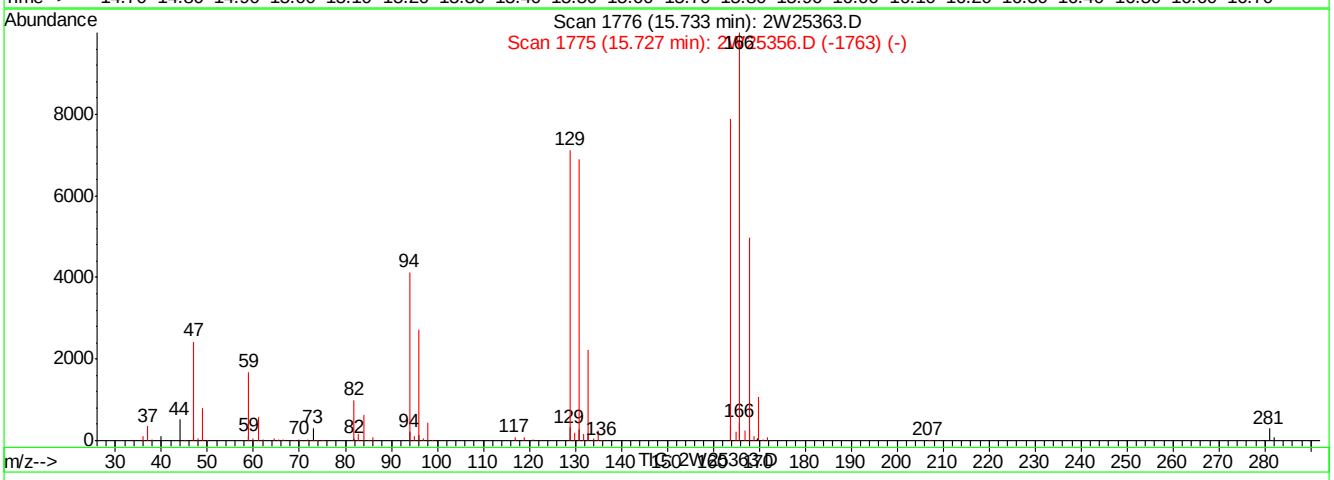
2W25363.D M2W1070.M Sun Sep 06 14:56:35 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(65) TETRACHLOROETHYLENE

15.73min 0.04PPBV m

response 919

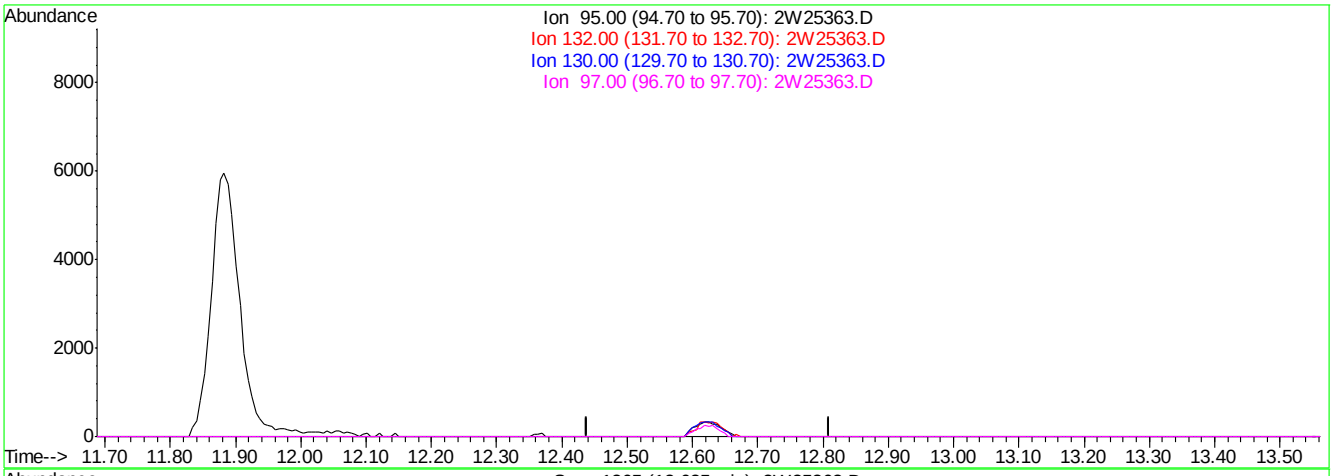
Ion	Exp%	Act%
163.75	100	100
128.80	90.30	0.00#
167.80	63.20	0.00#
131.00	87.70	0.00#

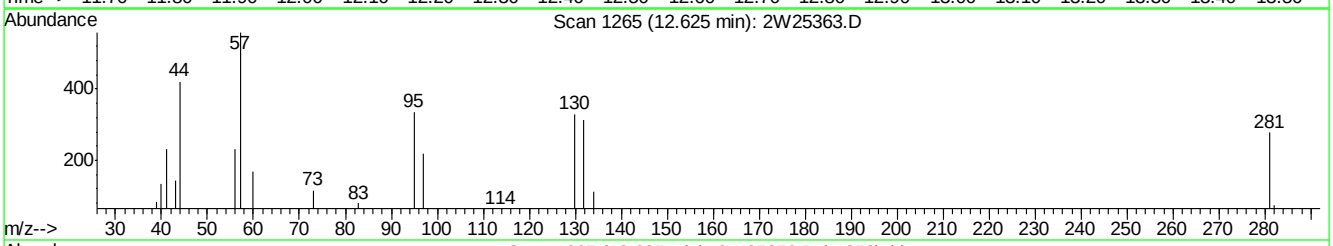
2W25363.D M2W1070.M Sun Sep 06 14:56:40 2009 MS2W

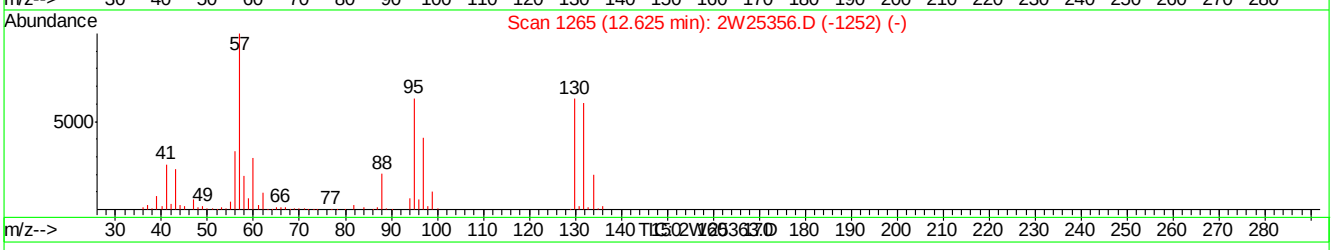
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(50) TRICHLOROETHYLENE

12.62min 0.00PPBV

response 0

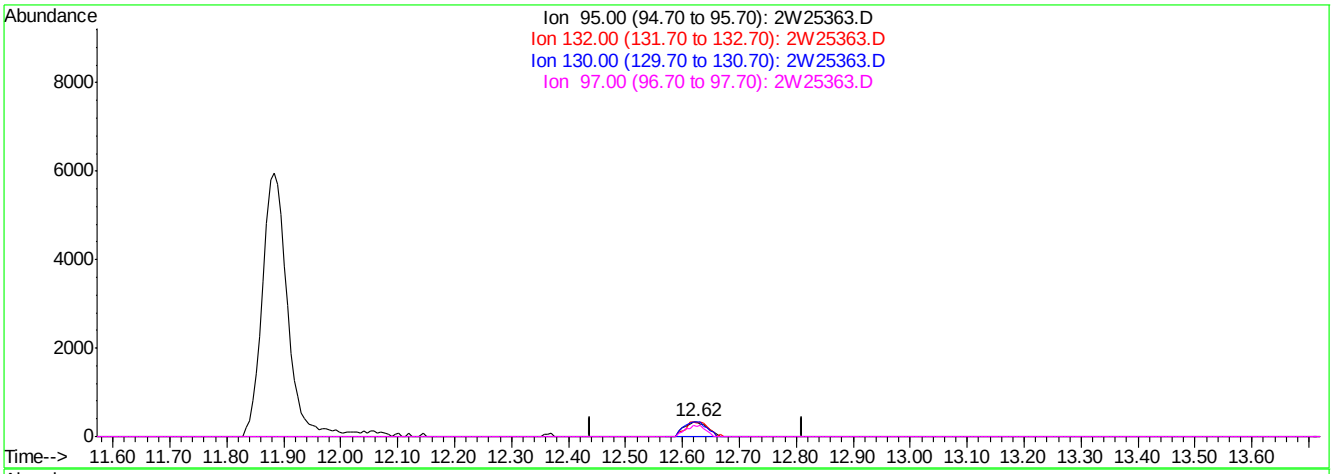
Ion	Exp%	Act%
95.00	100	0.00
132.00	96.70	0.00#
130.00	100.30	0.00#
97.00	65.20	0.00#

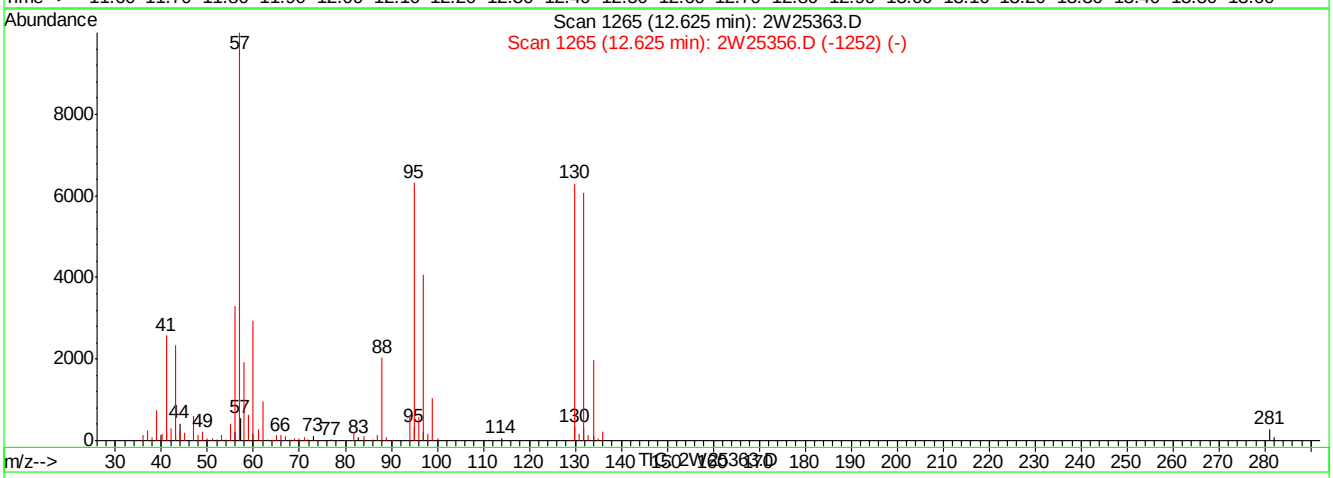
2W25363.D M2W1070.M Sun Sep 06 14:56:44 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(50) TRICHLOROETHYLENE

12.62min 0.04PPBV m

response 933

Ion	Exp%	Act%
95.00	100	100
132.00	96.70	0.00#
130.00	100.30	0.00#
97.00	65.20	0.00#

2W25363.D M2W1070.M Sun Sep 06 14:56:49 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	108209	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	559053	10.00	PPBV	0.01
63) CHLOROBENZENE-D5	16.42	82	314927	10.00	PPBV	0.01
95) CHLOROBENZENE-D5(A)	16.42	82	314876	10.00	PPBV	0.01

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.06	95	184169	5.73	PPBV	0.01

Spiked Amount 5.000 Range 65 - 128 Recovery = 114.60%

Target Compounds						Qvalue
2) FREON 115	5.01	119	403538	36.23	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	602451	35.83	PPBV	99
4) FREON 152A	5.12	65	428657	37.14	PPBV	98
5) CHLORODIFLUOROMETHANE	5.17	67	160279	35.57	PPBV	99
6) PROPYLENE	5.21	41	638709	33.75	PPBV	98
7) PROPANE	5.23	43	230506	31.25	PPBV #	100
8) FREON 114	5.55	85	1439797	31.90	PPBV	94
9) CHLOROMETHANE	5.46	52	234813	37.11	PPBV	93
10) VINYL CHLORIDE	5.68	62	741038	37.37	PPBV	99
11) 1,3-BUTADIENE	5.82	54	563053	37.07	PPBV	94
12) n-BUTANE	5.88	43	1078085	32.99	PPBV	97
13) BROMOMETHANE	6.11	94	583651	36.74	PPBV	99
14) CHLOROETHANE	6.28	64	415724	39.63	PPBV	99
15) FREON 123	6.75	83	1201161	35.05	PPBV #	96
16) FREON 123A	6.81	117	695244	37.28	PPBV	89
17) TRICHLOROFLUOROMETHANE	7.05	101	1309828	34.84	PPBV	97
18) ISOPROPYL ALCOHOL	7.10	45	943884	34.10	PPBV	100
19) ACETONE	6.85	58	294854	37.64	PPBV #	89
20) PENTANE	7.39	42	717870	31.18	PPBV	99
21) TVHC as EQUIV PENTANE	7.39	TIC	4496116m	35.62	PPBV	
22) ETHYL ETHER	7.38	74	308686	40.95	PPBV	94
23) IODOMETHANE	7.62	142	1396358	37.75	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.68	96	538217	36.24	PPBV	92
25) CARBON DISULFIDE	8.15	76	1741606	34.36	PPBV	98
26) ETHANOL	6.38	45	233827	36.16	PPBV	100
27) BROMOETHENE	6.64	106	558420	38.25	PPBV	99
28) METHYLENE CHLORIDE	7.79	84	518568	34.79	PPBV	97
29) 3-CHLOROPROPENE	7.92	76	298689	39.77	PPBV #	89
30) FREON 113	8.05	151	851830	36.37	PPBV	95
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	645748	36.76	PPBV	95
32) TERTIARY BUTYL ALCOHOL	7.72	59	374746	11.96	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	8.97	73	1516943	36.62	PPBV	99
34) TETRAHYDROFURAN	10.48	42	849696	39.96	PPBV	95
35) HEXANE	9.98	57	888921	33.77	PPBV	96
36) VINYL ACETATE	9.05	86	153004	44.22	PPBV #	70
37) 1,1-DICHLOROETHANE	8.94	63	1141427	34.58	PPBV	97
38) METHYL ETHYL KETONE	9.32	72	331329	41.70	PPBV #	83
39) cis-1,2-DICHLOROETHYLENE	9.78	96	649341	37.76	PPBV	95
40) ETHYL ACETATE	9.95	61	180564	36.05	PPBV #	61
41) CHLOROFORM	10.08	83	1148591	36.57	PPBV	98

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.88	57	1089645	35.29	PPBV		97
43) 1,1,1-TRICHLOROETHANE	11.10	97	1151547	35.81	PPBV		98
44) CARBON TETRACHLORIDE	11.72	117	1182635	35.41	PPBV		98
45) 1,2-DICHLOROETHANE	10.83	62	827068	36.68	PPBV		98
47) BENZENE	11.57	78	1853356	32.12	PPBV		98
48) CYCLOHEXANE	11.85	84	857013	33.12	PPBV		91
49) 2,3-DIMETHYLPENTANE	12.06	71	447513	37.24	PPBV		88
50) TRICHLOROETHYLENE	12.63	95	638703	30.40	PPBV		93
51) 1,2-DICHLOROPROPANE	12.40	63	762120	35.48	PPBV		98
52) BROMODICHLOROMETHANE	12.59	83	1121669	32.72	PPBV		97
53) 2,2,4-TRIMETHYLPENTANE	12.66	57	2075472	26.18	PPBV		95
54) 1,4-DIOXANE	12.62	88	331928	31.57	PPBV	#	76
55) METHYL METHACRYLATE	12.79	69	660652	39.46	PPBV		93
56) HEPTANE	12.90	43	1076158	30.81	PPBV		91
57) TVHC as EQUIV HEPTANE	12.90	TIC	4758036m	33.59	PPBV		
58) METHYL ISOBUTYL KETONE	13.53	43	1240268	30.76	PPBV		93
59) cis-1,3-DICHLOROPROPENE	13.50	75	1019572	36.47	PPBV		96
60) TOLUENE	14.53	92	1240792	35.41	PPBV		93
61) trans-1,3-DICHLOROPROPENE	14.04	75	1024176	38.82	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.24	83	610424	35.76	PPBV		98
64) 2-HEXANONE	14.78	58	691821	31.00	PPBV		93
65) TETRACHLOROETHYLENE	15.74	164	766484	31.07	PPBV		99
66) DIBROMOCHLOROMETHANE	15.00	129	1179869	34.18	PPBV		99
67) 1,2-DIBROMOETHANE	15.26	107	1015513	33.64	PPBV		98
68) OCTANE	15.53	43	1278014	28.82	PPBV	#	88
69) 1,1,1,2-TETRACHLOROETHANE	16.45	131	776267	33.50	PPBV	#	99
70) CHLOROBENZENE	16.48	112	1276559	29.69	PPBV		97
71) ETHYLBENZENE	16.86	91	2167504	29.99	PPBV		92
72) m,p-XYLENE	17.06	106	1656286	63.42	PPBV		81
73) o-XYLENE	17.58	106	792317	32.29	PPBV	#	87
74) STYRENE	17.45	104	1309501	37.56	PPBV		98
75) NONANE	17.76	43	1084530	29.90	PPBV		90
76) BROMOFORM	17.19	173	1007242	37.57	PPBV		96
78) 1,1,2,2-TETRACHLOROETHANE	17.57	83	883827	30.06	PPBV		97
79) ISOPROPYLBENZENE	18.20	105	2015286	31.54	PPBV		92
80) 2-CHLOROTOLUENE	18.72	126	530674	36.69	PPBV	#	56
81) n-PROPYLBENZENE	18.74	120	587075	38.27	PPBV	#	52
82) 4-ETHYLTOLUENE	18.90	105	1716278	34.56	PPBV		90
83) 1,3,5-TRIMETHYLBENZENE	18.98	105	1435876	34.58	PPBV		93
84) TERT-BUTYLBENZENE	19.43	134	389447	37.41	PPBV		77
85) 1,2,4-TRIMETHYLBENZENE	19.43	105	1162187	33.38	PPBV		98
86) m-DICHLOROBENZENE	19.61	146	809767	39.15	PPBV		97
87) BENZYL CHLORIDE	19.59	91	871496	40.07	PPBV		96
88) p-DICHLOROBENZENE	19.69	146	744511	38.89	PPBV		97
89) SEC-BUTYLBENZENE	19.72	134	445335	40.45	PPBV		70
90) p-ISOPROPYLTOLUENE	19.89	134	436965	42.70	PPBV		84
91) o-DICHLOROBENZENE	20.06	146	685984	40.09	PPBV		98
92) n-BUTYLBENZENE	20.35	134	311579	45.40	PPBV		81
93) HEXACHLOROBUTADIENE	22.43	225	154707	25.67	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

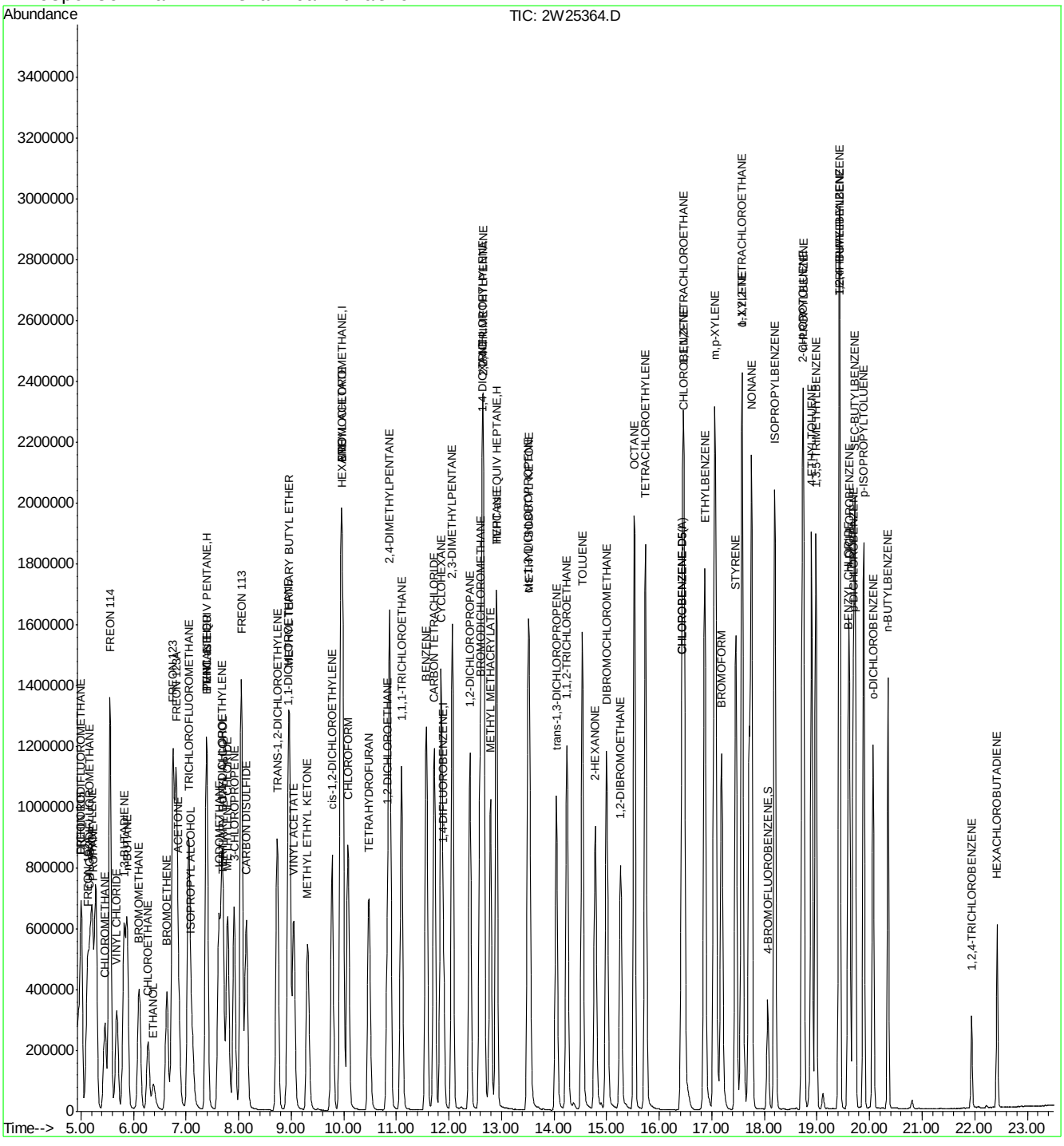
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	129171	33.29	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:57 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

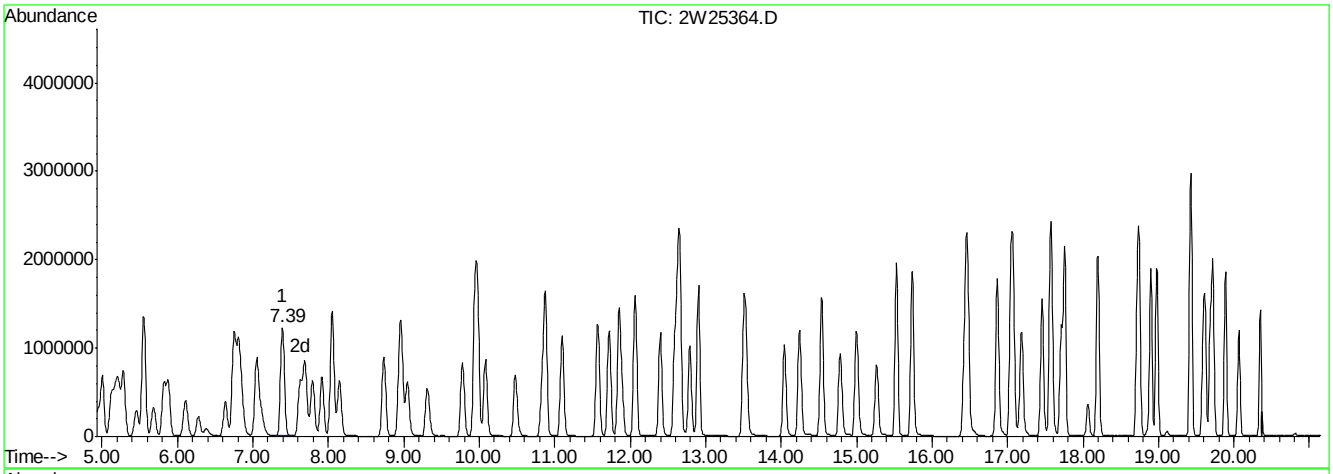


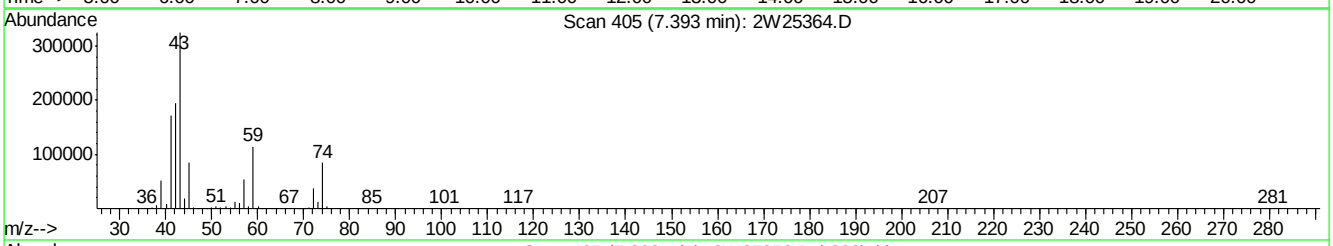
ACCUTEST Laboratories JA28238

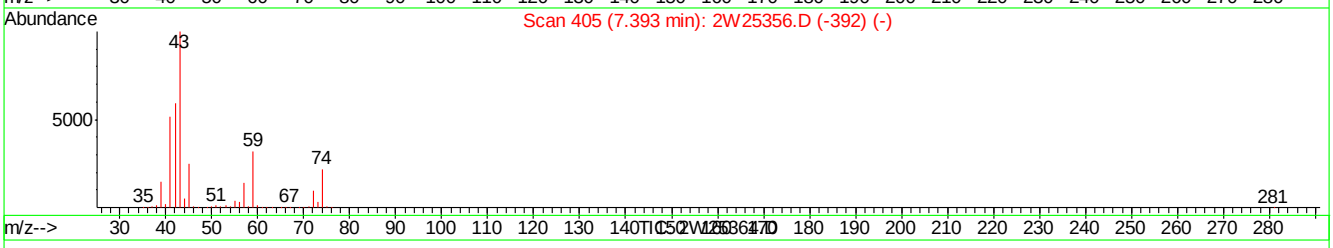
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:57 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 35.62PPBV m

response 4496116

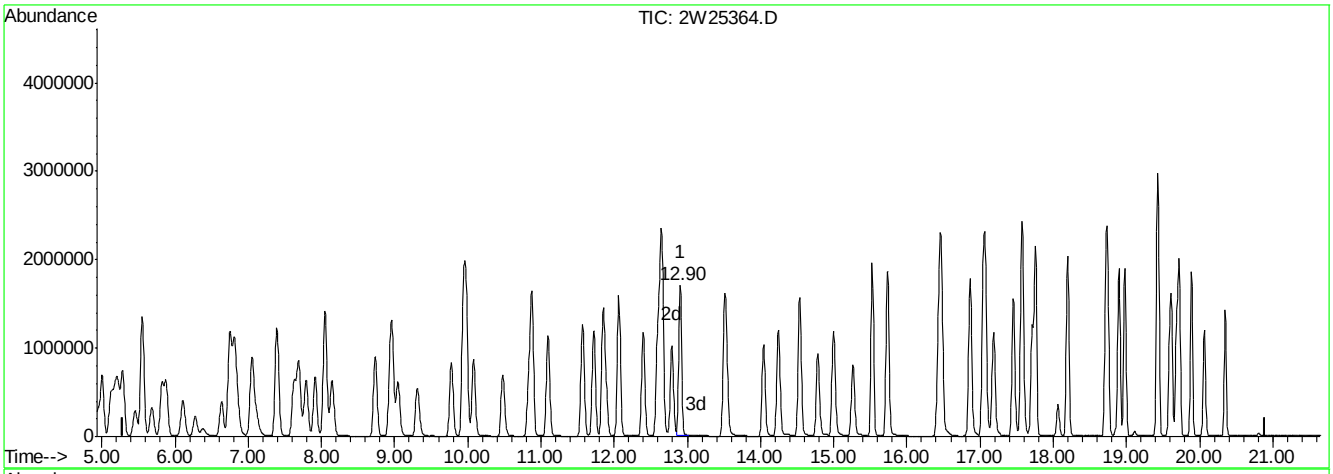
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

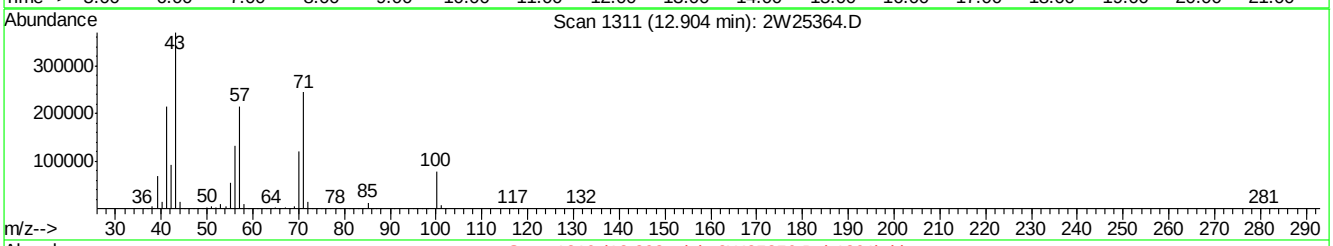
2W25364.D M2W1070.M Sun Sep 06 15:08:13 2009 MS2W

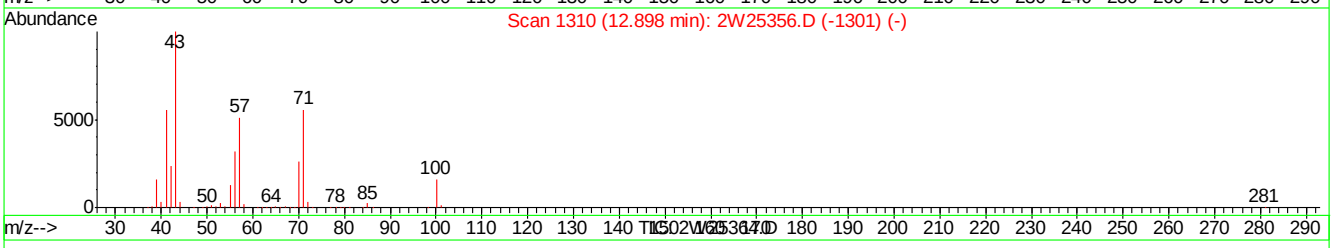
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:57 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 33.59PPBV m

response 4758036

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25364.D M2W1070.M Sun Sep 06 15:08:16 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 15:01:33 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	130248	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	647576	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	337628	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	337502	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	192103	5.58	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 111.60%

Target Compounds						Qvalue
2) FREON 115	5.01	119	122988	9.17	PPBV	95
3) DICHLORODIFLUOROMETHANE	5.02	85	183708	9.08	PPBV	99
4) FREON 152A	5.14	65	132889	9.57	PPBV	97
5) CHLORODIFLUOROMETHANE	5.18	67	50225	9.26	PPBV	99
6) PROPYLENE	5.23	41	204754	8.97	PPBV	98
7) PROPANE	5.25	43	72909	8.21	PPBV #	100
8) FREON 114	5.56	85	520986	9.76	PPBV	97
9) CHLOROMETHANE	5.47	52	70038	9.16	PPBV	93
10) VINYL CHLORIDE	5.70	62	235426	9.86	PPBV	99
11) 1,3-BUTADIENE	5.84	54	177858	9.73	PPBV	96
12) n-BUTANE	5.89	43	358027	9.10	PPBV	98
13) BROMOMETHANE	6.12	94	194174	10.15	PPBV	100
14) CHLOROETHANE	6.29	64	128511	10.18	PPBV	98
15) FREON 123	6.76	83	413447	10.02	PPBV #	99
16) FREON 123A	6.81	117	223781	9.93	PPBV	92
17) TRICHLOROFLUOROMETHANE	7.06	101	437377	9.67	PPBV	100
18) ISOPROPYL ALCOHOL	7.09	45	327274	9.82	PPBV	99
19) ACETONE	6.87	58	89141	9.40	PPBV	93
20) PENTANE	7.40	42	239964	9.06	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1451094m	9.55	PPBV	
22) ETHYL ETHER	7.40	74	91662	10.10	PPBV	96
23) IODOMETHANE	7.64	142	464567	10.44	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.70	96	172441	9.65	PPBV	93
25) CARBON DISULFIDE	8.15	76	590432	9.68	PPBV	98
26) ETHANOL	6.40	45	70947	9.12	PPBV	98
27) BROMOETHENE	6.64	106	185572	10.56	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	160659	8.95	PPBV	94
29) 3-CHLOROPROPENE	7.92	76	89336	9.88	PPBV #	89
30) FREON 113	8.06	151	275660	9.78	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	207601	9.82	PPBV	96
32) TERTIARY BUTYL ALCOHOL	7.70	59	380251	10.08	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	498245	9.99	PPBV	98
34) TETRAHYDROFURAN	10.48	42	254664	9.95	PPBV	96
35) HEXANE	9.98	57	306356	9.67	PPBV	98
36) VINYL ACETATE	9.04	86	43162	10.36	PPBV #	86
37) 1,1-DICHLOROETHANE	8.94	63	377357	9.50	PPBV	99
38) METHYL ETHYL KETONE	9.31	72	99053	10.36	PPBV #	91
39) cis-1,2-DICHLOROETHYLENE	9.78	96	204284	9.87	PPBV	95
40) ETHYL ACETATE	9.95	61	59805	9.92	PPBV #	88
41) CHLOROFORM	10.08	83	370402	9.80	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 15:01:33 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	363971	9.79	PPBV		99
43)	1,1,1-TRICHLOROETHANE	11.10	97	377638	9.76	PPBV		99
44)	CARBON TETRACHLORIDE	11.72	117	396570	9.86	PPBV		100
45)	1,2-DICHLOROETHANE	10.83	62	259531	9.56	PPBV		99
47)	BENZENE	11.57	78	616836	9.23	PPBV		99
48)	CYCLOHEXANE	11.85	84	272875	9.11	PPBV		96
49)	2,3-DIMETHYLPENTANE	12.07	71	136616	9.82	PPBV		97
50)	TRICHLOROETHYLENE	12.62	95	229502	9.43	PPBV		98
51)	1,2-DICHLOROPROPANE	12.39	63	239659	9.63	PPBV		100
52)	BROMODICHLOROMETHANE	12.58	83	389844	9.82	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	841599	9.17	PPBV		99
54)	1,4-DIOXANE	12.62	88	121134	9.95	PPBV	#	65
55)	METHYL METHACRYLATE	12.78	69	198199	10.22	PPBV		95
56)	HEPTANE	12.90	43	368894	9.12	PPBV		97
57)	TVHC as EQUIV HEPTANE	12.90	TIC	1550652m	9.52	PPBV		
58)	METHYL ISOBUTYL KETONE	13.52	43	445932	9.55	PPBV		98
59)	cis-1,3-DICHLOROPROPENE	13.49	75	330517	10.21	PPBV		98
60)	TOLUENE	14.53	92	407225	10.03	PPBV		100
61)	trans-1,3-DICHLOROPROPENE	14.03	75	316242	10.35	PPBV		98
62)	1,1,2-TRICHLOROETHANE	14.23	83	194131	9.82	PPBV		98
64)	2-HEXANONE	14.77	58	227690	9.53	PPBV		97
65)	TETRACHLOROETHYLENE	15.73	164	251535	9.48	PPBV		100
66)	DIBROMOCHLOROMETHANE	14.99	129	376496	10.18	PPBV		100
67)	1,2-DIBROMOETHANE	15.25	107	321963	9.96	PPBV		100
68)	OCTANE	15.52	43	458677	9.66	PPBV		97
69)	1,1,1,2-TETRACHLOROETHANE	16.44	131	249811	10.07	PPBV	#	99
70)	CHLOROBENZENE	16.46	112	434383	9.43	PPBV		98
71)	ETHYLBENZENE	16.85	91	766325	9.90	PPBV		99
72)	m,p-XYLENE	17.05	106	564933	20.20	PPBV		98
73)	o-XYLENE	17.56	106	266882	10.22	PPBV		98
74)	STYRENE	17.44	104	418149	11.20	PPBV		99
75)	NONANE	17.75	43	403607	10.39	PPBV		98
76)	BROMOFORM	17.17	173	315435	10.99	PPBV		99
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	328299	10.43	PPBV		100
79)	ISOPROPYLBENZENE	18.19	105	722793	10.56	PPBV		100
80)	2-CHLOROTOLUENE	18.71	126	167425	10.81	PPBV		95
81)	n-PROPYLBENZENE	18.73	120	183569	11.18	PPBV		94
82)	4-ETHYLTOLUENE	18.89	105	610150	11.50	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.97	105	498071	11.20	PPBV		99
84)	TERT-BUTYLBENZENE	19.42	134	124314	11.16	PPBV		98
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	437120	11.73	PPBV		98
86)	m-DICHLOROBENZENE	19.61	146	257396	11.59	PPBV		99
87)	BENZYL CHLORIDE	19.58	91	280520	12.05	PPBV		99
88)	p-DICHLOROBENZENE	19.68	146	233063	11.37	PPBV		100
89)	SEC-BUTYLBENZENE	19.72	134	135685	11.51	PPBV		98
90)	p-ISOPROPYLTOLUENE	19.88	134	134757	12.30	PPBV		98
91)	o-DICHLOROBENZENE	20.06	146	216007	11.79	PPBV		100
92)	n-BUTYLBENZENE	20.34	134	92526	12.60	PPBV		96
93)	HEXACHLOROBUTADIENE	22.43	225	67628	10.48	PPBV		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 15:01:33 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

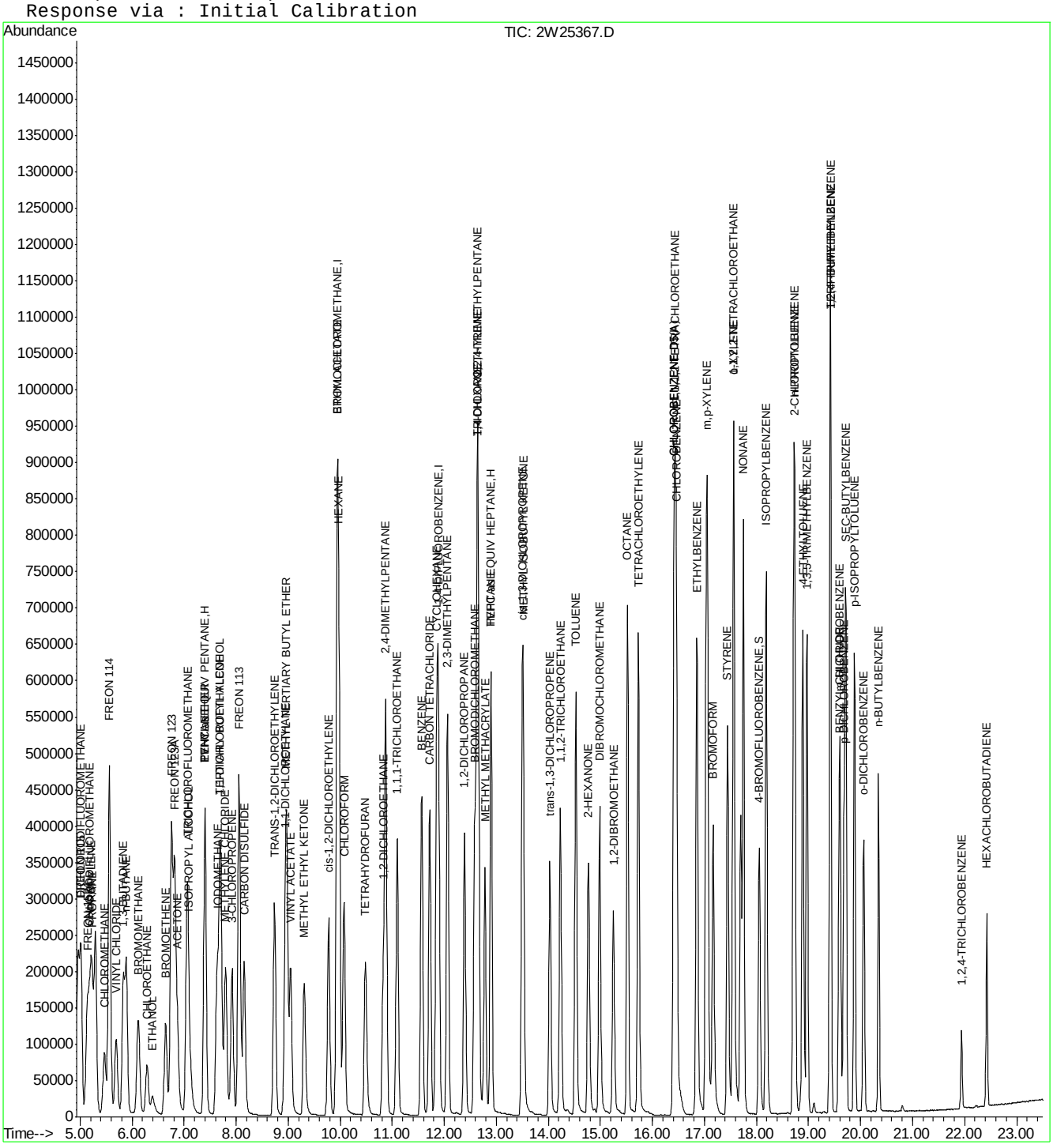
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	46686	11.23	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 15:01 2009 Quant Results File: M2W1070.RES

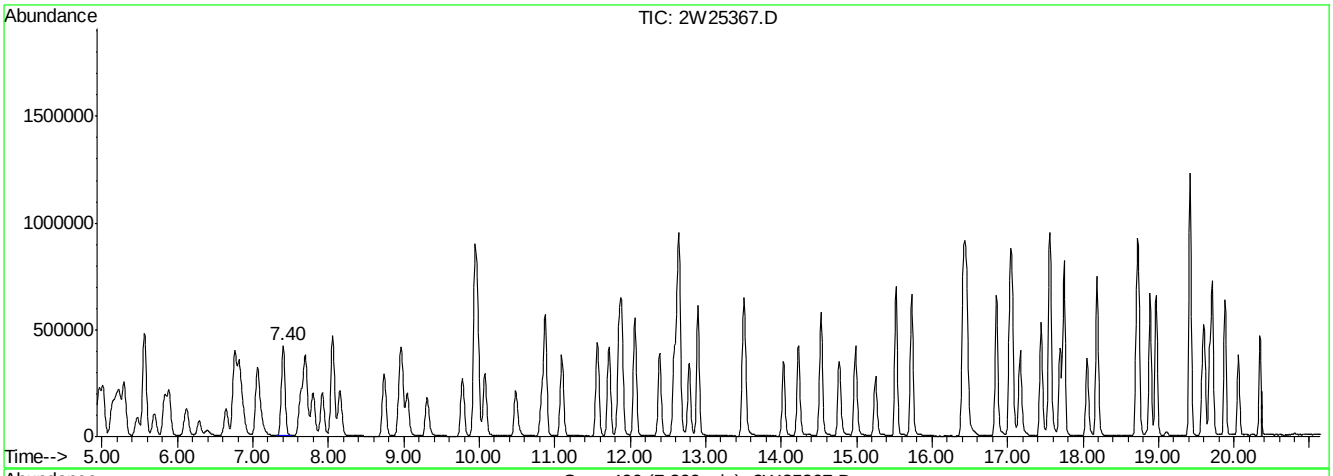
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

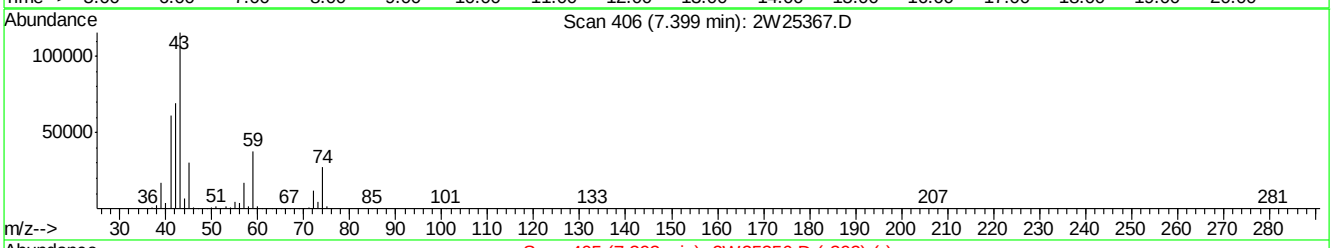


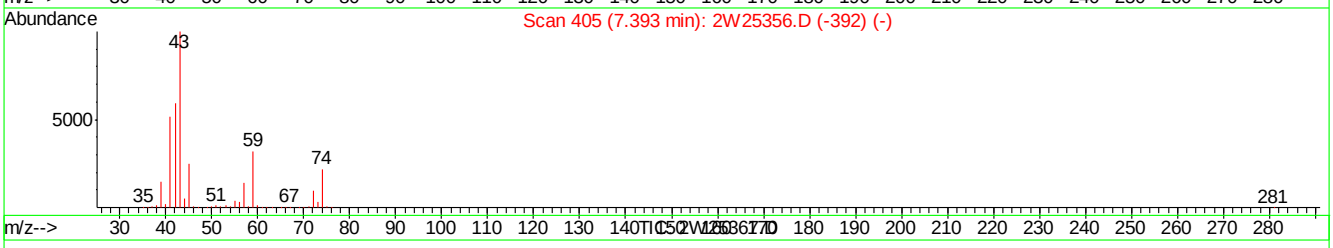
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 15:01 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 9.55PPBV m

response 1451094

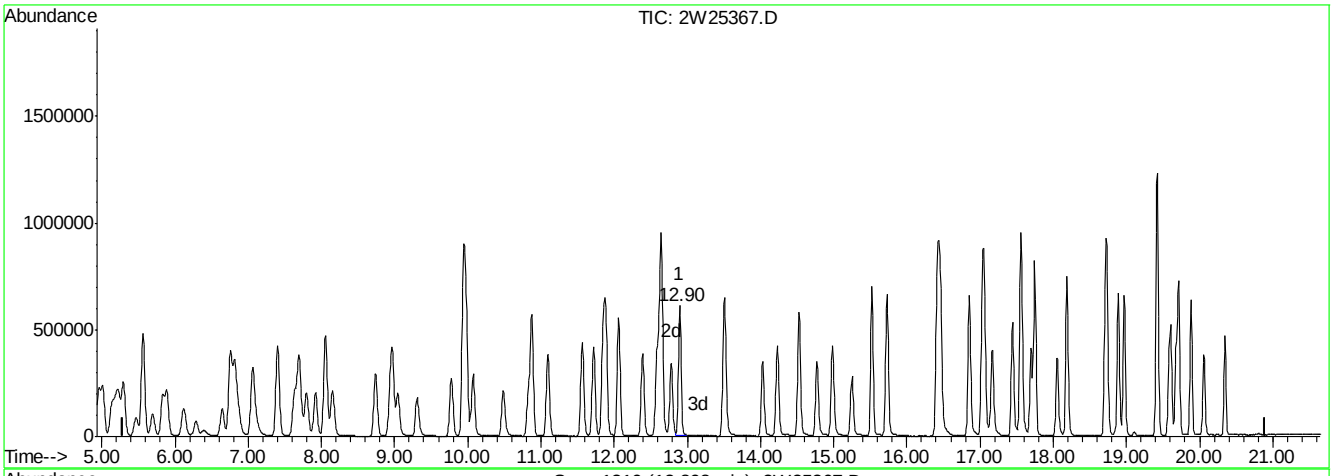
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

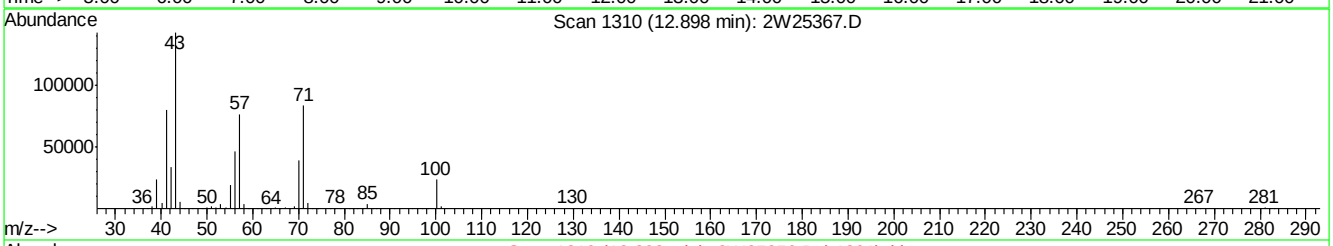
2W25367.D M2W1070.M Mon Sep 14 09:03:49 2009 MS2W

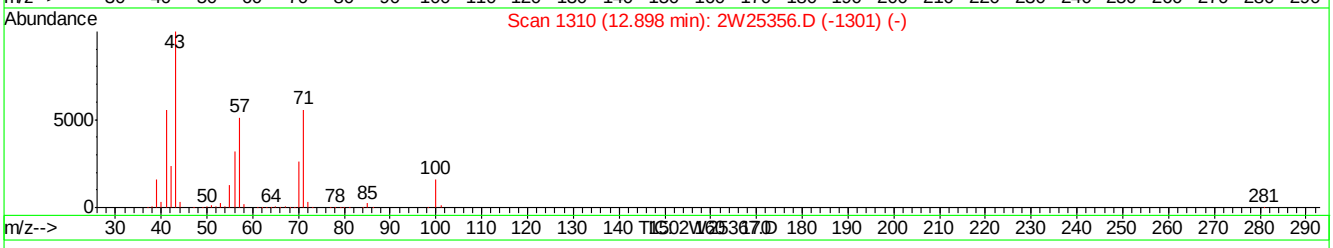
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 15:01 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 9.52PPBV m

response 1550652

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25367.D M2W1070.M Mon Sep 14 09:03:53 2009 MS2W

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.948	128	151545	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.883	114	751574	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.409	82	388121	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.409	82	388121	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.051	95	224639	5.68	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery	=	113.60%	
Target Compounds						Qvalue
2) FREON 115	5.020	119	146576	9.40	PPBV	97
3) DICHLORODIFLUOROMETHANE	5.020	85	220886	9.38	PPBV	99
4) FREON 152A	5.136	65	142913	8.84	PPBV	96
5) CHLORODIFLUOROMETHANE	5.184	67	55671	8.82	PPBV	99
6) PROPYLENE	5.227	41	225995	8.51	PPBV	99
7) PROPANE	5.245	43	80219	7.77	PPBV #	100
8) FREON 114	5.562	85	569723	9.18	PPBV	96
9) CHLOROMETHANE	5.470	52	77174	8.68	PPBV	94
10) VINYL CHLORIDE	5.696	62	263663	9.49	PPBV	99
11) 1,3-BUTADIENE	5.829	54	197411	9.28	PPBV	95
12) n-BUTANE	5.890	43	396828	8.67	PPBV	98
13) BROMOMETHANE	6.121	94	220061	9.89	PPBV	99
14) CHLOROETHANE	6.286	64	142199	9.68	PPBV	98
15) FREON 123	6.760	83	452379	9.43	PPBV #	99
16) FREON 123A	6.815	117	245411	9.36	PPBV	92
17) TRICHLOROFLUOROMETHANE	7.058	101	492453	9.35	PPBV	100
18) ISOPROPYL ALCOHOL	7.095	45	370261	9.55	PPBV	98
19) ACETONE	6.864	58	101172	9.17	PPBV	91
20) PENTANE	7.399	42	265124	8.60	PPBV	99
21) TVHC as EQUIV PENTANE	7.399	TIC	1643085m	9.29	PPBV	
22) ETHYL ETHER	7.399	74	102414	9.70	PPBV	96
23) IODOMETHANE	7.630	142	521611	10.07	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.697	96	193167	9.29	PPBV	93
25) CARBON DISULFIDE	8.153	76	664580	9.36	PPBV	98
26) ETHANOL	6.389	45	79406	8.77	PPBV	100
27) BROMOETHENE	6.645	106	208504	10.20	PPBV	99
28) METHYLENE CHLORIDE	7.794	84	179761	8.60	PPBV	94
29) 3-CHLOROPROPENE	7.916	76	98410	9.36	PPBV #	88
30) FREON 113	8.056	151	309540	9.44	PPBV	98
31) TRANS-1,2-DICHLOROETHY...	8.737	96	230694	9.38	PPBV	95
32) TERTIARY BUTYL ALCOHOL	7.691	59	431995	9.84	PPBV	99
33) METHYL TERTIARY BUTYL ...	8.975	73	559824	9.65	PPBV	98
34) TETRAHYDROFURAN	10.483	42	282505	9.49	PPBV	94
35) HEXANE	9.978	57	335776	9.11	PPBV	98
36) VINYL ACETATE	9.041	86	48351	9.98	PPBV #	78
37) 1,1-DICHLOROETHANE	8.938	63	414193	8.96	PPBV	99
38) METHYL ETHYL KETONE	9.303	72	112932	10.15	PPBV #	88
39) cis-1,2-DICHLOROETHYLENE	9.771	96	223555	9.28	PPBV	96
40) ETHYL ACETATE	9.948	61	65991	9.41	PPBV #	87

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41) CHLOROFORM	10.070	83	412361	9.38	PPBV		99
42) 2,4-DIMETHYLPENTANE	10.873	57	399968	9.25	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.092	97	417493	9.27	PPBV		99
44) CARBON TETRACHLORIDE	11.718	117	442077	9.45	PPBV		100
45) 1,2-DICHLOROETHANE	10.824	62	286653	9.08	PPBV		99
47) BENZENE	11.560	78	671794	8.66	PPBV		99
48) CYCLOHEXANE	11.846	84	301537	8.67	PPBV		96
49) 2,3-DIMETHYLPENTANE	12.059	71	150202	9.30	PPBV		96
50) TRICHLOROETHYLENE	12.625	95	249739	8.84	PPBV		98
51) 1,2-DICHLOROPROPANE	12.387	63	259866	9.00	PPBV		100
52) BROMODICHLOROMETHANE	12.582	83	427634	9.28	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.649	57	907777	8.52	PPBV		100
54) 1,4-DIOXANE	12.625	88	136811	9.68	PPBV	#	49
55) METHYL METHACRYLATE	12.777	69	224377	9.97	PPBV		93
56) HEPTANE	12.892	43	397181	8.46	PPBV		96
57) TVHC as EQUIV HEPTANE	12.892	TIC	1691411m	8.95	PPBV		
58) METHYL ISOBUTYL KETONE	13.513	43	497222	9.18	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.495	75	356855	9.50	PPBV		98
60) TOLUENE	14.523	92	443955	9.42	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.024	75	342095	9.65	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.225	83	211671	9.22	PPBV		98
64) 2-HEXANONE	14.766	58	255783	9.31	PPBV		95
65) TETRACHLOROETHYLENE	15.727	164	274374	8.99	PPBV		100
66) DIBROMOCHLOROMETHANE	14.979	129	411640	9.69	PPBV		100
67) 1,2-DIBROMOETHANE	15.247	107	347912	9.37	PPBV		99
68) OCTANE	15.520	43	488266	8.95	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.433	131	269778	9.46	PPBV	#	99
70) CHLOROBENZENE	16.457	112	469034	8.86	PPBV		99
71) ETHYLBENZENE	16.853	91	829566	9.32	PPBV		99
72) m,p-XYLENE	17.041	106	611897	19.03	PPBV		98
73) o-XYLENE	17.558	106	288917	9.62	PPBV		99
74) STYRENE	17.443	104	452200	10.54	PPBV		99
75) NONANE	17.747	43	428886	9.61	PPBV		97
76) BROMOFORM	17.163	173	346327	10.50	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.552	83	361931	10.00	PPBV		99
79) ISOPROPYLBENZENE	18.185	105	782066	9.94	PPBV		99
80) 2-CHLOROTOLUENE	18.708	126	180970	10.17	PPBV		95
81) n-PROPYLBENZENE	18.733	120	200228	10.61	PPBV		92
82) 4-ETHYLTOLUENE	18.885	105	653483	10.72	PPBV		98
83) 1,3,5-TRIMETHYLBENZENE	18.964	105	551919	10.80	PPBV		100
84) TERT-BUTYLBENZENE	19.414	134	136140	10.63	PPBV		97
85) 1,2,4-TRIMETHYLBENZENE	19.420	105	478055	11.16	PPBV		98
86) m-DICHLOROBENZENE	19.603	146	280304	10.98	PPBV		99
87) BENZYL CHLORIDE	19.578	91	307058	11.47	PPBV		99
88) p-DICHLOROBENZENE	19.676	146	247840	10.52	PPBV		99
89) SEC-BUTYLBENZENE	19.712	134	149921	11.07	PPBV		96
90) p-ISOPROPYLTOLUENE	19.882	134	147937	11.75	PPBV		99
91) o-DICHLOROBENZENE	20.059	146	237812	11.30	PPBV		100
92) n-BUTYLBENZENE	20.345	134	102739	12.17	PPBV		96
93) HEXACHLOROBUTADIENE	22.425	225	75210	10.14	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

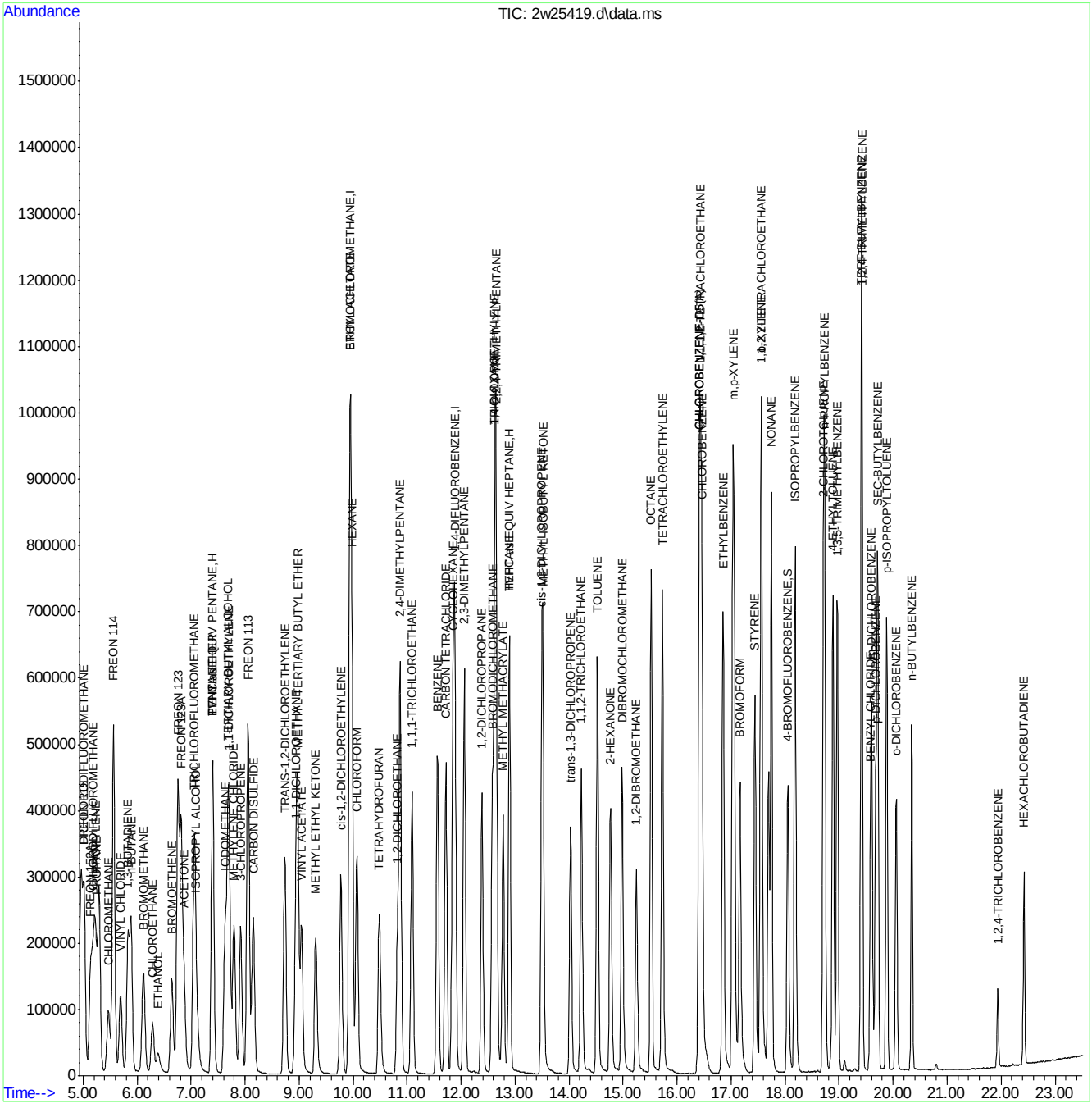
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.939	180	50287	10.52 PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

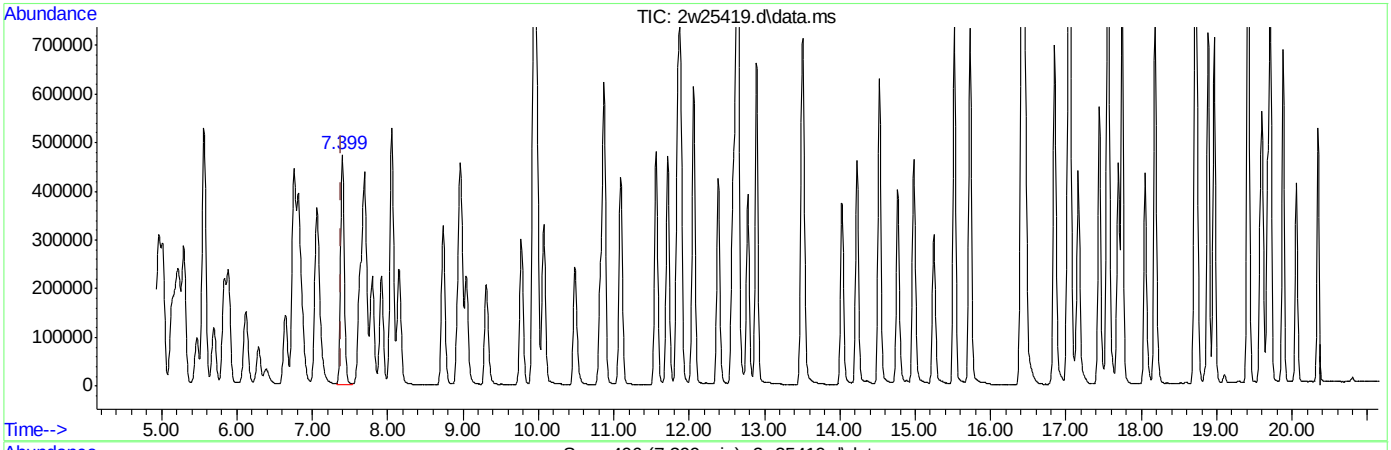


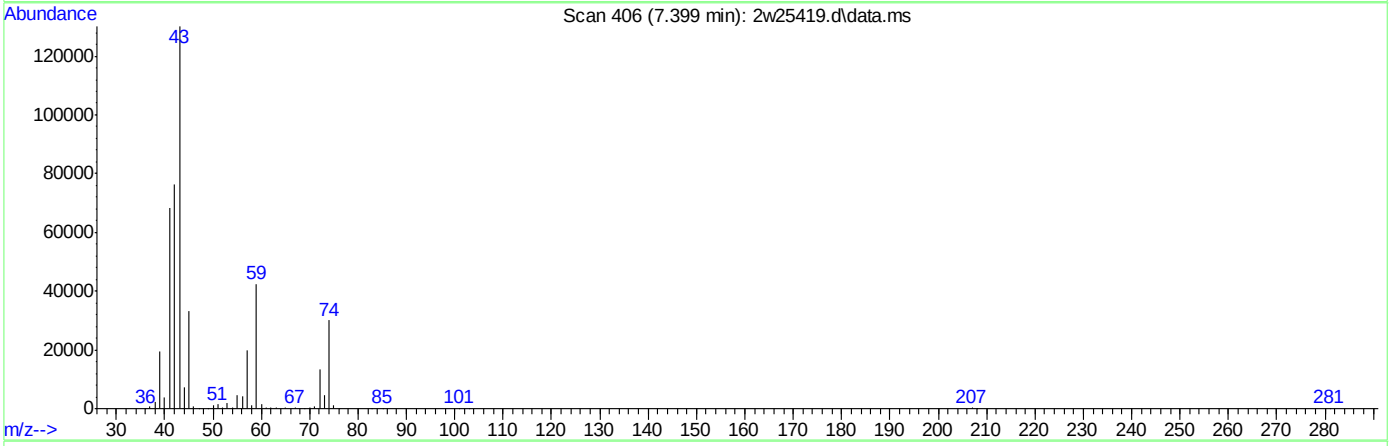
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:11:30 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25419.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.399min (+0.006) 9.29PPBV m

response 1643085

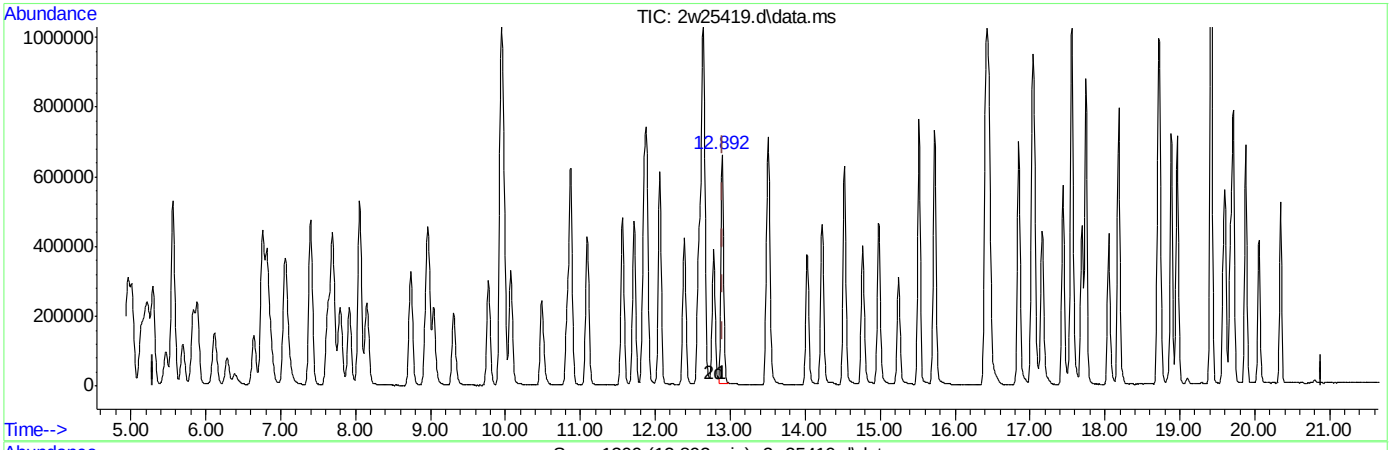
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

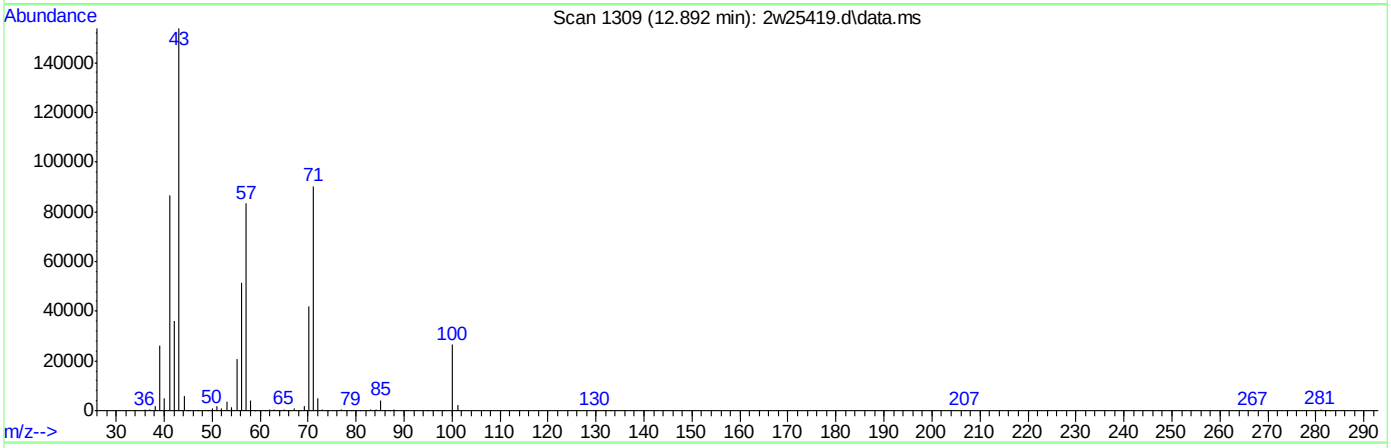
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:11:30 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25419.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.892min (-0.006) 8.95PPBV m

response 1691411

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:25:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	113525	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	535099	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	289967	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	289967	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	160477	5.43	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 108.60%

Target Compounds						Qvalue
2) FREON 115	5.01	119	98398	8.42	PPBV	98
3) DICHLORODIFLUOROMETHANE	5.02	85	155761	8.83	PPBV	99
4) FREON 152A	5.13	65	120128	9.92	PPBV	98
5) CHLORODIFLUOROMETHANE	5.18	67	46735	9.89	PPBV	98
6) PROPYLENE	5.22	41	193640	9.73	PPBV	99
7) PROPANE	5.24	43	69858	9.03	PPBV #	100
8) FREON 114	5.56	85	473647	10.18	PPBV	99
9) CHLOROMETHANE	5.46	52	67238	10.09	PPBV	95
10) VINYL CHLORIDE	5.70	62	214593	10.31	PPBV	99
11) 1,3-BUTADIENE	5.84	54	163990	10.29	PPBV	97
12) n-BUTANE	5.89	43	342100	9.98	PPBV	99
13) BROMOMETHANE	6.12	94	169674	10.18	PPBV	99
14) CHLOROETHANE	6.29	64	117617	10.69	PPBV	100
15) FREON 123	6.76	83	378238	10.52	PPBV #	100
16) FREON 123A	6.82	117	194335	9.90	PPBV	98
17) TRICHLOROFLUOROMETHANE	7.06	101	403057	10.22	PPBV	100
18) ISOPROPYL ALCOHOL	7.10	45	277392	9.55	PPBV	99
19) ACETONE	6.88	58	81406	9.85	PPBV	94
20) PENTANE	7.40	42	226813	9.82	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1366828m	10.32	PPBV	
22) ETHYL ETHER	7.40	74	80646	10.20	PPBV	100
23) IODOMETHANE	7.64	142	386696	9.97	PPBV	96
24) 1,1-DICHLOROETHYLENE	7.70	96	151726	9.74	PPBV	99
25) CARBON DISULFIDE	8.15	76	537219	10.10	PPBV	99
26) ETHANOL	6.40	45	64514	9.51	PPBV	99
27) BROMOETHENE	6.65	106	155534	10.15	PPBV	99
28) METHYLENE CHLORIDE	7.80	84	147881	9.45	PPBV	97
29) 3-CHLOROPROPENE	7.92	76	80305	10.19	PPBV	94
30) FREON 113	8.06	151	235551	9.59	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	184255	10.00	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.70	59	300313	9.13	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.98	73	425550	9.79	PPBV	100
34) TETRAHYDROFURAN	10.50	42	218613	9.80	PPBV	97
35) HEXANE	9.98	57	282314	10.22	PPBV	98
36) VINYL ACETATE	9.05	86	38230	10.53	PPBV #	90
37) 1,1-DICHLOROETHANE	8.94	63	360105	10.40	PPBV	100
38) METHYL ETHYL KETONE	9.32	72	81578	9.79	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	9.78	96	183702	10.18	PPBV	98
40) ETHYL ACETATE	9.95	61	49566	9.43	PPBV	97
41) CHLOROFORM	10.08	83	347711	10.55	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:25:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	336776	10.40	PPBV		99
43)	1,1,1-TRICHLOROETHANE	11.09	97	357955	10.61	PPBV		99
44)	CARBON TETRACHLORIDE	11.72	117	367087	10.48	PPBV		100
45)	1,2-DICHLOROETHANE	10.83	62	248221	10.49	PPBV		100
47)	BENZENE	11.57	78	572889	10.37	PPBV		100
48)	CYCLOHEXANE	11.85	84	243662	9.84	PPBV		99
49)	2,3-DIMETHYLPENTANE	12.06	71	124323	10.81	PPBV		99
50)	TRICHLOROETHYLENE	12.62	95	209265	10.41	PPBV		99
51)	1,2-DICHLOROPROPANE	12.39	63	224224	10.91	PPBV		99
52)	BROMODICHLOROMETHANE	12.58	83	368777	11.24	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	794408	10.47	PPBV		100
54)	1,4-DIOXANE	12.64	88	95658	9.51	PPBV	#	1
55)	METHYL METHACRYLATE	12.78	69	164405	10.26	PPBV		96
56)	HEPTANE	12.89	43	348688	10.43	PPBV		98
57)	TVHC as EQUIV HEPTANE	12.89	TIC	1461125m	10.86	PPBV		
58)	METHYL ISOBUTYL KETONE	13.52	43	370551	9.60	PPBV		99
59)	cis-1,3-DICHLOROPROPENE	13.49	75	300170	11.22	PPBV		98
60)	TOLUENE	14.52	92	370724	11.05	PPBV		100
61)	trans-1,3-DICHLOROPROPENE	14.03	75	277449	10.99	PPBV		98
62)	1,1,2-TRICHLOROETHANE	14.22	83	180718	11.06	PPBV		100
64)	2-HEXANONE	14.77	58	172162	8.39	PPBV		97
65)	TETRACHLOROETHYLENE	15.73	164	221867	9.73	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.98	129	344698	10.86	PPBV		100
67)	1,2-DIBROMOETHANE	15.25	107	284786	10.26	PPBV		100
68)	OCTANE	15.52	43	436001	10.70	PPBV		98
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	228802	10.74	PPBV	#	100
70)	CHLOROBENZENE	16.46	112	389098	9.84	PPBV		99
71)	ETHYLBENZENE	16.85	91	698829	10.51	PPBV		100
72)	m,p-XYLENE	17.04	106	509490	21.21	PPBV		98
73)	o-XYLENE	17.56	106	243500	10.85	PPBV		100
74)	STYRENE	17.44	104	368008	11.48	PPBV		100
75)	NONANE	17.75	43	385435	11.55	PPBV		99
76)	BROMOFORM	17.16	173	279560	11.34	PPBV		99
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	303504	11.23	PPBV		99
79)	ISOPROPYLBENZENE	18.18	105	669575	11.39	PPBV		99
80)	2-CHLOROTOLUENE	18.71	126	150844	11.34	PPBV		98
81)	n-PROPYLBENZENE	18.73	120	162535	11.53	PPBV		96
82)	4-ETHYLTOLUENE	18.88	105	535399	11.75	PPBV		100
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	451937	11.83	PPBV		98
84)	TERT-BUTYLBENZENE	19.41	134	109968	11.49	PPBV		97
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	387272	12.10	PPBV		99
86)	m-DICHLOROBENZENE	19.60	146	214042	11.22	PPBV		99
87)	BENZYL CHLORIDE	19.58	91	212758	10.64	PPBV		100
88)	p-DICHLOROBENZENE	19.68	146	188724	10.72	PPBV		100
89)	SEC-BUTYLBENZENE	19.71	134	117301	11.59	PPBV		96
90)	p-ISOPROPYLTOLUENE	19.88	134	108871	11.57	PPBV		97
91)	o-DICHLOROBENZENE	20.06	146	178693	11.36	PPBV		99
92)	n-BUTYLBENZENE	20.34	134	69879	11.08	PPBV		95
93)	HEXACHLOROBUTADIENE	22.43	225	50365	9.09	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:25:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

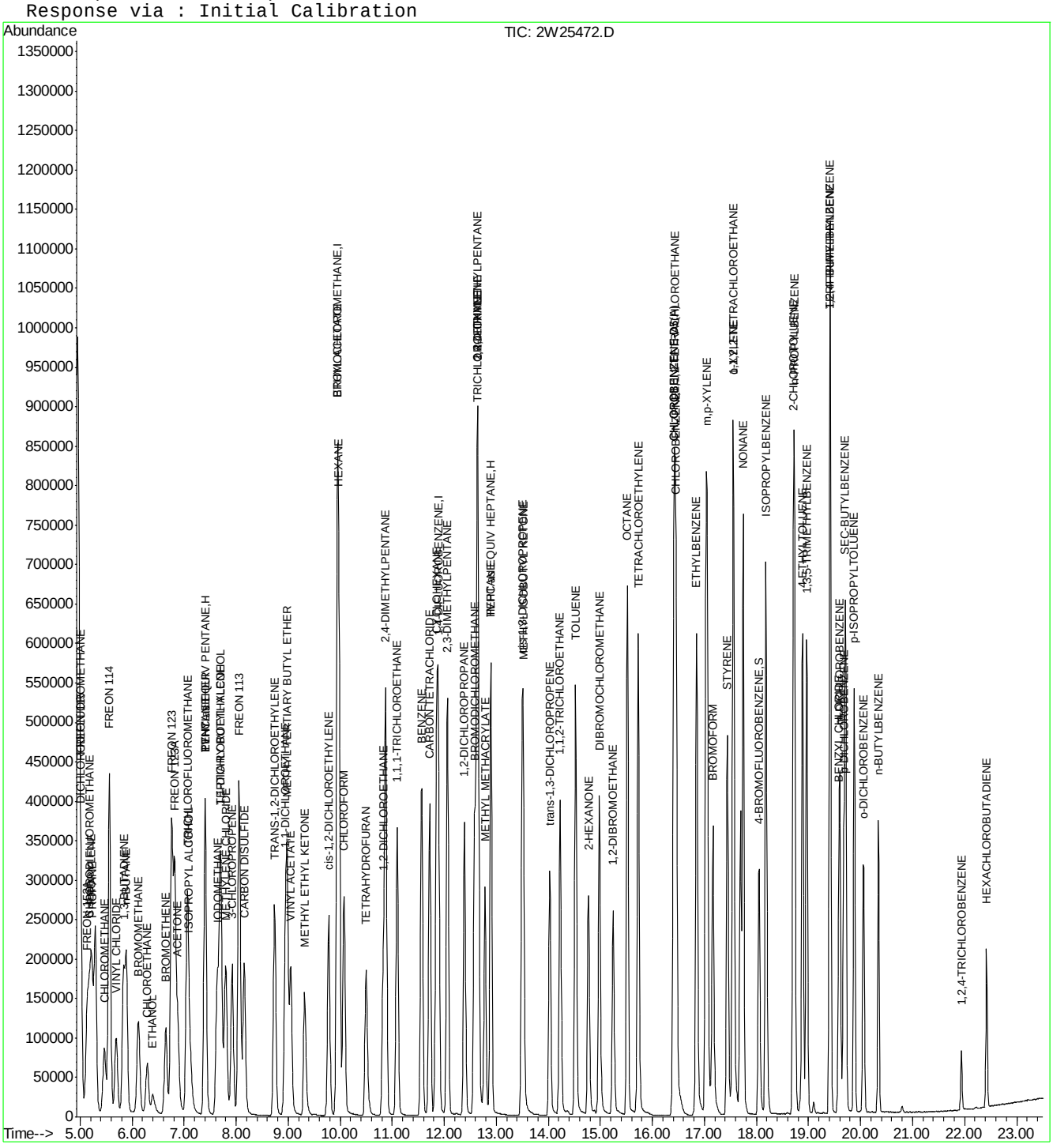
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	30540	8.55	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: M2W1070.RES

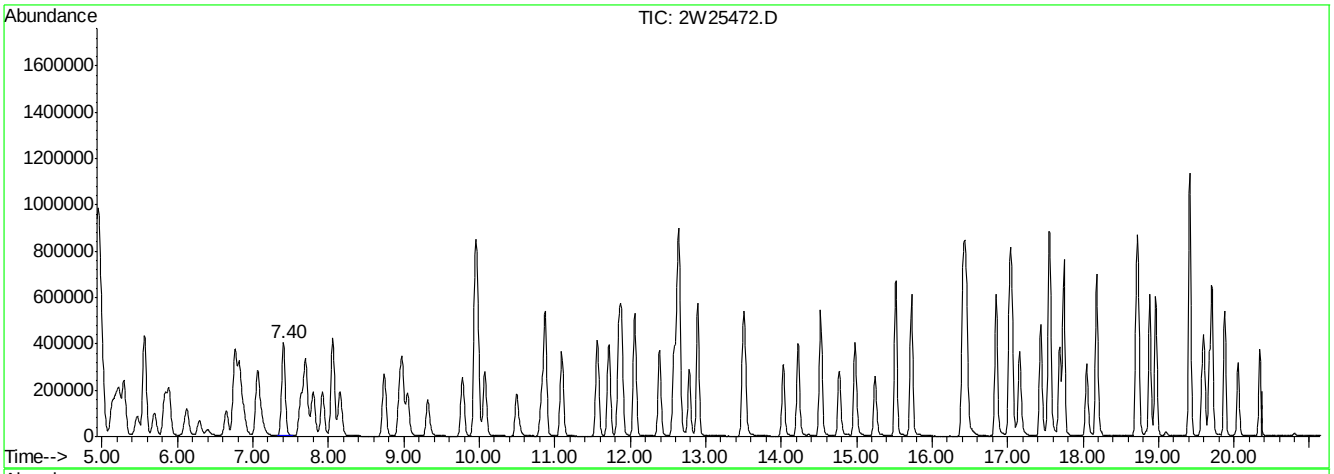
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

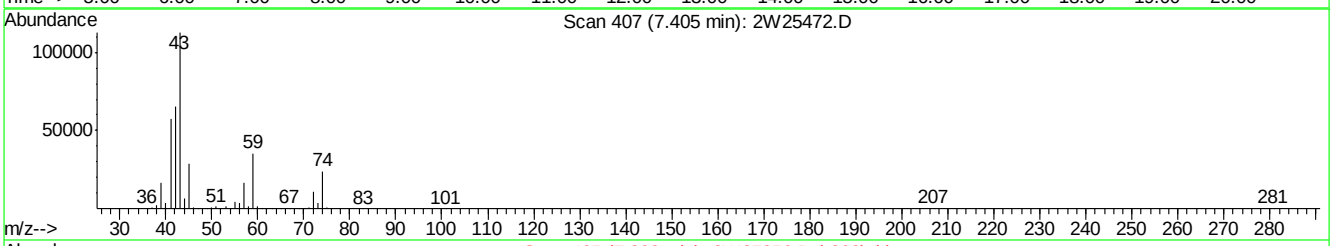


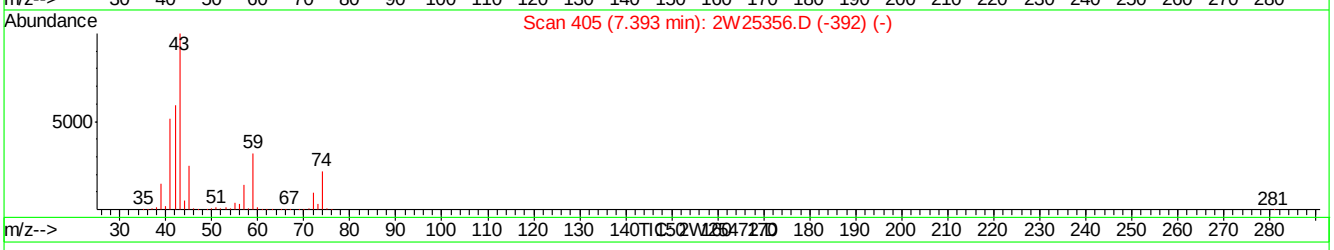
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 10.32PPBV m

response 1366828

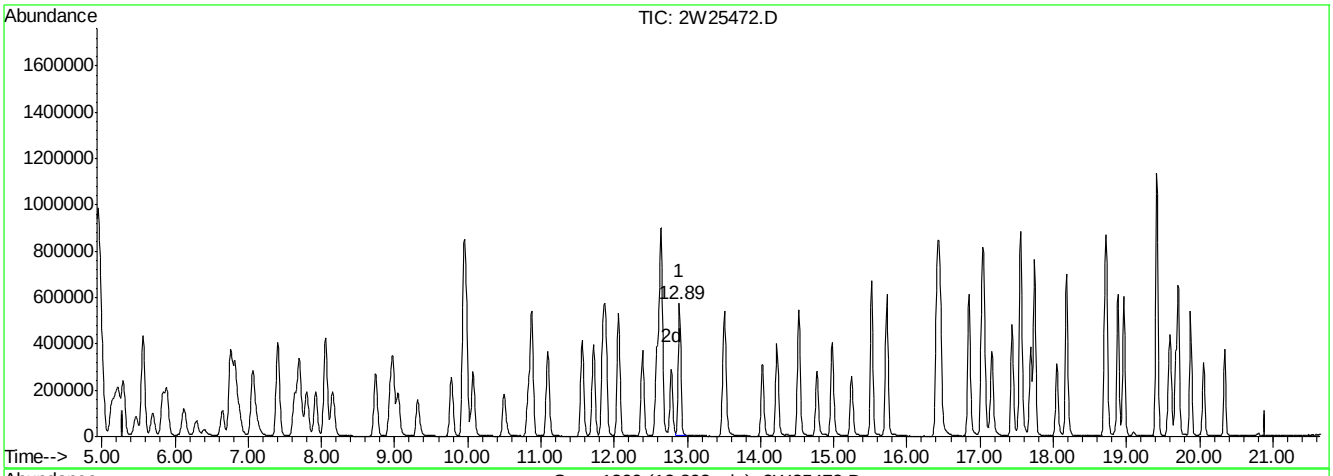
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

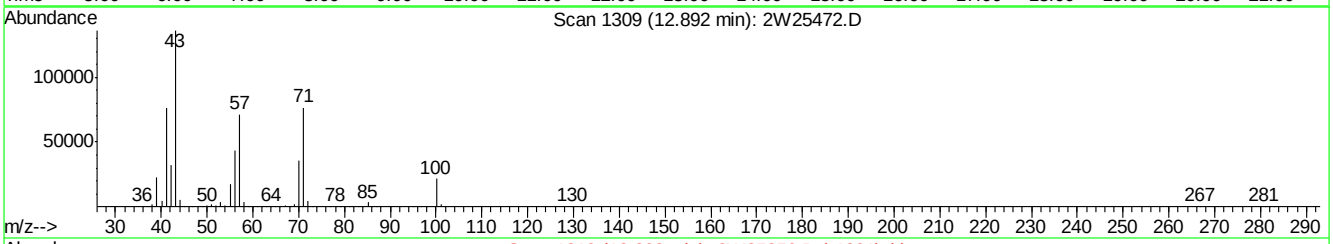
2W25472.D M2W1070.M Sun Sep 13 11:35:08 2009 MS2W

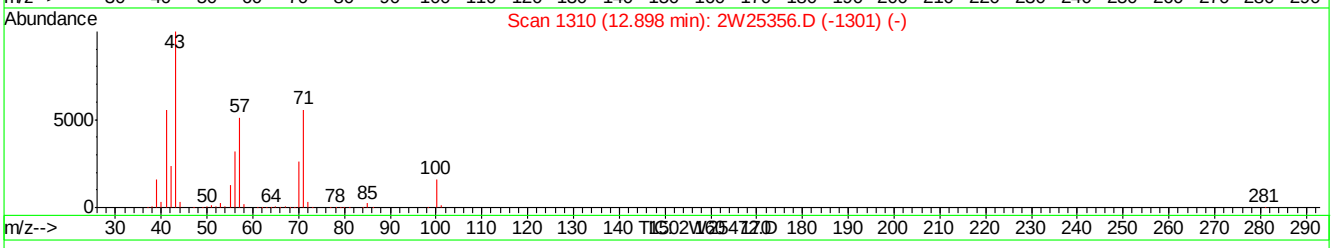
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 10.86PPBV m

response 1461125

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25472.D M2W1070.M Sun Sep 13 11:35:12 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25644.D Vial: 10
Acq On : 22 Sep 2009 4:45 pm Operator: YOUMINH
Sample : ICC1080-10 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:05 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	139514	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	653756	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	314842	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	314842	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	179485	5.52	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 110.40%

Target Compounds						Qvalue
2) FREON 115	5.00	119	118424	7.93	PPBV	100
3) DICHLORODIFLUOROMETHANE	5.00	85	167462	8.09	PPBV	100
4) FREON 152A	5.11	65	123163	9.87	PPBV	100
5) CHLORODIFLUOROMETHANE	5.16	67	45407	9.55	PPBV	100
6) PROPYLENE	5.20	41	165864	9.20	PPBV	100
7) PROPANE	5.23	43	59425	8.71	PPBV #	100
8) FREON 114	5.54	85	503491	9.41	PPBV	100
9) CHLOROMETHANE	5.45	52	62869	9.56	PPBV	100
10) VINYL CHLORIDE	5.67	62	211292	9.80	PPBV	100
11) 1,3-BUTADIENE	5.81	54	159220	9.82	PPBV	100
12) n-BUTANE	5.87	43	308015	9.71	PPBV	100
13) BROMOMETHANE	6.10	94	181511	9.58	PPBV	100
14) CHLOROETHANE	6.26	64	115064	9.79	PPBV	100
15) FREON 123	6.74	83	392280	9.28	PPBV #	100
16) FREON 123A	6.79	117	214284	9.21	PPBV	100
17) TRICHLOROFLUOROMETHANE	7.03	101	396741	9.19	PPBV	100
18) ISOPROPYL ALCOHOL	7.07	45	251105	9.21	PPBV	100
19) ACETONE	6.85	58	77586	8.01	PPBV	100
20) PENTANE	7.37	42	184461	9.69	PPBV	100
21) TVHC as EQUIV PENTANE	7.37	TIC	1168238m	10.25	PPBV	
22) ETHYL ETHER	7.37	74	81128	10.04	PPBV	100
23) IODOMETHANE	7.61	142	447605	9.68	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.67	96	159166	9.06	PPBV	100
25) CARBON DISULFIDE	8.12	76	510961	9.13	PPBV	100
26) ETHANOL	6.36	45	60374	8.12	PPBV	100
27) BROMOETHENE	6.62	106	172699	9.58	PPBV	100
28) METHYLENE CHLORIDE	7.78	84	147698	9.05	PPBV	100
29) 3-CHLOROPROPENE	7.90	76	80134	9.99	PPBV	100
30) FREON 113	8.03	151	275303	9.55	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.71	96	193266	9.23	PPBV	100
32) TERTIARY BUTYL ALCOHOL	7.67	59	303319	11.41	PPBV	100
33) METHYL TERTIARY BUTYL ETHE	8.96	73	432380	9.98	PPBV	100
34) TETRAHYDROFURAN	10.47	42	189471	10.66	PPBV	100
35) HEXANE	9.95	57	256722	10.14	PPBV	100
36) VINYL ACETATE	9.03	86	41290	10.58	PPBV	100
37) 1,1-DICHLOROETHANE	8.92	63	335216	10.02	PPBV	100
38) METHYL ETHYL KETONE	9.29	72	82157	10.13	PPBV	100
39) cis-1,2-DICHLOROETHYLENE	9.75	96	193875	9.37	PPBV	100
40) ETHYL ACETATE	9.93	61	48006	9.99	PPBV	100
41) CHLOROFORM	10.05	83	338937	9.95	PPBV	100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25644.D Vial: 10
Acq On : 22 Sep 2009 4:45 pm Operator: YOUMINH
Sample : ICC1080-10 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:05 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.85	57	312589	10.51	PPBV		100
43) 1,1,1-TRICHLOROETHANE	11.07	97	350224	9.90	PPBV		100
44) CARBON TETRACHLORIDE	11.69	117	366501	9.95	PPBV		100
45) 1,2-DICHLOROETHANE	10.81	62	223750	10.12	PPBV		100
47) BENZENE	11.54	78	572430	9.44	PPBV		100
48) CYCLOHEXANE	11.83	84	256917	9.45	PPBV		100
49) 2,3-DIMETHYLPENTANE	12.03	71	123846	10.23	PPBV		100
50) TRICHLOROETHYLENE	12.60	95	221502	9.34	PPBV		100
51) 1,2-DICHLOROPROPANE	12.36	63	213626	9.58	PPBV		100
52) BROMODICHLOROMETHANE	12.56	83	357853	10.06	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	728500	9.90	PPBV		100
54) 1,4-DIOXANE	12.61	88	103147	10.02	PPBV		100
55) METHYL METHACRYLATE	12.76	69	164242	10.45	PPBV		100
56) HEPTANE	12.87	43	292038	9.99	PPBV		100
57) TVHC as EQUIV HEPTANE	12.87	TIC	1293268m	9.98	PPBV		
58) METHYL ISOBUTYL KETONE	13.49	43	326565	10.16	PPBV		100
59) cis-1,3-DICHLOROPROPENE	13.48	75	290689	9.98	PPBV		100
60) TOLUENE	14.50	92	387399	9.79	PPBV		100
61) trans-1,3-DICHLOROPROPENE	14.01	75	264060	10.07	PPBV		100
62) 1,1,2-TRICHLOROETHANE	14.21	83	180464	10.12	PPBV		100
64) 2-HEXANONE	14.75	58	158261	9.88	PPBV		100
65) TETRACHLOROETHYLENE	15.71	164	255938	9.13	PPBV		100
66) DIBROMOCHLOROMETHANE	14.96	129	355164	10.16	PPBV		100
67) 1,2-DIBROMOETHANE	15.23	107	293619	9.99	PPBV		100
68) OCTANE	15.50	43	360489	10.44	PPBV		100
69) 1,1,1,2-TETRACHLOROETHANE	16.41	131	246981	10.02	PPBV	#	100
70) CHLOROBENZENE	16.44	112	417326	9.52	PPBV		100
71) ETHYLBENZENE	16.83	91	701997	9.45	PPBV		100
72) m,p-XYLENE	17.02	106	533821	18.70	PPBV		100
73) o-XYLENE	17.54	106	254908	9.57	PPBV		100
74) STYRENE	17.42	104	375078	10.50	PPBV		100
75) NONANE	17.73	43	322441	11.02	PPBV		100
76) BROMOFORM	17.14	173	288728	10.66	PPBV		100
78) 1,1,2,2-TETRACHLOROETHANE	17.53	83	282892	9.67	PPBV		100
79) ISOPROPYLBENZENE	18.17	105	674450	9.91	PPBV		100
80) 2-CHLOROTOLUENE	18.70	126	155540	10.36	PPBV		100
81) n-PROPYLBENZENE	18.71	120	169305	10.87	PPBV		100
82) 4-ETHYLTOLUENE	18.87	105	532254	11.15	PPBV		100
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	437853	10.77	PPBV		100
84) TERT-BUTYLBENZENE	19.40	134	116311	10.37	PPBV		100
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	372712	11.04	PPBV		100
86) m-DICHLOROBENZENE	19.59	146	214193	10.11	PPBV		100
87) BENZYL CHLORIDE	19.57	91	180889	10.03	PPBV		100
88) p-DICHLOROBENZENE	19.66	146	190187	10.45	PPBV		100
89) SEC-BUTYLBENZENE	19.70	134	121561	10.74	PPBV		100
90) p-ISOPROPYLTOLUENE	19.86	134	110725	11.00	PPBV		100
91) o-DICHLOROBENZENE	20.05	146	171359	10.14	PPBV		100
92) n-BUTYLBENZENE	20.33	134	66222	10.71	PPBV		100
93) HEXACHLOROBUTADIENE	22.41	225	32362	7.25	PPBV		100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25644.D Vial: 10
Acq On : 22 Sep 2009 4:45 pm Operator: YOUMINH
Sample : ICC1080-10 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:05 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	21031	6.92	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

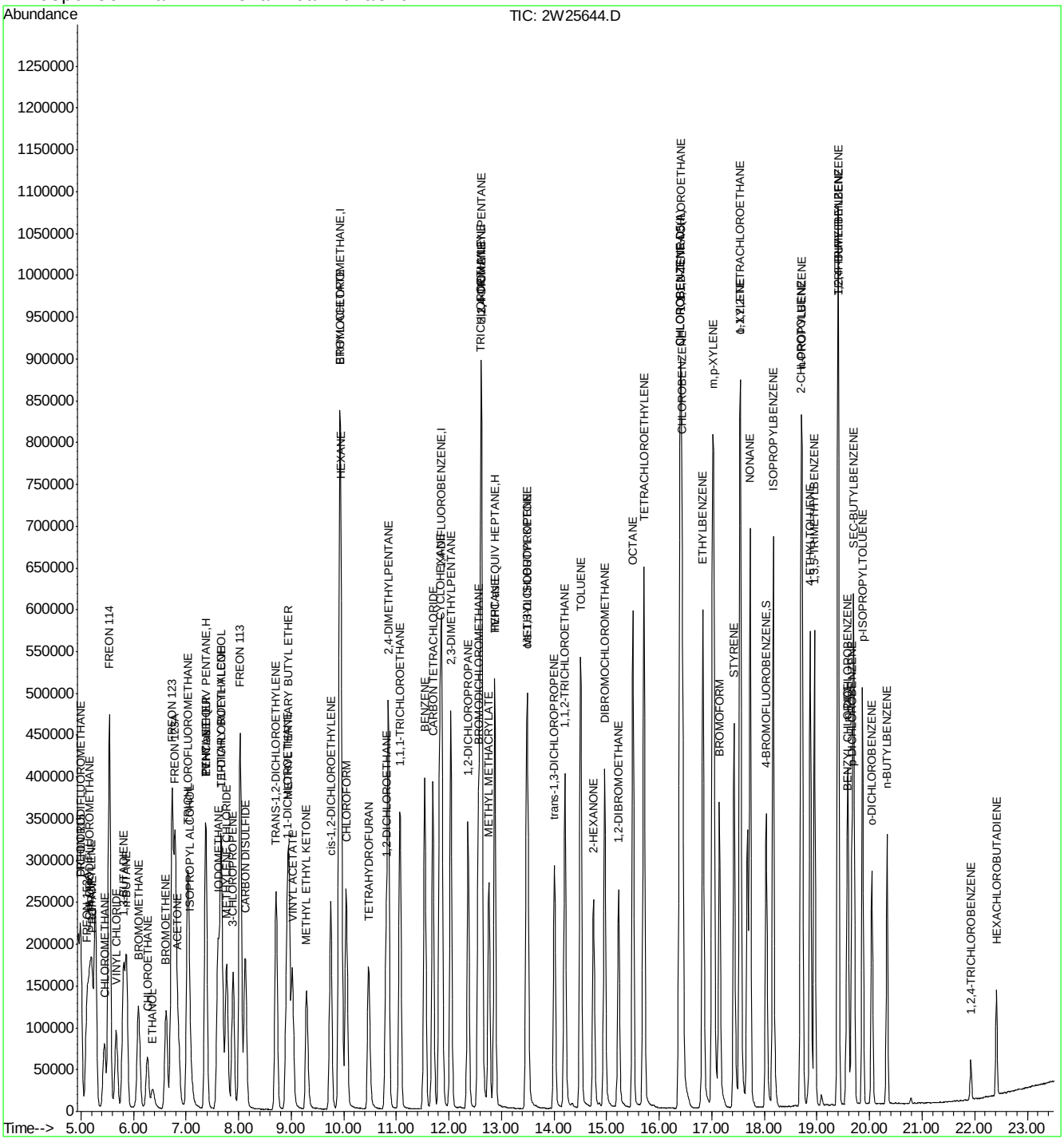
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25644.D
Acq On : 22 Sep 2009 4:45 pm
Sample : ICC1080-10
Misc : MS49009,V2W1080,,,,,1
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:48 2009

Vial: 10
Operator: YOUMINH
Inst : MS2W
Multiplr: 1.00

Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

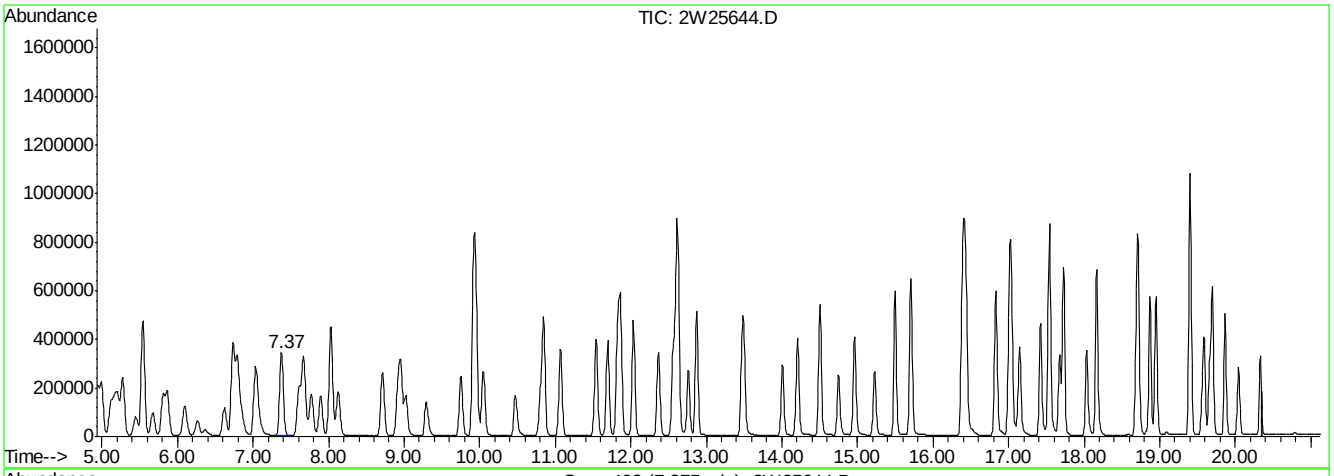


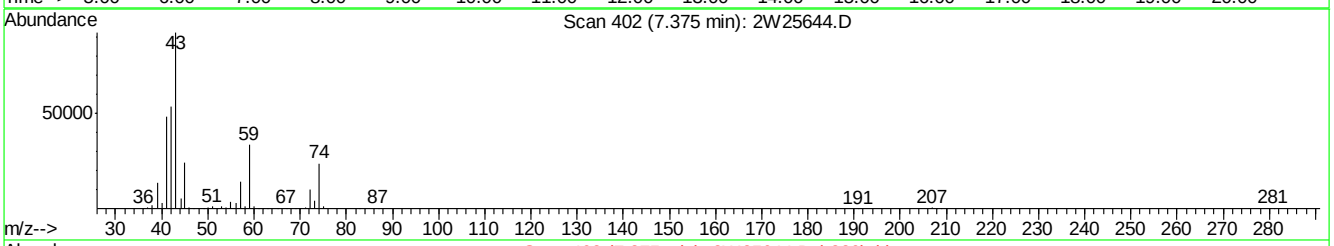
ACCUTEST Laboratories JA28238

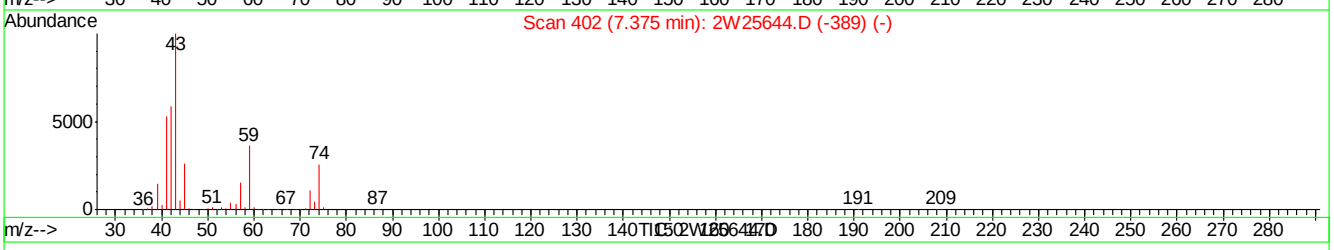
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25644.D Vial: 10
Acq On : 22 Sep 2009 4:45 pm Operator: YOUMINH
Sample : ICC1080-10 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:48 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.37min 10.25PPBV m

response 1168238

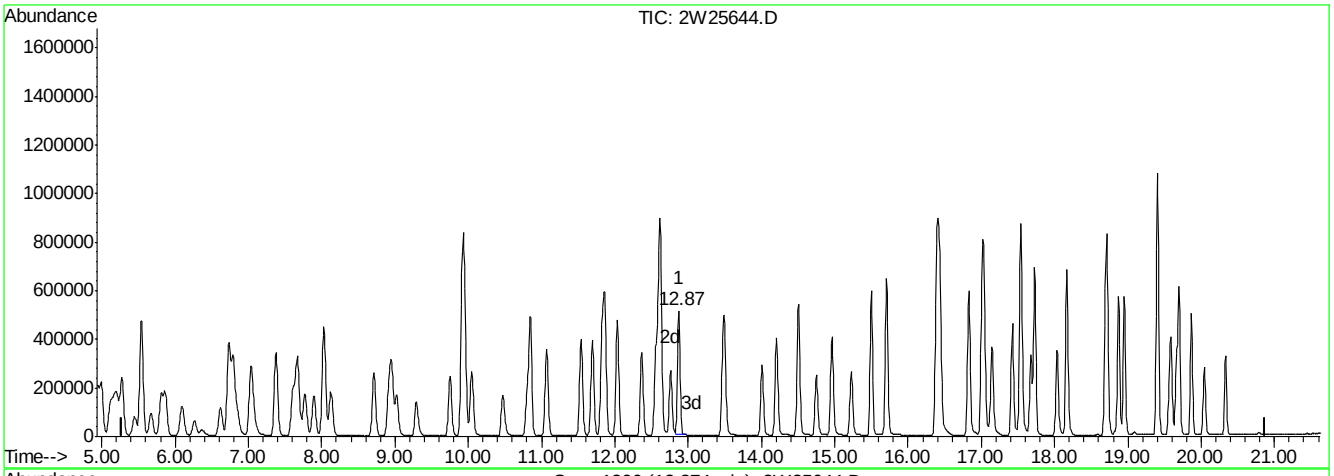
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

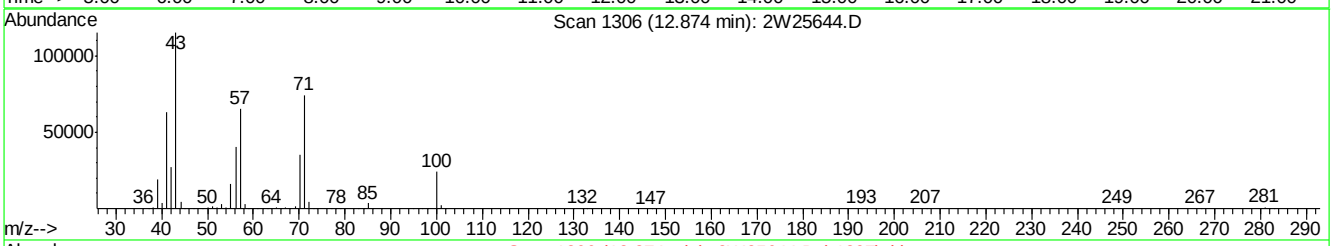
2W25644.D M2W1080.M Fri Sep 25 12:37:32 2009 MS2W

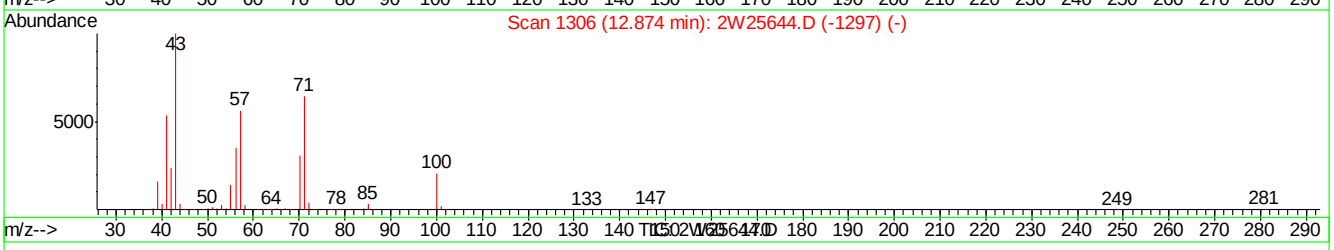
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25644.D Vial: 10
Acq On : 22 Sep 2009 4:45 pm Operator: YOUMINH
Sample : ICC1080-10 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:48 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.87min 9.98PPBV m

response 1293268

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25644.D M2W1080.M Fri Sep 25 12:37:35 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25645.D Vial: 9
Acq On : 22 Sep 2009 7:01 pm Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:07 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	128151	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	585074	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	249594	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	249265	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	116673	4.53	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 90.60%

Target Compounds						Qvalue
2) FREON 115	5.00	119	6798	0.50	PPBV	97
3) DICHLORODIFLUOROMETHANE	5.00	85	9370	0.49	PPBV	99
4) FREON 152A	5.12	65	5293	0.46	PPBV	87
5) CHLORODIFLUOROMETHANE	5.15	67	2090	0.48	PPBV #	43
6) PROPYLENE	5.20	41	8668	0.52	PPBV	95
7) PROPANE	5.23	43	3492	0.56	PPBV #	100
8) FREON 114	5.54	85	23719	0.48	PPBV	98
9) CHLOROMETHANE	5.45	52	2951	0.49	PPBV #	89
10) VINYL CHLORIDE	5.68	62	9222	0.47	PPBV #	93
11) 1,3-BUTADIENE	5.81	54	7103	0.48	PPBV	93
12) n-BUTANE	5.87	43	15510	0.53	PPBV #	96
13) BROMOMETHANE	6.10	94	8066	0.46	PPBV	98
14) CHLOROETHANE	6.27	64	5028	0.47	PPBV	98
15) FREON 123	6.74	83	17885	0.46	PPBV #	99
16) FREON 123A	6.80	117	9851	0.46	PPBV	93
17) TRICHLOROFLUOROMETHANE	7.03	101	18054	0.46	PPBV	100
18) ISOPROPYL ALCOHOL	7.14	45	12281	0.49	PPBV	92
19) ACETONE	6.90	58	5101	0.57	PPBV	99
20) PENTANE	7.37	42	9031	0.52	PPBV	97
21) TVHC as EQUIV PENTANE	7.37	TIC	51855m	0.50	PPBV	
22) ETHYL ETHER	7.42	74	3232	0.44	PPBV	94
23) IODOMETHANE	7.61	142	19164	0.45	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.67	96	7149	0.44	PPBV	99
25) CARBON DISULFIDE	8.13	76	24266	0.47	PPBV	99
26) ETHANOL	6.44	45	3430	0.50	PPBV #	84
27) BROMOETHENE	6.62	106	7280	0.44	PPBV	98
28) METHYLENE CHLORIDE	7.77	84	7631	0.51	PPBV	97
29) 3-CHLOROPROPENE	7.91	76	3266	0.44	PPBV #	93
30) FREON 113	8.03	151	12293	0.46	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.71	96	8267	0.43	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.76	59	11130	0.46	PPBV	83
33) METHYL TERTIARY BUTYL ETHE	9.00	73	17967	0.45	PPBV	95
34) TETRAHYDROFURAN	10.53	42	7141	0.44	PPBV	96
35) HEXANE	9.95	57	10603	0.46	PPBV	97
36) VINYL ACETATE	9.05	86	1527	0.43	PPBV #	35
37) 1,1-DICHLOROETHANE	8.92	63	14784	0.48	PPBV	96
38) METHYL ETHYL KETONE	9.35	72	3000	0.40	PPBV	94
39) cis-1,2-DICHLOROETHYLENE	9.75	96	8092	0.43	PPBV	97
40) ETHYL ACETATE	9.97	61	1912	0.43	PPBV #	73
41) CHLOROFORM	10.05	83	14510	0.46	PPBV	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25645.D Vial: 9
Acq On : 22 Sep 2009 7:01 pm Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:07 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.85	57	12367	0.45	PPBV		96
43)	1,1,1-TRICHLOROETHANE	11.07	97	15115	0.46	PPBV		99
44)	CARBON TETRACHLORIDE	11.69	117	16047	0.47	PPBV		99
45)	1,2-DICHLOROETHANE	10.81	62	9027	0.44	PPBV	#	92
47)	BENZENE	11.54	78	25125	0.46	PPBV		98
48)	CYCLOHEXANE	11.82	84	11179	0.46	PPBV	#	32
49)	2,3-DIMETHYLPENTANE	12.03	71	4473	0.41	PPBV	#	83
50)	TRICHLOROETHYLENE	12.60	95	9740	0.46	PPBV		98
51)	1,2-DICHLOROPROPANE	12.36	63	9305	0.47	PPBV		95
52)	BROMODICHLOROMETHANE	12.56	83	14624	0.46	PPBV		98
53)	2,2,4-TRIMETHYLPENTANE	12.62	57	32091	0.49	PPBV		99
54)	1,4-DIOXANE	12.68	88	3735	0.41	PPBV	#	1
55)	METHYL METHACRYLATE	12.78	69	5445	0.39	PPBV		96
56)	HEPTANE	12.87	43	12166	0.46	PPBV		95
57)	TVHC as EQUIV HEPTANE	12.87	TIC	51988m	0.45	PPBV		
58)	METHYL ISOBUTYL KETONE	13.52	43	11661	0.41	PPBV		97
59)	cis-1,3-DICHLOROPROPENE	13.47	75	11321	0.43	PPBV		97
60)	TOLUENE	14.50	92	15461	0.44	PPBV		96
61)	trans-1,3-DICHLOROPROPENE	14.01	75	9259	0.39	PPBV		97
62)	1,1,2-TRICHLOROETHANE	14.21	83	7355	0.46	PPBV		97
64)	2-HEXANONE	14.77	58	3818	0.30	PPBV	#	88
65)	TETRACHLOROETHYLENE	15.70	164	10745	0.48	PPBV		98
66)	DIBROMOCHLOROMETHANE	14.96	129	12783	0.46	PPBV		99
67)	1,2-DIBROMOETHANE	15.22	107	10570	0.45	PPBV	#	99
68)	OCTANE	15.50	43	12685	0.46	PPBV		97
69)	1,1,1,2-TETRACHLOROETHANE	16.41	131	9395	0.48	PPBV	#	98
70)	CHLOROBENZENE	16.44	112	16556	0.48	PPBV		99
71)	ETHYLBENZENE	16.83	91	26747	0.45	PPBV		97
72)	m,p-XYLENE	17.02	106	20362	0.90	PPBV		99
73)	o-XYLENE	17.54	106	9818	0.46	PPBV		95
74)	STYRENE	17.42	104	10250	0.36	PPBV		99
75)	NONANE	17.72	43	10314	0.44	PPBV	#	92
76)	BROMOFORM	17.14	173	8910	0.41	PPBV		98
78)	1,1,2,2-TETRACHLOROETHANE	17.53	83	9912	0.43	PPBV	#	96
79)	ISOPROPYLBENZENE	18.17	105	24177	0.45	PPBV		98
80)	2-CHLOROTOLUENE	18.70	126	5093	0.43	PPBV	#	91
81)	n-PROPYLBENZENE	18.71	120	4902	0.40	PPBV		63
82)	4-ETHYLTOLUENE	18.87	105	14891	0.39	PPBV	#	99
83)	1,3,5-TRIMETHYLBENZENE	18.95	105	13590	0.42	PPBV		97
84)	TERT-BUTYLBENZENE	19.40	134	3677	0.41	PPBV		95
85)	1,2,4-TRIMETHYLBENZENE	19.40	105	10423	0.39	PPBV	#	87
86)	m-DICHLOROBENZENE	19.58	146	5751	0.34	PPBV		98
87)	BENZYL CHLORIDE	19.57	91	4746	0.33	PPBV	#	59
88)	p-DICHLOROBENZENE	19.66	146	4810	0.33	PPBV		96
89)	SEC-BUTYLBENZENE	19.70	134	3295	0.37	PPBV		82
90)	p-ISOPROPYLTOLUENE	19.86	134	2535	0.32	PPBV		93
91)	o-DICHLOROBENZENE	20.05	146	4683	0.35	PPBV		97
92)	n-BUTYLBENZENE	20.33	134	1426	0.29	PPBV		94
93)	HEXACHLOROBUTADIENE	22.42	225	2354	0.66	PPBV		92

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25645.D Vial: 9
Acq On : 22 Sep 2009 7:01 pm Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:07 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

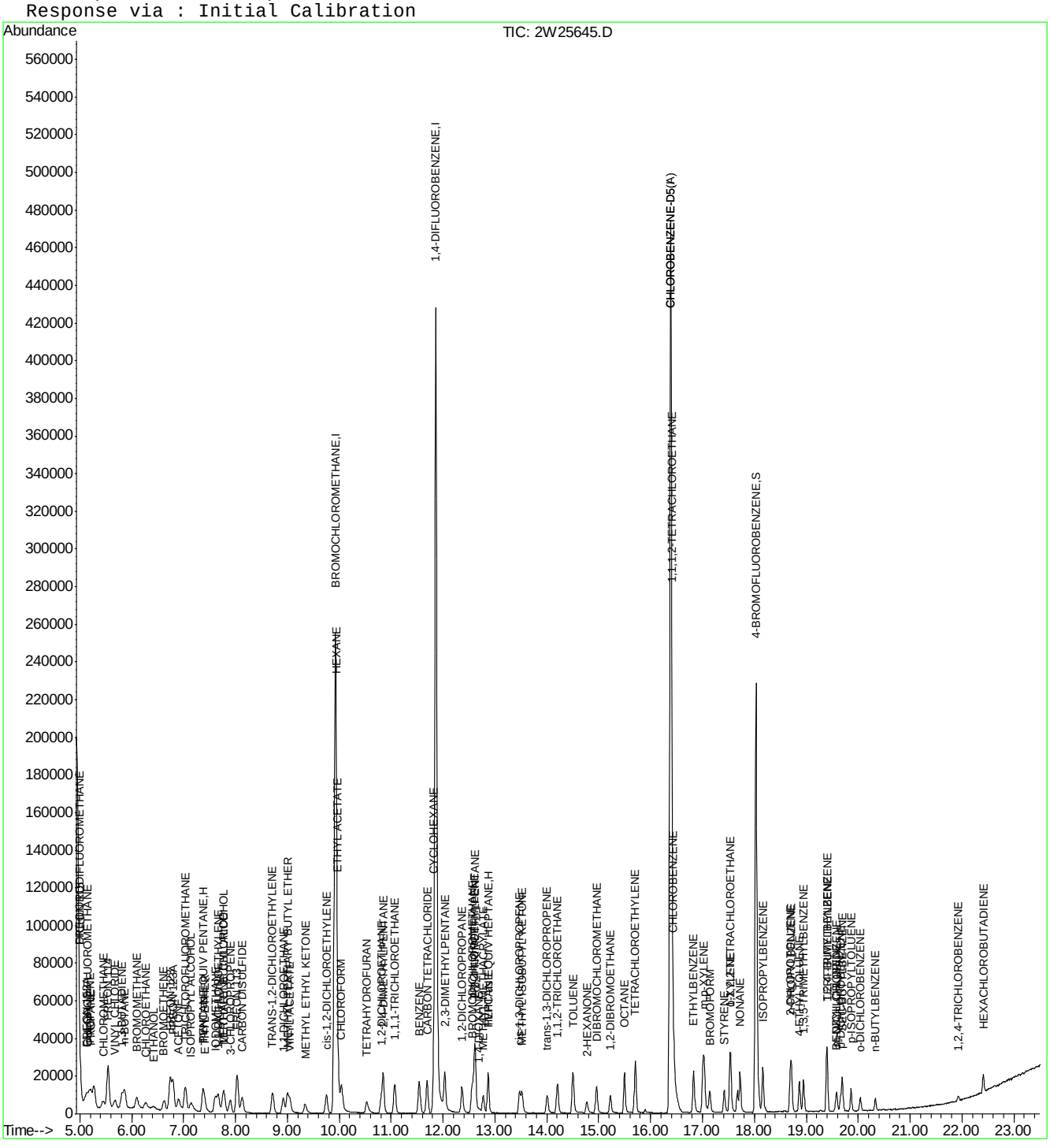
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	1213	0.50	PPBV #	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25645.D Vial: 9
Acq On : 22 Sep 2009 7:01 pm Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:48 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

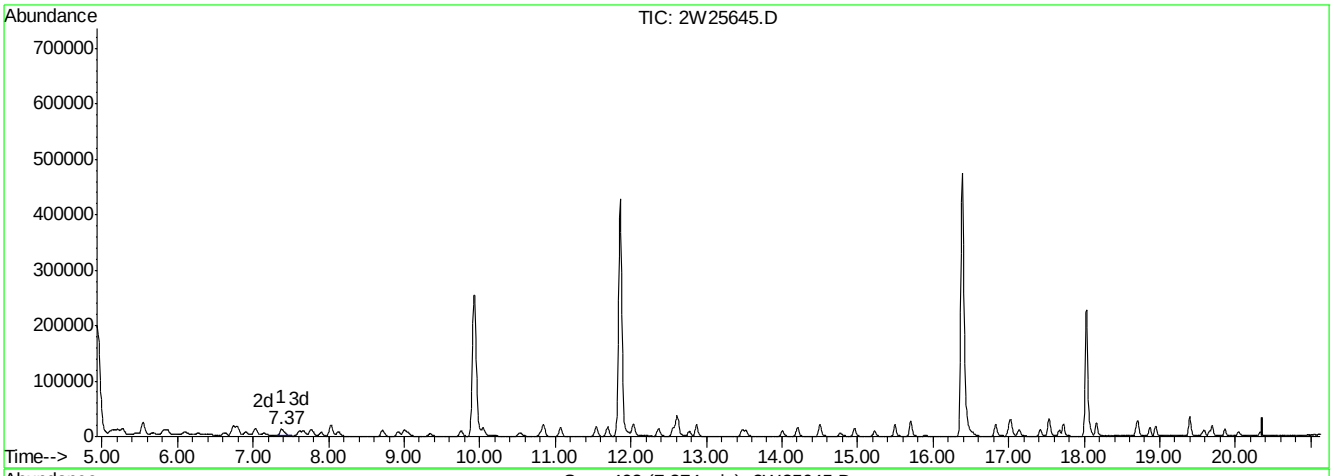


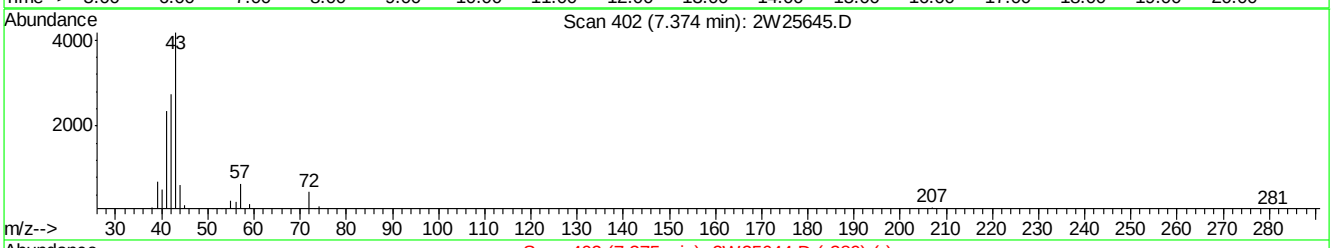
ACCUTEST Laboratories JA28238

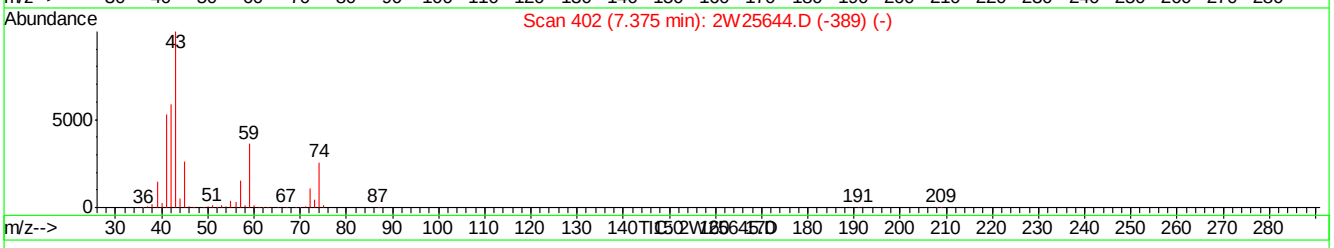
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25645.D Vial: 9
Acq On : 22 Sep 2009 7:01 pm Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:48 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.37min 0.50PPBV m

response 51855

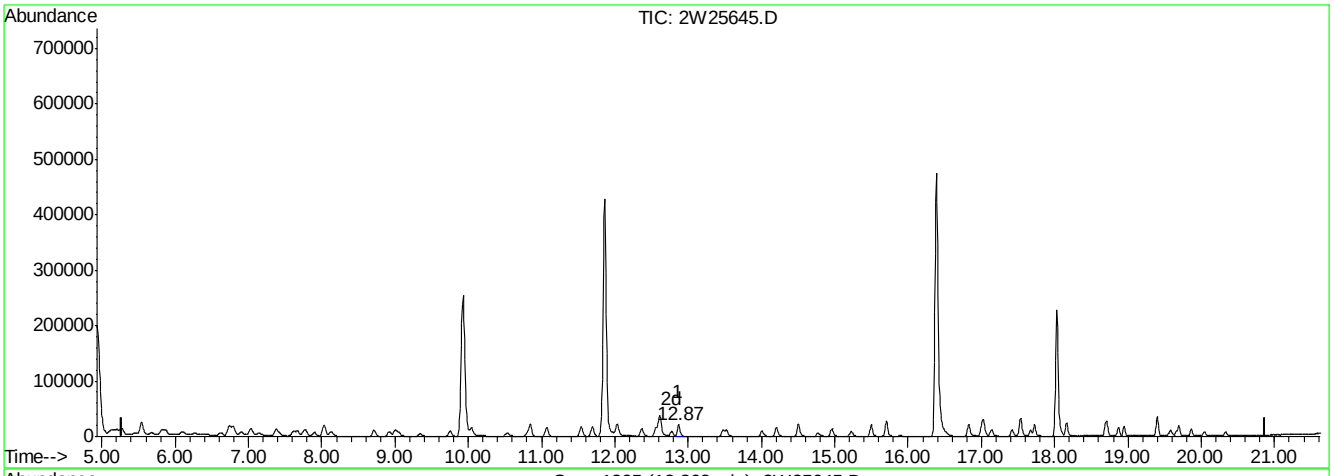
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

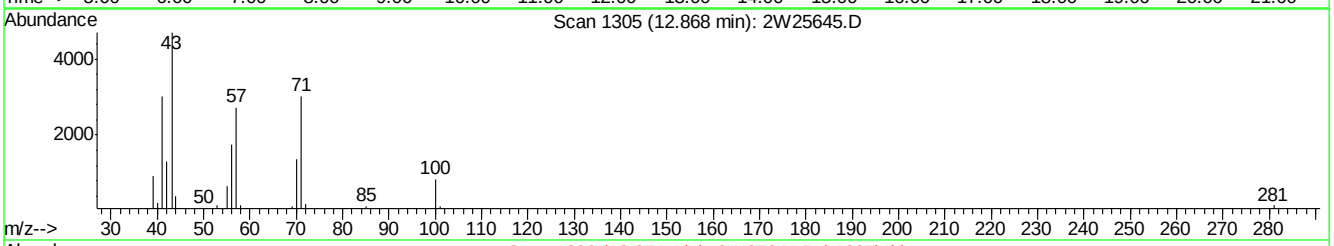
2W25645.D M2W1080.M Fri Sep 25 12:37:40 2009 MS2W

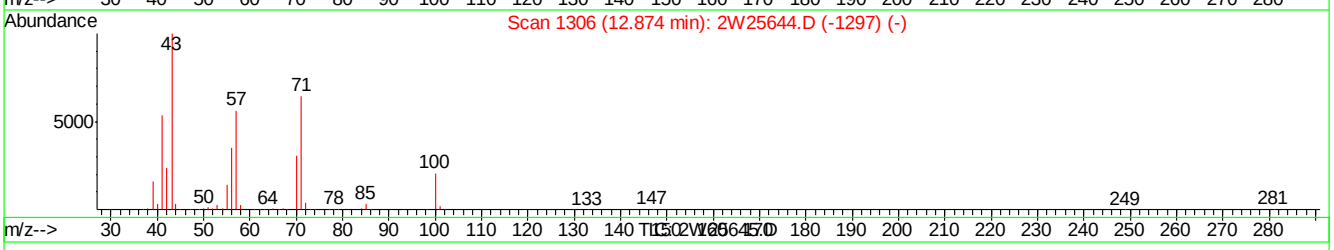
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25645.D Vial: 9
Acq On : 22 Sep 2009 7:01 pm Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:48 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.87min 0.45PPBV m

response 51988

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25645.D M2W1080.M Fri Sep 25 12:37:43 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25646.D Vial: 10
Acq On : 22 Sep 2009 8:29 pm Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:10 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	117717	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	542948	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	256093	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	256093	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	138104	5.22	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 104.40%

Target Compounds						Qvalue
2) FREON 115	5.00	119	94090	7.46	PPBV	99
3) DICHLORODIFLUOROMETHANE	5.00	85	133823	7.66	PPBV	99
4) FREON 152A	5.12	65	54136	5.14	PPBV	98
5) CHLORODIFLUOROMETHANE	5.17	67	20757	5.18	PPBV	96
6) PROPYLENE	5.21	41	78599	5.16	PPBV	95
7) PROPANE	5.23	43	28563	4.96	PPBV #	100
8) FREON 114	5.54	85	239775	5.31	PPBV	98
9) CHLOROMETHANE	5.46	52	29125	5.25	PPBV	99
10) VINYL CHLORIDE	5.68	62	96772	5.32	PPBV	100
11) 1,3-BUTADIENE	5.82	54	73717	5.39	PPBV	98
12) n-BUTANE	5.87	43	149616	5.59	PPBV #	99
13) BROMOMETHANE	6.10	94	83404	5.22	PPBV	99
14) CHLOROETHANE	6.27	64	51718	5.22	PPBV	98
15) FREON 123	6.74	83	189630	5.32	PPBV #	99
16) FREON 123A	6.80	117	102114	5.20	PPBV	98
17) TRICHLOROFLUOROMETHANE	7.04	101	187283	5.14	PPBV	99
18) ISOPROPYL ALCOHOL	7.09	45	125656	5.46	PPBV	99
19) ACETONE	6.86	58	36486	4.46	PPBV	99
20) PENTANE	7.38	42	85664	5.34	PPBV	100
21) TVHC as EQUIV PENTANE	7.38	TIC	536740m	5.58	PPBV	
22) ETHYL ETHER	7.39	74	35936	5.27	PPBV	100
23) IODOMETHANE	7.61	142	205602	5.27	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.67	96	74535	5.03	PPBV	98
25) CARBON DISULFIDE	8.13	76	239186	5.06	PPBV	100
26) ETHANOL	6.38	45	28673	4.57	PPBV #	93
27) BROMOETHENE	6.63	106	79585	5.23	PPBV	100
28) METHYLENE CHLORIDE	7.78	84	67172	4.88	PPBV	99
29) 3-CHLOROPROPENE	7.90	76	35101	5.19	PPBV	98
30) FREON 113	8.03	151	127706	5.25	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	8.71	96	87985	4.98	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.68	59	141372	6.30	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.96	73	197862	5.42	PPBV	99
34) TETRAHYDROFURAN	10.48	42	78901	5.26	PPBV	98
35) HEXANE	9.95	57	117890	5.52	PPBV	100
36) VINYL ACETATE	9.03	86	17382	5.28	PPBV #	56
37) 1,1-DICHLOROETHANE	8.92	63	151969	5.38	PPBV	100
38) METHYL ETHYL KETONE	9.30	72	35115	5.13	PPBV	96
39) cis-1,2-DICHLOROETHYLENE	9.75	96	87137	4.99	PPBV	99
40) ETHYL ACETATE	9.94	61	21801	5.37	PPBV #	92
41) CHLOROFORM	10.05	83	154976	5.39	PPBV	99

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25646.D Vial: 10
Acq On : 22 Sep 2009 8:29 pm Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:10 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.85	57	139877	5.57	PPBV		100
43) 1,1,1-TRICHLOROETHANE	11.07	97	160874	5.39	PPBV		99
44) CARBON TETRACHLORIDE	11.69	117	170500	5.49	PPBV		99
45) 1,2-DICHLOROETHANE	10.81	62	99541	5.34	PPBV		100
47) BENZENE	11.54	78	262193	5.21	PPBV		99
48) CYCLOHEXANE	11.83	84	117267	5.19	PPBV		97
49) 2,3-DIMETHYLPENTANE	12.03	71	54475	5.42	PPBV		98
50) TRICHLOROETHYLENE	12.61	95	103205	5.24	PPBV		100
51) 1,2-DICHLOROPROPANE	12.37	63	93631	5.06	PPBV		99
52) BROMODICHLOROMETHANE	12.56	83	163866	5.55	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	347076	5.68	PPBV		99
54) 1,4-DIOXANE	12.62	88	47641	5.58	PPBV	#	1
55) METHYL METHACRYLATE	12.76	69	70826	5.43	PPBV		98
56) HEPTANE	12.87	43	130919	5.39	PPBV		99
57) TVHC as EQUIV HEPTANE	12.87	TIC	587467m	5.46	PPBV		
58) METHYL ISOBUTYL KETONE	13.50	43	150977	5.66	PPBV		99
59) cis-1,3-DICHLOROPROPENE	13.48	75	129243	5.34	PPBV		98
60) TOLUENE	14.50	92	175556	5.34	PPBV		97
61) trans-1,3-DICHLOROPROPENE	14.01	75	112741	5.18	PPBV		99
62) 1,1,2-TRICHLOROETHANE	14.21	83	80966	5.47	PPBV		99
64) 2-HEXANONE	14.75	58	67645	5.19	PPBV		98
65) TETRACHLOROETHYLENE	15.71	164	118959	5.21	PPBV		99
66) DIBROMOCHLOROMETHANE	14.96	129	158890	5.59	PPBV		99
67) 1,2-DIBROMOETHANE	15.23	107	127475	5.33	PPBV		100
68) OCTANE	15.50	43	165582	5.90	PPBV		99
69) 1,1,1,2-TETRACHLOROETHANE	16.41	131	112936	5.63	PPBV	#	99
70) CHLOROBENZENE	16.44	112	190113	5.33	PPBV		99
71) ETHYLBENZENE	16.83	91	326264	5.40	PPBV		98
72) m,p-XYLENE	17.02	106	248240	10.69	PPBV		96
73) o-XYLENE	17.54	106	119541	5.52	PPBV		98
74) STYRENE	17.42	104	163371	5.62	PPBV		100
75) NONANE	17.73	43	146151	6.14	PPBV		99
76) BROMOFORM	17.14	173	125521	5.70	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.53	83	133927	5.63	PPBV		100
79) ISOPROPYLBENZENE	18.17	105	319194	5.76	PPBV		98
80) 2-CHLOROTOLUENE	18.69	126	70402	5.76	PPBV	#	90
81) n-PROPYLBENZENE	18.71	120	75498	5.96	PPBV		87
82) 4-ETHYLTOLUENE	18.87	105	241381	6.21	PPBV		98
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	201500	6.09	PPBV		99
84) TERT-BUTYLBENZENE	19.40	134	52925	5.80	PPBV		95
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	171536	6.25	PPBV		98
86) m-DICHLOROBENZENE	19.59	146	91387	5.31	PPBV		99
87) BENZYL CHLORIDE	19.57	91	78641	5.36	PPBV		99
88) p-DICHLOROBENZENE	19.66	146	79468	5.37	PPBV		99
89) SEC-BUTYLBENZENE	19.70	134	54604	5.93	PPBV		92
90) p-ISOPROPYLTOLUENE	19.87	134	48903	5.97	PPBV		96
91) o-DICHLOROBENZENE	20.05	146	73069	5.32	PPBV		99
92) n-BUTYLBENZENE	20.33	134	29003	5.76	PPBV		96
93) HEXACHLOROBUTADIENE	22.41	225	17619	4.85	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25646.D Vial: 10
Acq On : 22 Sep 2009 8:29 pm Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:10 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

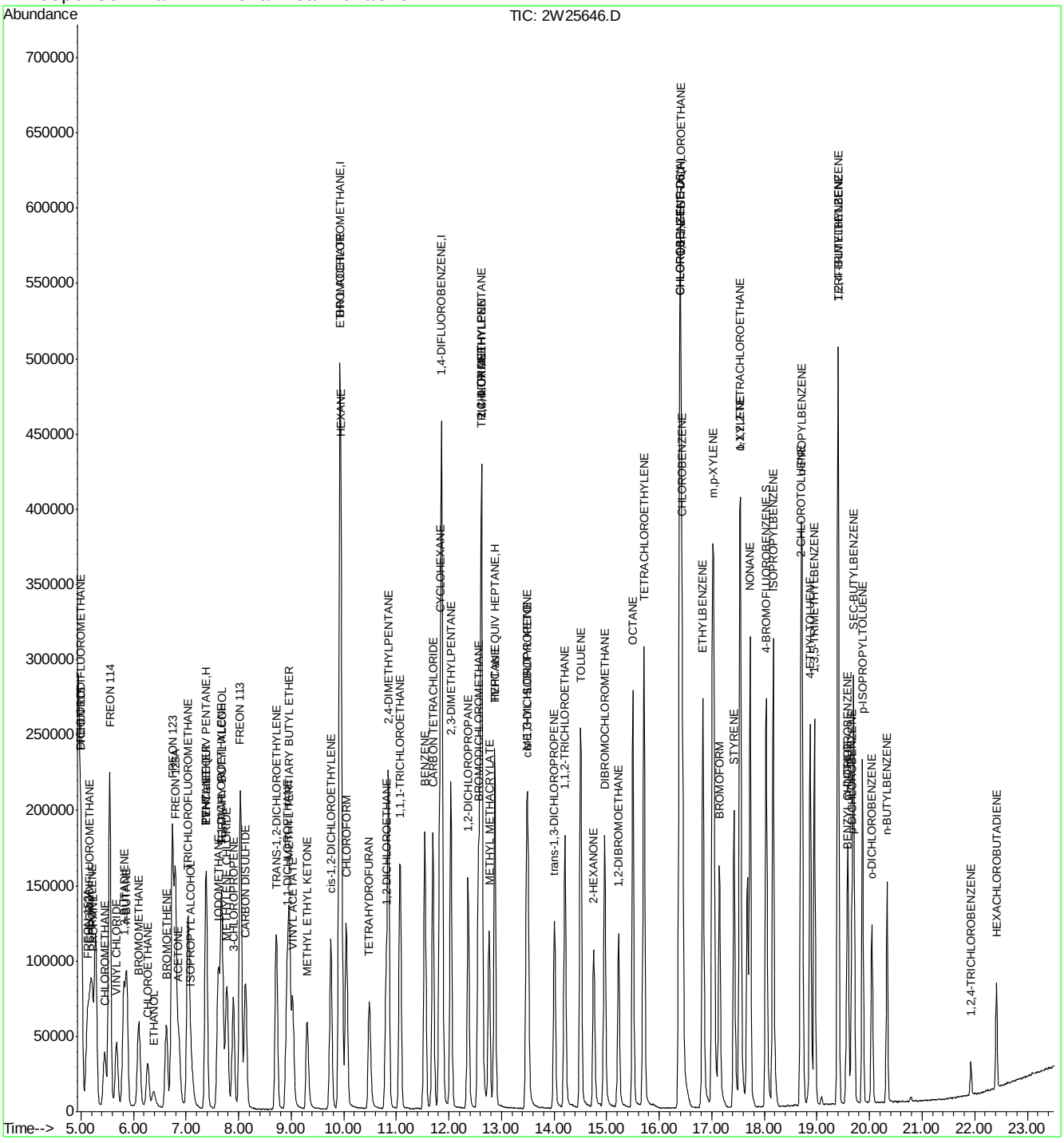
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	9837	3.98	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25646.D Vial: 10
Acq On : 22 Sep 2009 8:29 pm Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:49 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

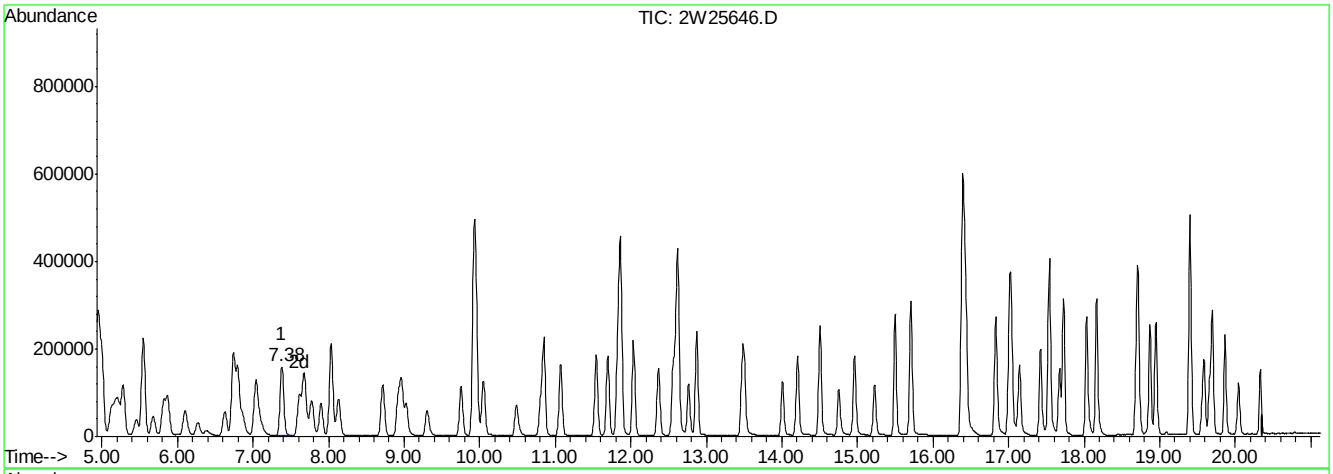


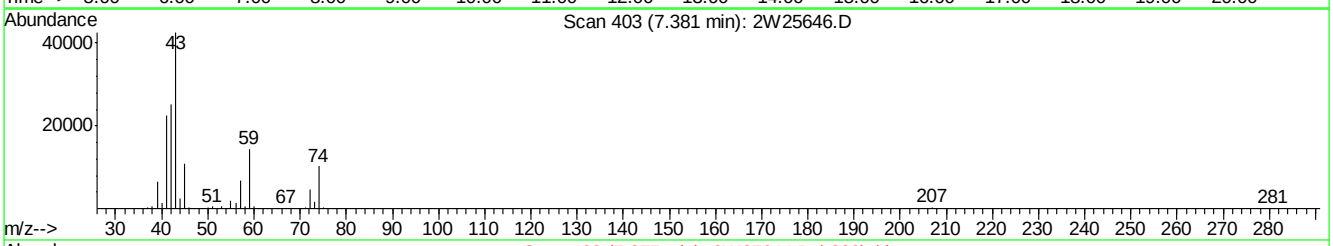
ACCUTEST Laboratories JA28238

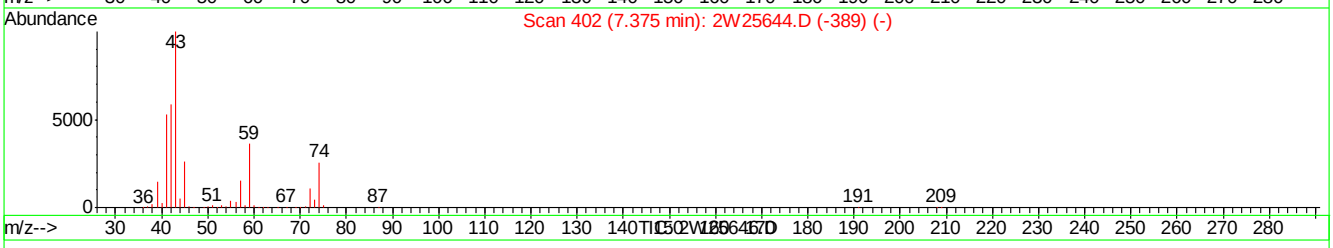
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25646.D Vial: 10
Acq On : 22 Sep 2009 8:29 pm Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:49 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.38min 5.58PPBV m

response 536740

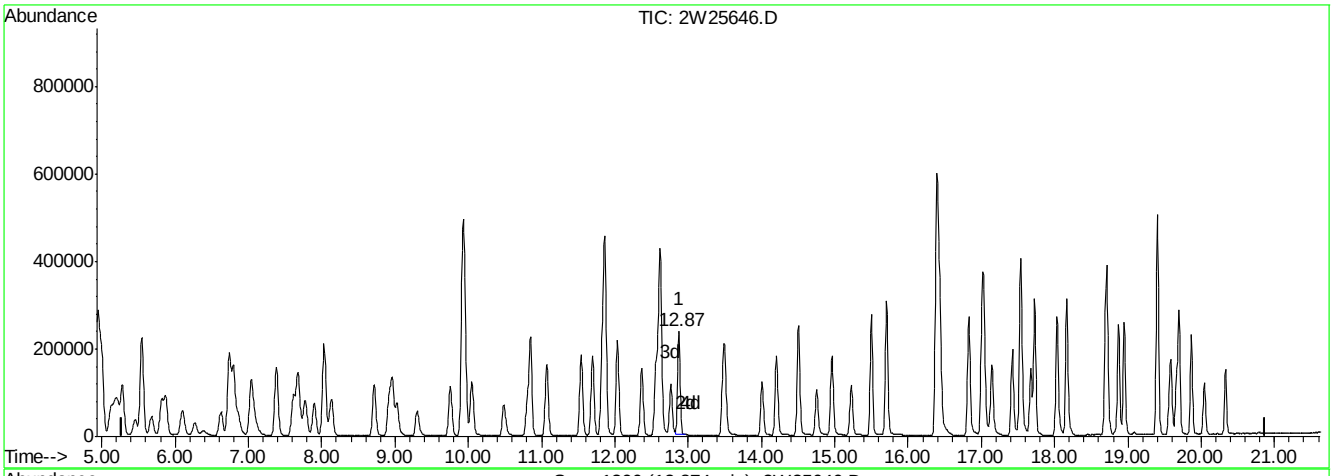
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

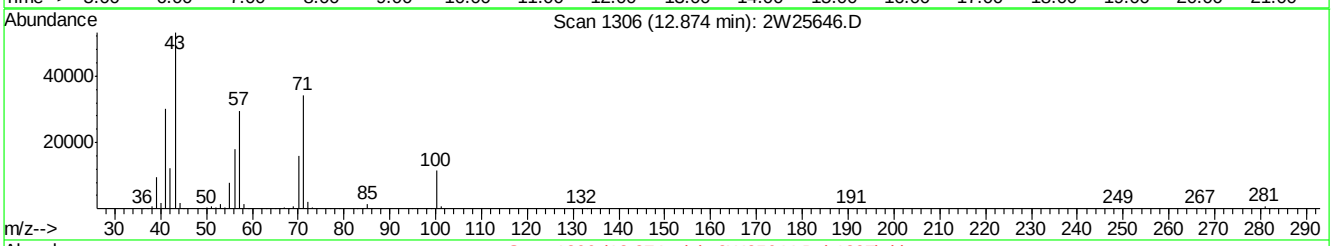
2W25646.D M2W1080.M Fri Sep 25 12:37:50 2009 MS2W

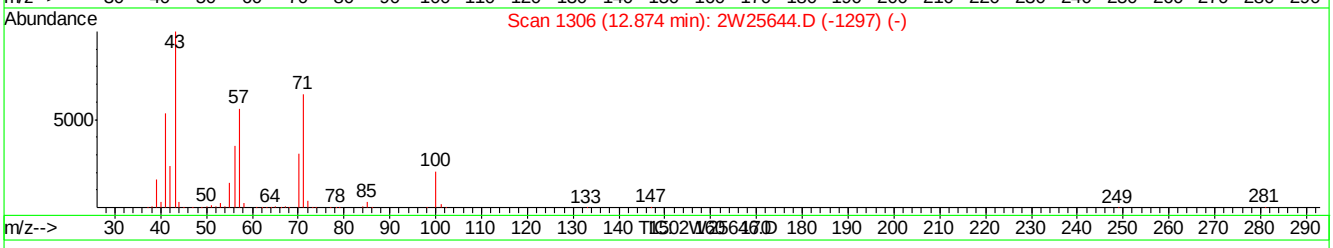
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25646.D Vial: 10
Acq On : 22 Sep 2009 8:29 pm Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:49 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.87min 5.46PPBV m

response 587467

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25646.D M2W1080.M Fri Sep 25 12:37:53 2009 MS2W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu
09/30/09 14:46

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:13 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	131042	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	590893	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	244249	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	244249	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.03	95	114048	4.52	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 90.40%			
Target Compounds						Qvalue
2) FREON 115	5.01	119	3216	0.23	PPBV	95
3) DICHLORODIFLUOROMETHANE	5.00	85	4288	0.22	PPBV #	89
4) FREON 152A	5.12	65	2661	0.23	PPBV #	51
5) CHLORODIFLUOROMETHANE	5.17	67	1039	0.23	PPBV #	43
6) PROPYLENE	5.20	41	4499	0.27	PPBV	94
7) PROPANE	5.23	43	1849	0.29	PPBV #	100
8) FREON 114	5.54	85	11639	0.23	PPBV	97
9) CHLOROMETHANE	5.45	52	1481	0.24	PPBV #	38
10) VINYL CHLORIDE	5.68	62	4614	0.23	PPBV #	92
11) 1,3-BUTADIENE	5.82	54	3449	0.23	PPBV	89
12) n-BUTANE	5.87	43	7273	0.24	PPBV #	71
13) BROMOMETHANE	6.11	94	3930	0.22	PPBV #	88
14) CHLOROETHANE	6.27	64	2420	0.22	PPBV #	46
15) FREON 123	6.74	83	8745	0.22	PPBV #	98
16) FREON 123A	6.80	117	4727	0.22	PPBV	93
17) TRICHLOROFLUOROMETHANE	7.03	101	8898	0.22	PPBV	99
18) ISOPROPYL ALCOHOL	7.18	45	6266	0.24	PPBV	86
19) ACETONE	6.93	58	2482	0.27	PPBV	94
20) PENTANE	7.38	42	4308	0.24	PPBV	93
21) TVHC as EQUIV PENTANE	7.38	TIC	24855m	0.23	PPBV	
22) ETHYL ETHER	7.44	74	1488	0.20	PPBV	97
23) IODOMETHANE	7.61	142	9036	0.21	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.68	96	3836	0.23	PPBV	88
25) CARBON DISULFIDE	8.13	76	11674	0.22	PPBV #	87
26) ETHANOL	6.47	45	2221m	0.32	PPBV	
27) BROMOETHENE	6.63	106	3530	0.21	PPBV #	94
28) METHYLENE CHLORIDE	7.79	84	3919	0.26	PPBV	95
29) 3-CHLOROPROPENE	7.92	76	1500	0.20	PPBV #	1
30) FREON 113	8.04	151	5857	0.22	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	4506	0.23	PPBV	85
32) TERTIARY BUTYL ALCOHOL	7.79	59	5977	0.24	PPBV #	61
33) METHYL TERTIARY BUTYL ETHE	9.02	73	8380	0.21	PPBV	96
34) TETRAHYDROFURAN	10.55	42	3285	0.20	PPBV	97
35) HEXANE	9.95	57	5112	0.21	PPBV	98
36) VINYL ACETATE	9.05	86	590m	0.16	PPBV	
37) 1,1-DICHLOROETHANE	8.93	63	6961	0.22	PPBV #	87
38) METHYL ETHYL KETONE	9.36	72	1478	0.19	PPBV	94
39) cis-1,2-DICHLOROETHYLENE	9.77	96	4405	0.23	PPBV	85
40) ETHYL ACETATE	9.98	61	969m	0.21	PPBV	
41) CHLOROFORM	10.05	83	6789	0.21	PPBV	97

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:13 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.85	57	5847	0.21	PPBV		99
43)	1,1,1-TRICHLOROETHANE	11.07	97	7137	0.21	PPBV		97
44)	CARBON TETRACHLORIDE	11.70	117	7306	0.21	PPBV		99
45)	1,2-DICHLOROETHANE	10.82	62	4258	0.21	PPBV	#	92
47)	BENZENE	11.55	78	11540	0.21	PPBV		98
48)	CYCLOHEXANE	11.83	84	5519	0.22	PPBV	#	3
49)	2,3-DIMETHYLPENTANE	12.04	71	2091	0.19	PPBV	#	81
50)	TRICHLOROETHYLENE	12.61	95	4657	0.22	PPBV		97
51)	1,2-DICHLOROPROPANE	12.37	63	4394	0.22	PPBV		90
52)	BROMODICHLOROMETHANE	12.56	83	6699	0.21	PPBV	#	96
53)	2,2,4-TRIMETHYLPENTANE	12.62	57	14534	0.22	PPBV		99
54)	1,4-DIOXANE	12.72	88	1978	0.21	PPBV	#	1
55)	METHYL METHACRYLATE	12.79	69	2573	0.18	PPBV	#	77
56)	HEPTANE	12.87	43	5563	0.21	PPBV		96
57)	TVHC as EQUIV HEPTANE	12.87	TIC	24718m	0.21	PPBV		
58)	METHYL ISOBUTYL KETONE	13.53	43	6401	0.22	PPBV	#	77
59)	cis-1,3-DICHLOROPROPENE	13.48	75	5249	0.20	PPBV		90
60)	TOLUENE	14.51	92	6842	0.19	PPBV		90
61)	trans-1,3-DICHLOROPROPENE	14.01	75	4208	0.18	PPBV		94
62)	1,1,2-TRICHLOROETHANE	14.21	83	3218	0.20	PPBV		99
64)	2-HEXANONE	14.78	58	3775	0.30	PPBV	#	88
65)	TETRACHLOROETHYLENE	15.71	164	4771	0.22	PPBV		97
66)	DIBROMOCHLOROMETHANE	14.96	129	5471	0.20	PPBV		99
67)	1,2-DIBROMOETHANE	15.23	107	4857	0.21	PPBV	#	97
68)	OCTANE	15.50	43	5814	0.22	PPBV		94
69)	1,1,1,2-TETRACHLOROETHANE	16.41	131	4080	0.21	PPBV	#	88
70)	CHLOROBENZENE	16.45	112	7793	0.23	PPBV		98
71)	ETHYLBENZENE	16.83	91	12346	0.21	PPBV	#	90
72)	m,p-XYLENE	17.02	106	9294	0.42	PPBV		92
73)	o-XYLENE	17.55	106	4408	0.21	PPBV		94
74)	STYRENE	17.42	104	4414	0.16	PPBV		97
75)	NONANE	17.73	43	4606	0.20	PPBV	#	87
76)	BROMOFORM	17.14	173	3865	0.18	PPBV	#	91
78)	1,1,2,2-TETRACHLOROETHANE	17.53	83	4403	0.19	PPBV	#	95
79)	ISOPROPYLBENZENE	18.16	105	10701	0.20	PPBV		96
80)	2-CHLOROTOLUENE	18.70	126	2209	0.19	PPBV	#	89
81)	n-PROPYLBENZENE	18.71	120	2063	0.17	PPBV	#	54
82)	4-ETHYLTOLUENE	18.87	105	6601	0.18	PPBV	#	98
83)	1,3,5-TRIMETHYLBENZENE	18.95	105	5828	0.18	PPBV	#	95
84)	TERT-BUTYLBENZENE	19.40	134	1588	0.18	PPBV		97
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	4653	0.18	PPBV		89
86)	m-DICHLOROBENZENE	19.60	146	2858	0.17	PPBV		90
87)	BENZYL CHLORIDE	19.57	91	2746	0.20	PPBV	#	59
88)	p-DICHLOROBENZENE	19.66	146	2698	0.19	PPBV	#	73
89)	SEC-BUTYLBENZENE	19.69	134	1398	0.16	PPBV		79
90)	p-ISOPROPYLTOLUENE	19.86	134	1177	0.15	PPBV		95
91)	o-DICHLOROBENZENE	20.05	146	2292	0.17	PPBV	#	73
92)	n-BUTYLBENZENE	20.34	134	696m	0.15	PPBV		
93)	HEXACHLOROBUTADIENE	22.42	225	1116	0.32	PPBV	#	18

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:13 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	825m	0.35 PPBV	

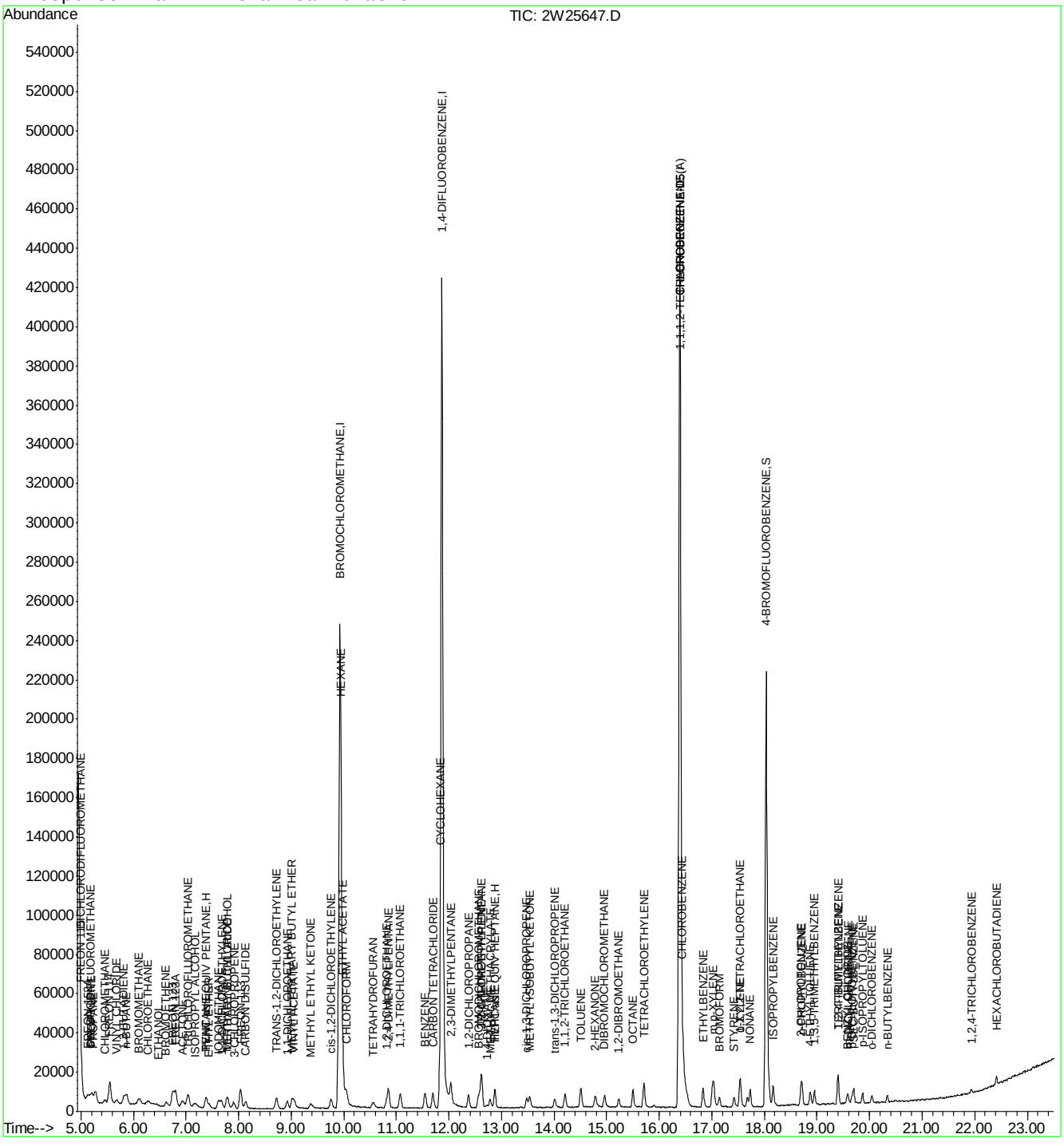
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:51 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

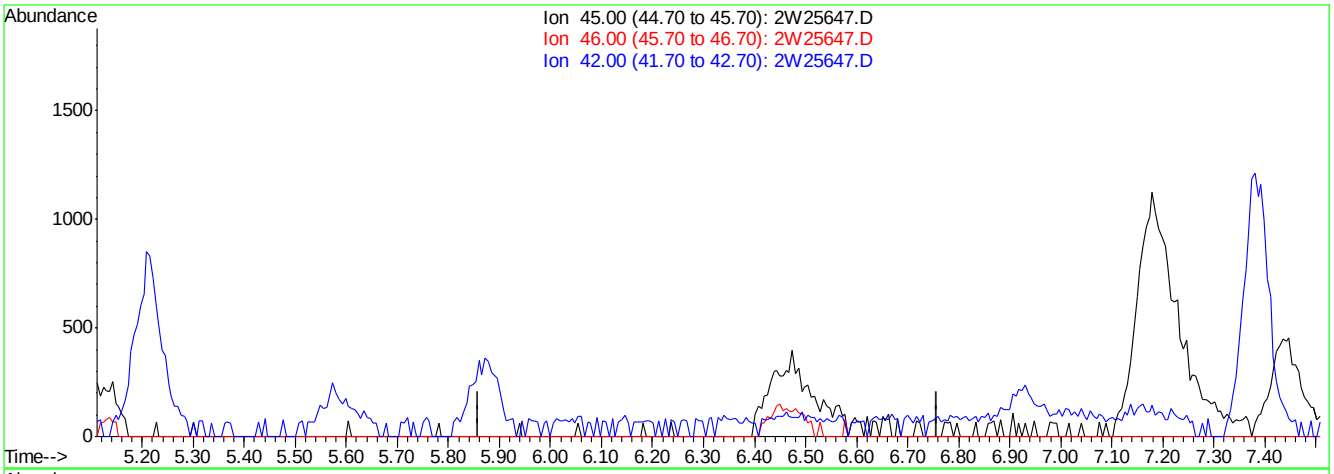


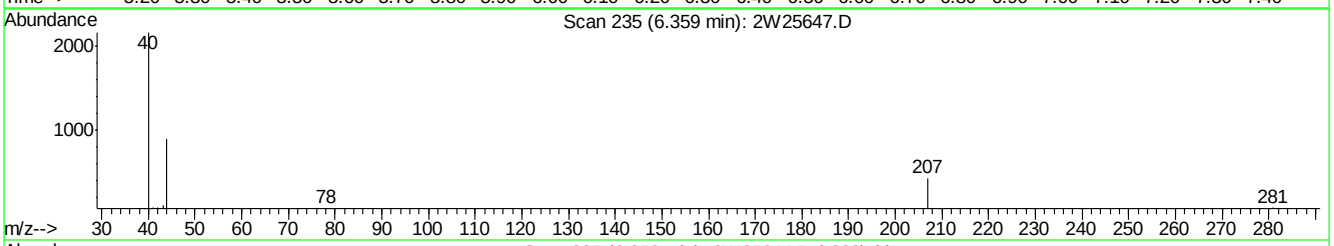
ACCUTEST Laboratories JA28238

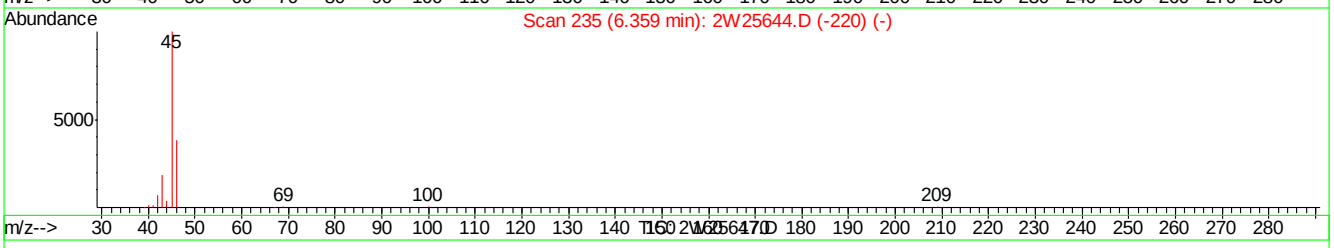
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:49 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration







(26) ETHANOL

6.36min 0.00PPBV

response 0

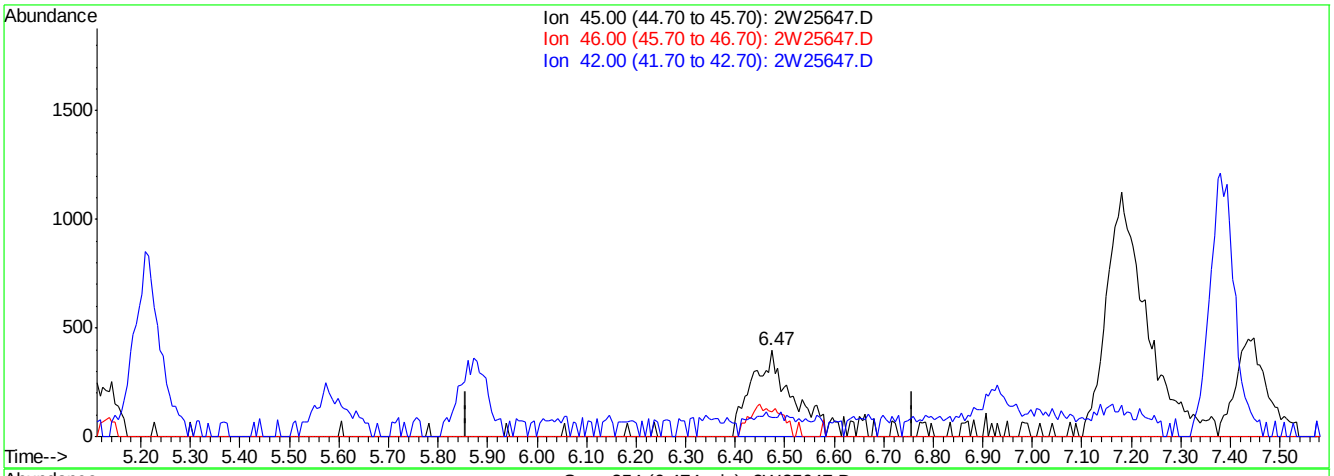
Ion	Exp%	Act%
45.00	100	0.00
46.00	39.40	0.00#
42.00	8.50	0.00
0.00	0.00	0.00

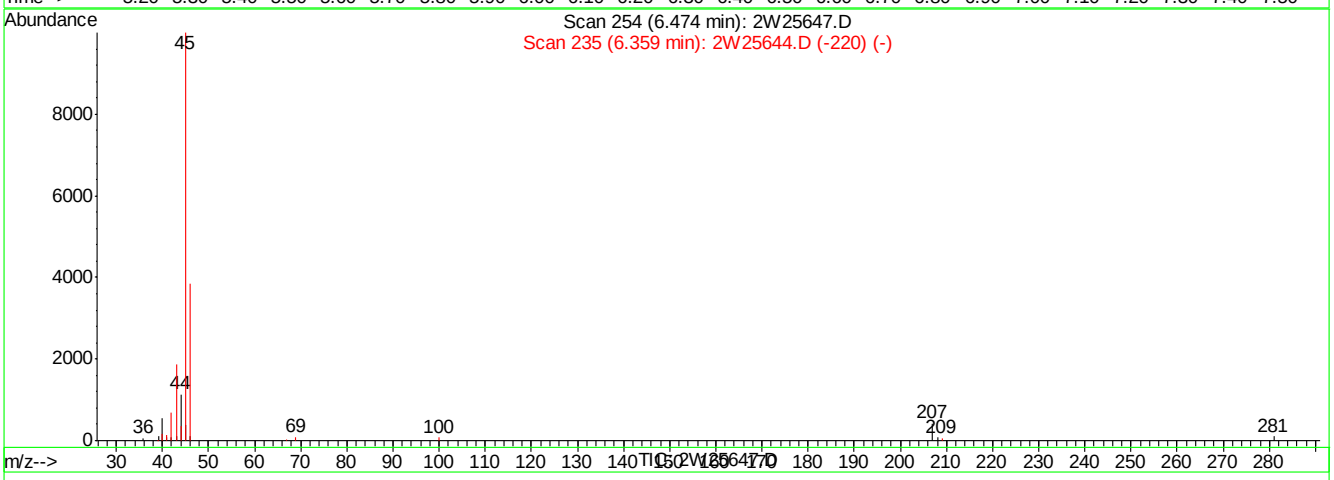
2W25647.D M2W1080.M Fri Sep 25 11:49:59 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration





(26) ETHANOL

6.47min 0.32PPBV m

response 2221

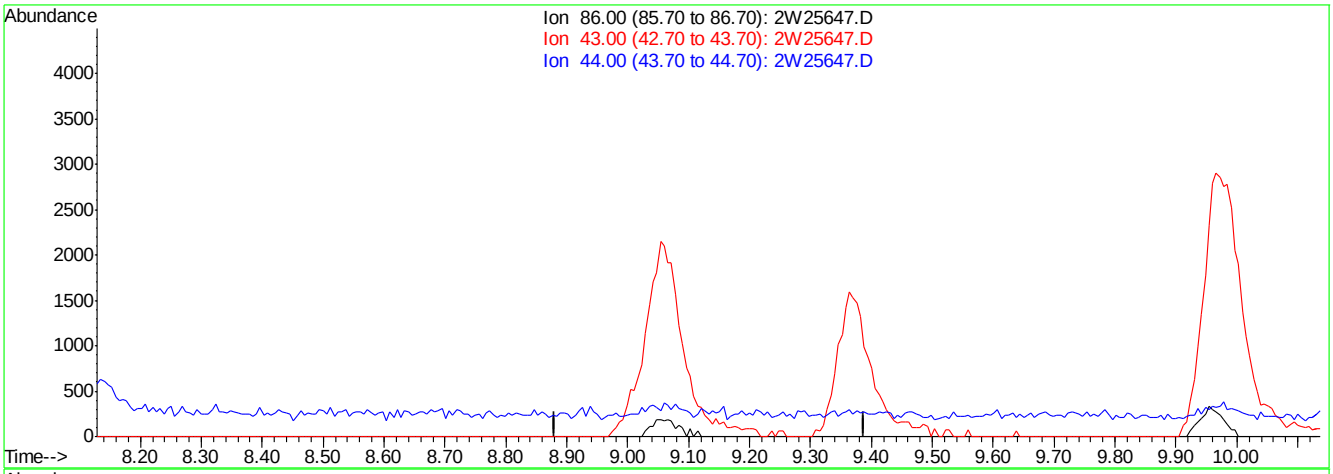
Ion	Exp%	Act%
45.00	100	100
46.00	39.40	0.00#
42.00	8.50	0.00
0.00	0.00	0.00

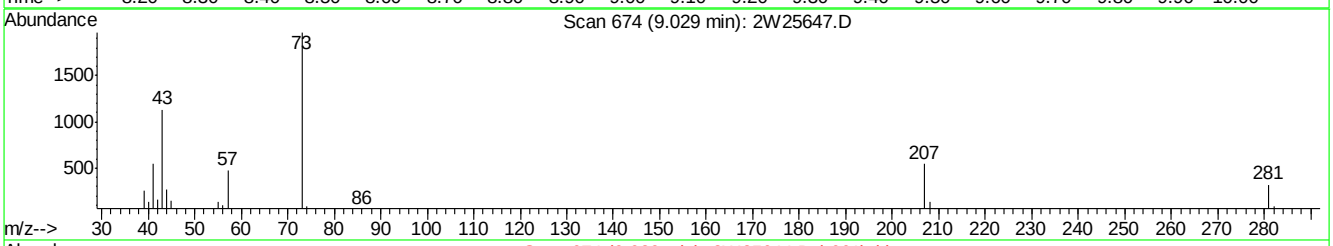
2W25647.D M2W1080.M Fri Sep 25 11:50:06 2009 MS2W

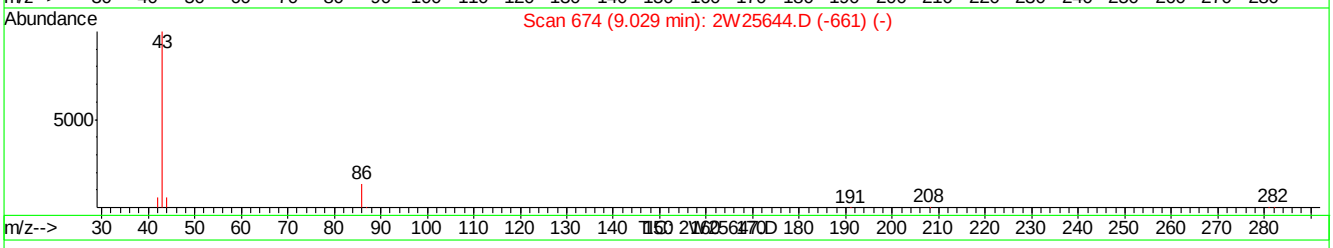
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration







(36) VINYL ACETATE

9.03min 0.00PPBV

response 0

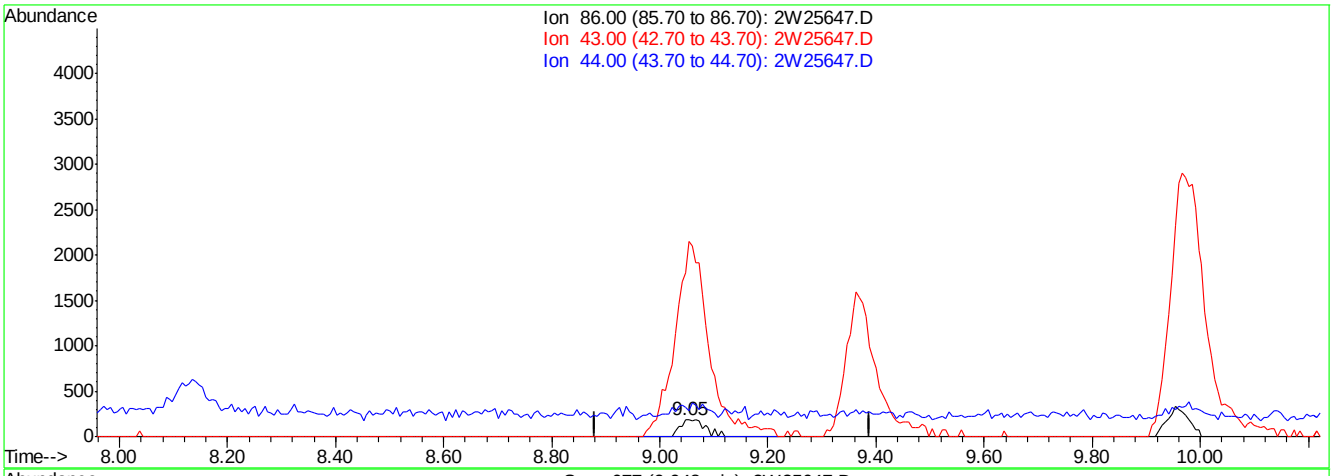
Ion	Exp%	Act%
86.00	100	0.00
43.00	1026.30	0.00#
44.00	53.50	0.00#
0.00	0.00	0.00

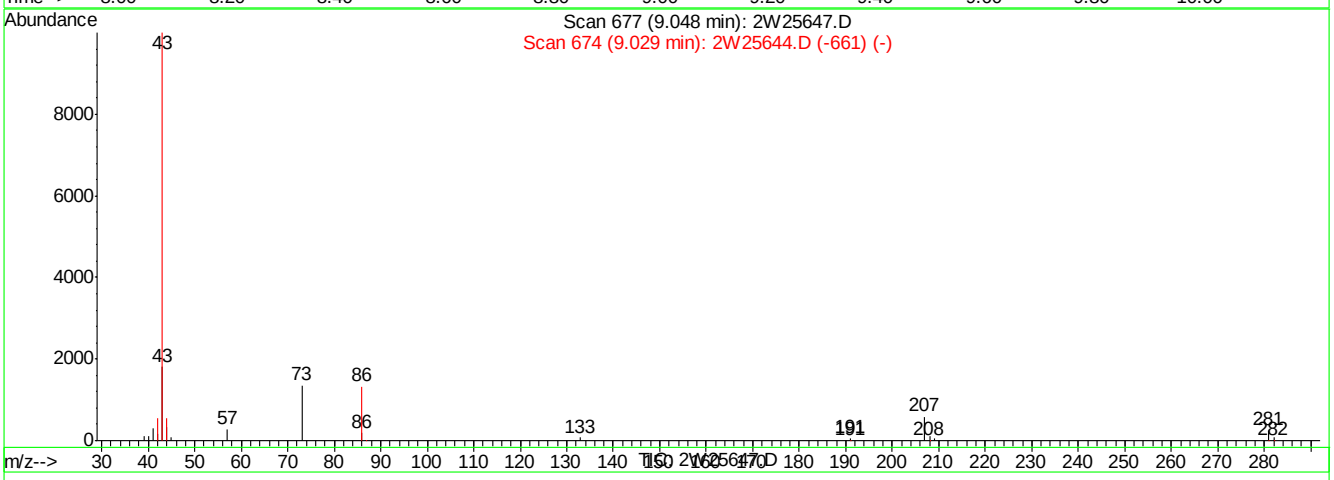
2W25647.D M2W1080.M Fri Sep 25 11:50:14 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration





(36) VINYL ACETATE

9.05min 0.16PPBV m

response 590

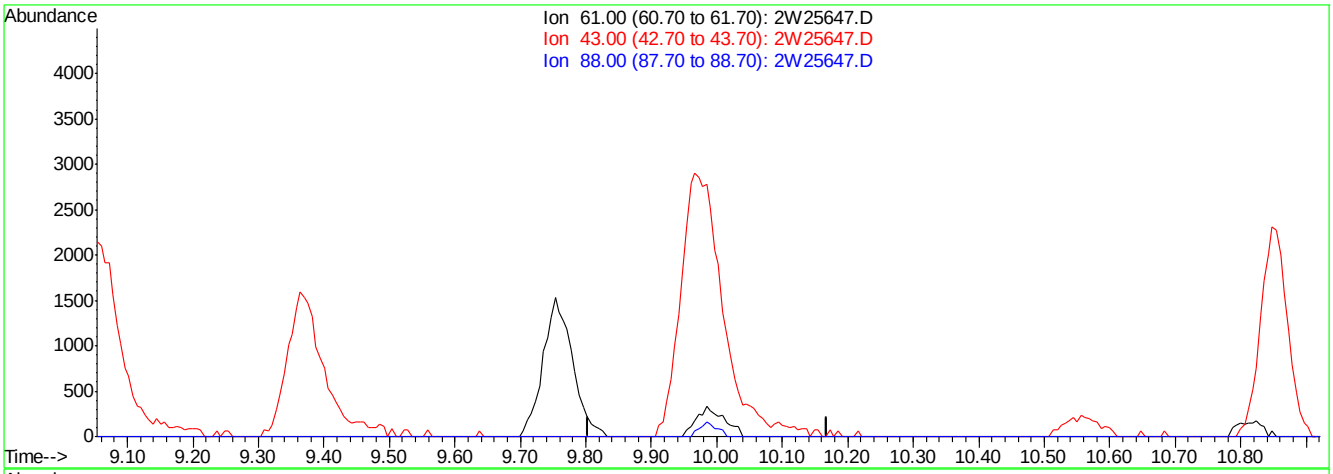
Ion	Exp%	Act%
86.00	100	100
43.00	1026.30	0.00#
44.00	53.50	0.00#
0.00	0.00	0.00

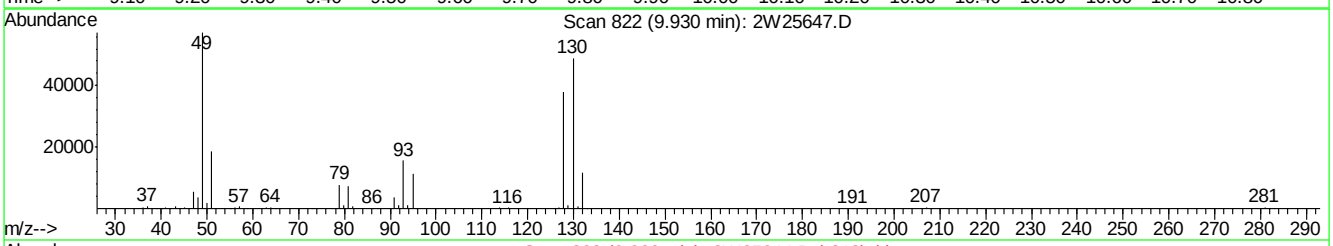
2W25647.D M2W1080.M Fri Sep 25 11:50:19 2009 MS2W

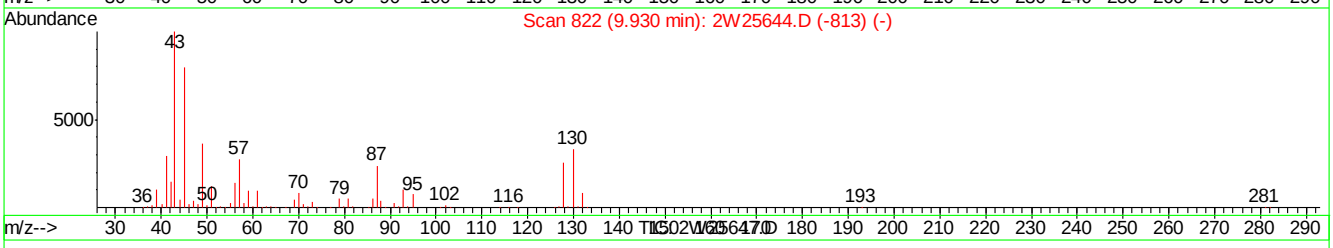
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration







(40) ETHYL ACETATE

9.93min 0.00PPBV

response 0

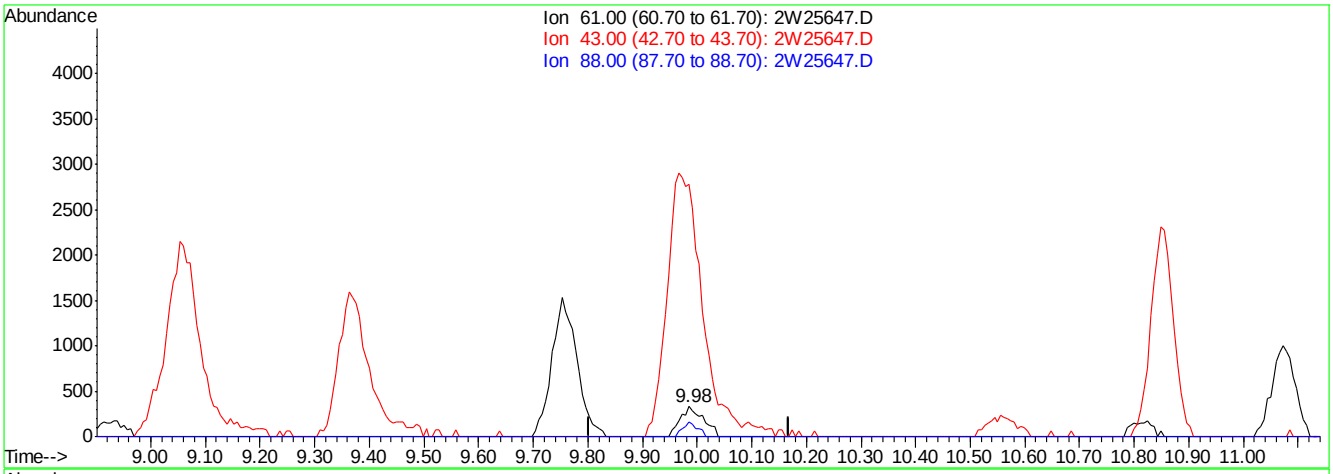
Ion	Exp%	Act%
61.00	100	0.00
43.00	1292.00	0.00#
88.00	45.80	0.00#
0.00	0.00	0.00

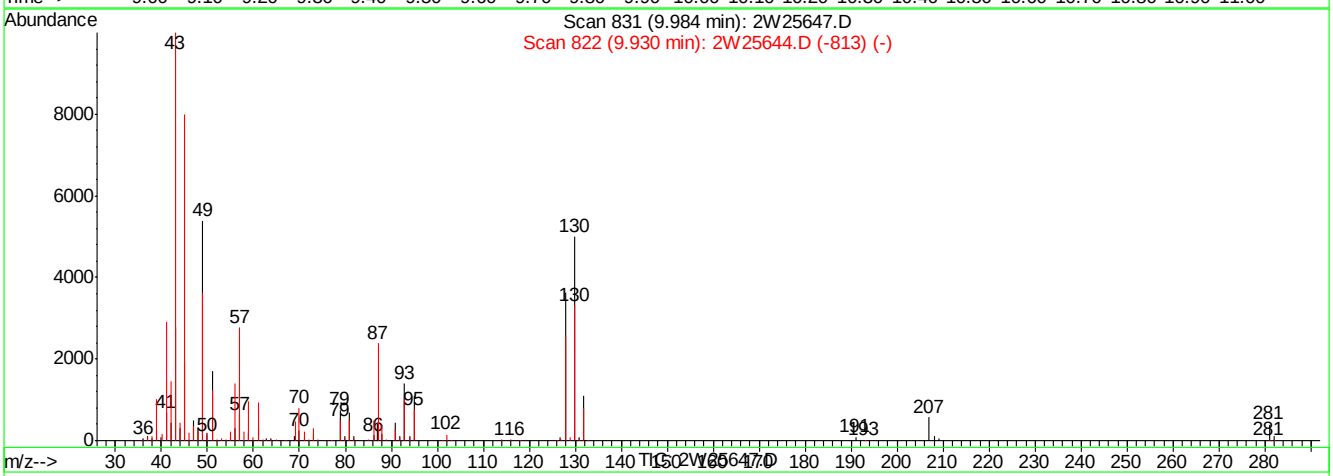
2W25647.D M2W1080.M Fri Sep 25 11:50:24 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration





(40) ETHYL ACETATE

9.98min 0.21PPBV m

response 969

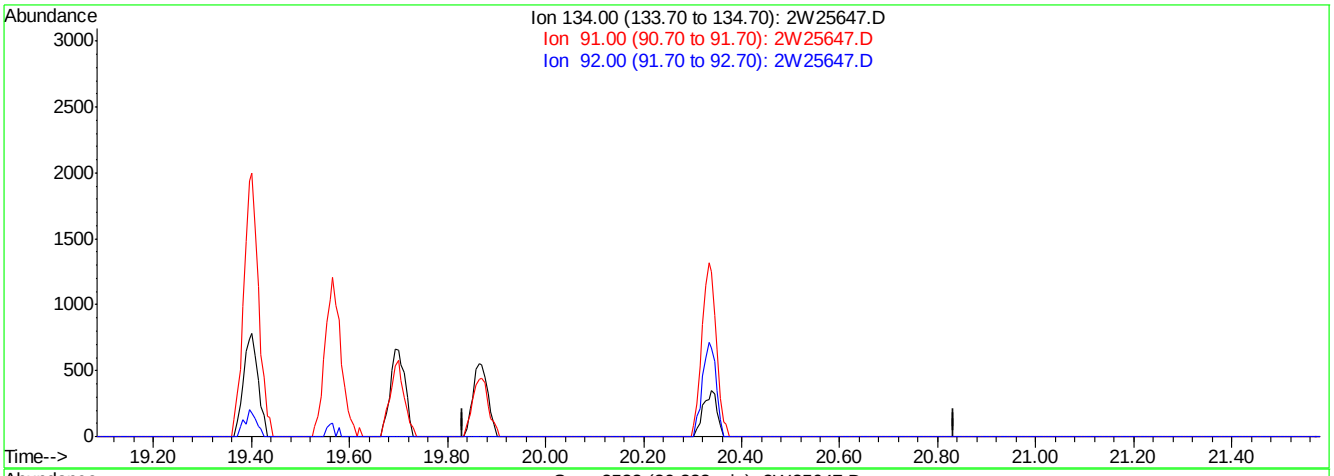
Ion	Exp%	Act%
61.00	100	100
43.00	1292.00	0.00#
88.00	45.80	0.00#
0.00	0.00	0.00

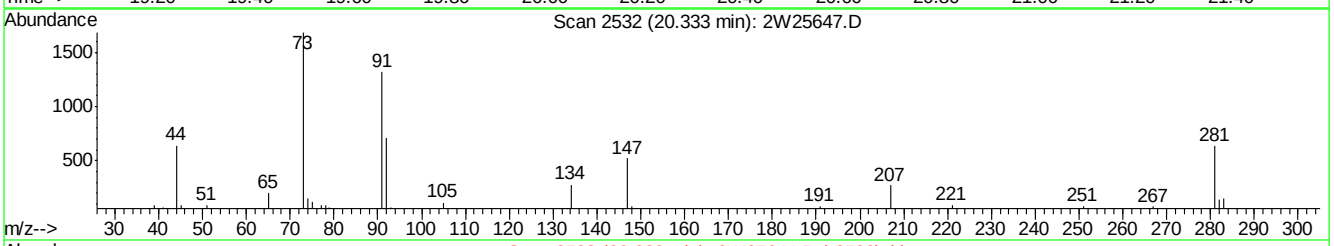
2W25647.D M2W1080.M Fri Sep 25 11:50:30 2009 MS2W

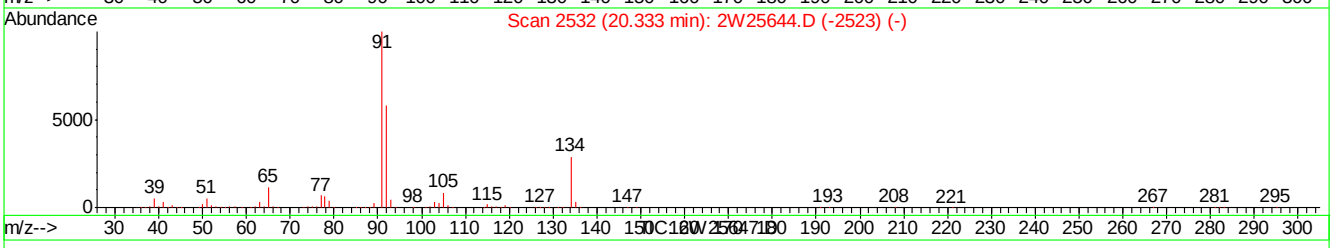
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration







(92) n-BUTYLBENZENE

20.33min 0.00PPBV

response 0

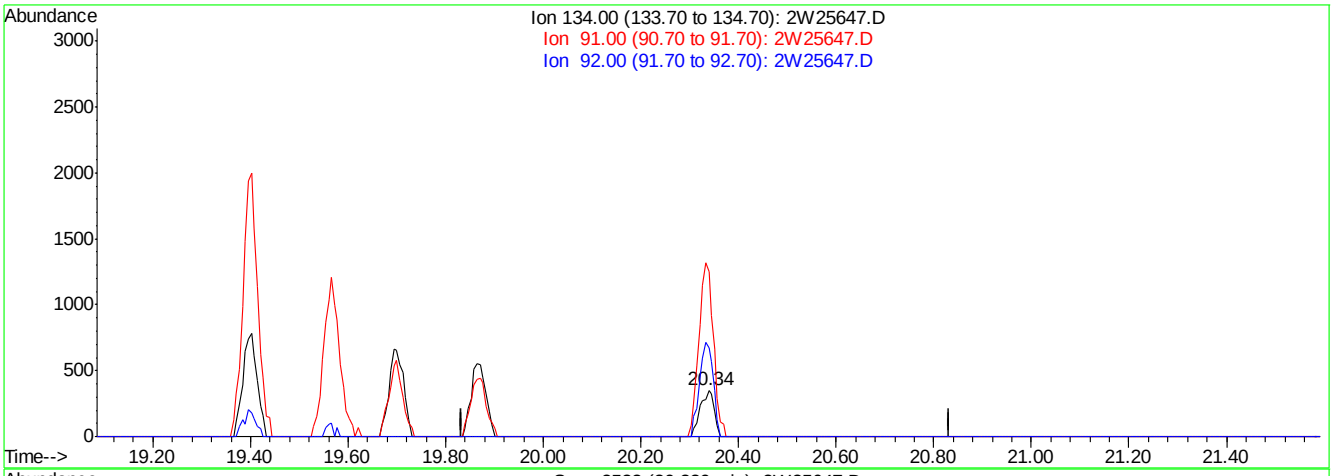
Ion	Exp%	Act%
134.00	100	0.00
91.00	351.30	0.00#
92.00	200.10	0.00#
0.00	0.00	0.00

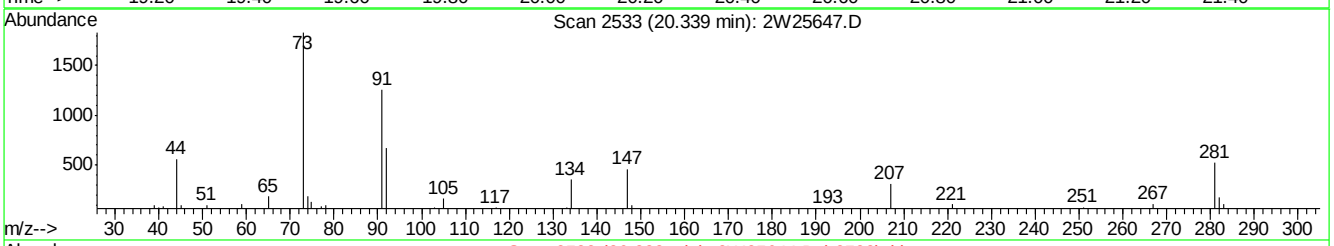
2W25647.D M2W1080.M Fri Sep 25 11:50:55 2009 MS2W

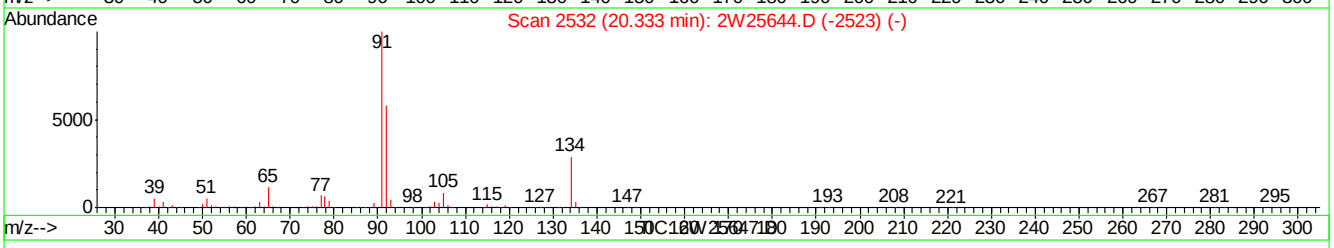
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration







(92) n-BUTYLBENZENE

20.34min 0.15PPBV m

response 696

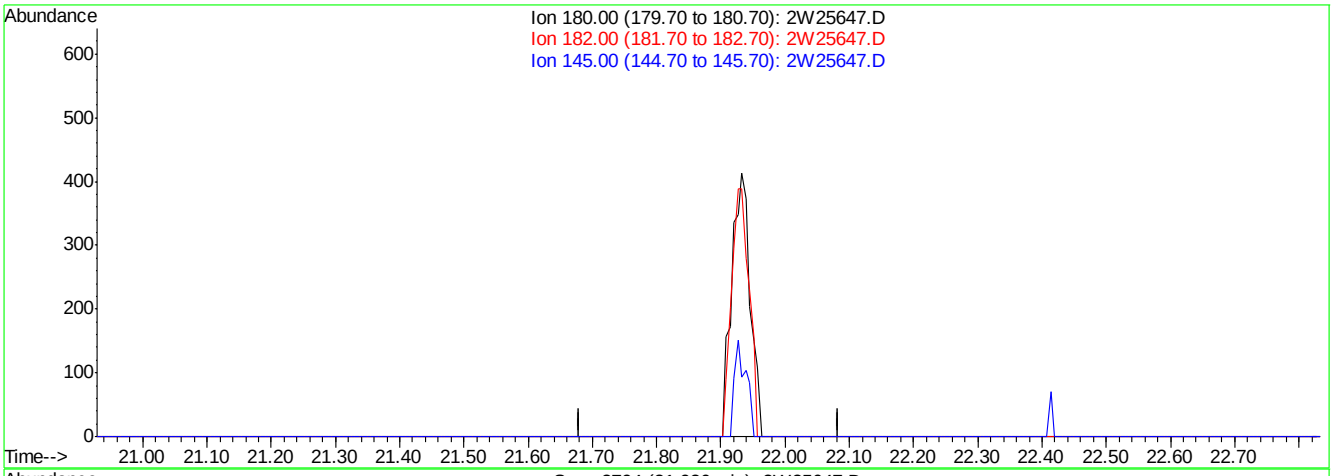
Ion	Exp%	Act%
134.00	100	100
91.00	351.30	0.00#
92.00	200.10	0.00#
0.00	0.00	0.00

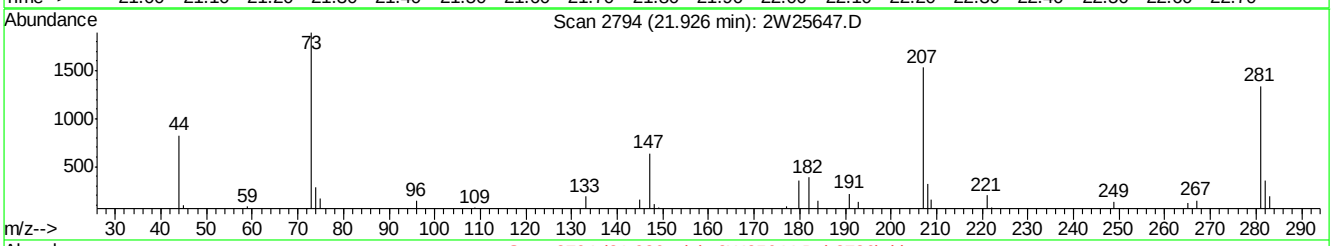
2W25647.D M2W1080.M Fri Sep 25 11:51:03 2009 MS2W

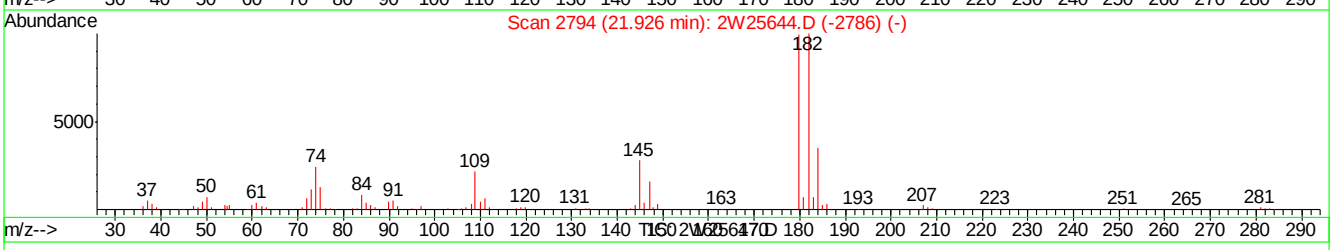
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:50 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration







(94) 1,2,4-TRICHLOROBENZENE

21.93min 0.00PPBV

response 0

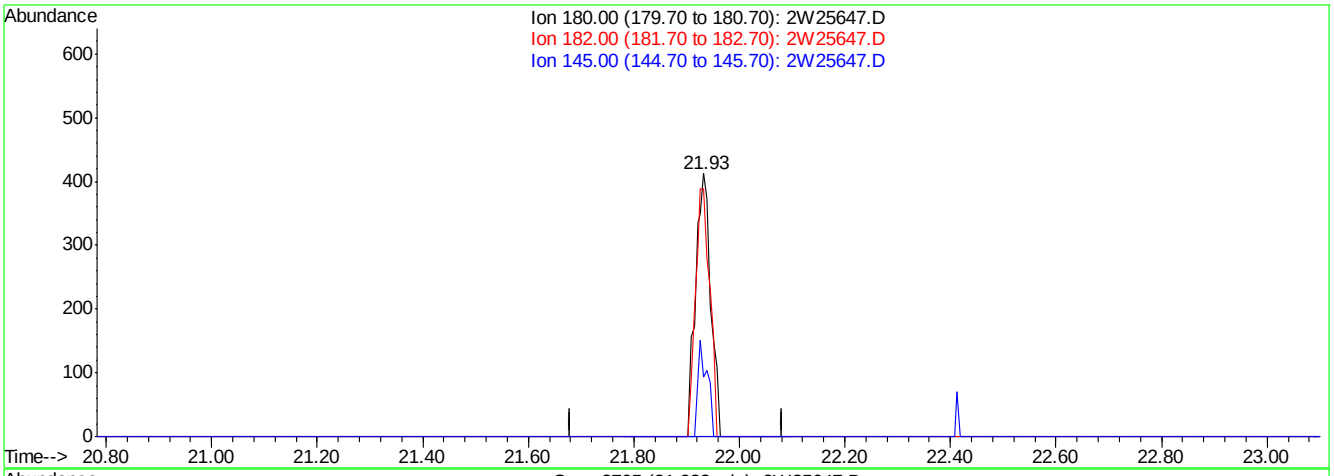
Ion	Exp%	Act%
180.00	100	0.00
182.00	96.30	0.00#
145.00	26.20	0.00#
0.00	0.00	0.00

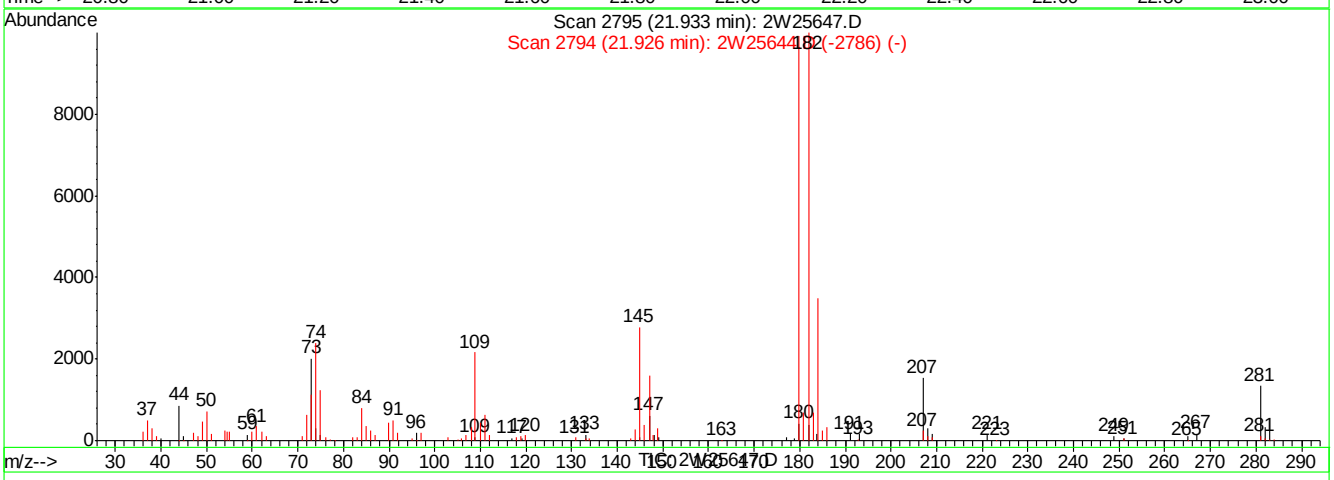
2W25647.D M2W1080.M Fri Sep 25 11:51:08 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:38:46 2009
Response via : Multiple Level Calibration





(94) 1,2,4-TRICHLOROBENZENE

21.93min 0.35PPBV m

response 825

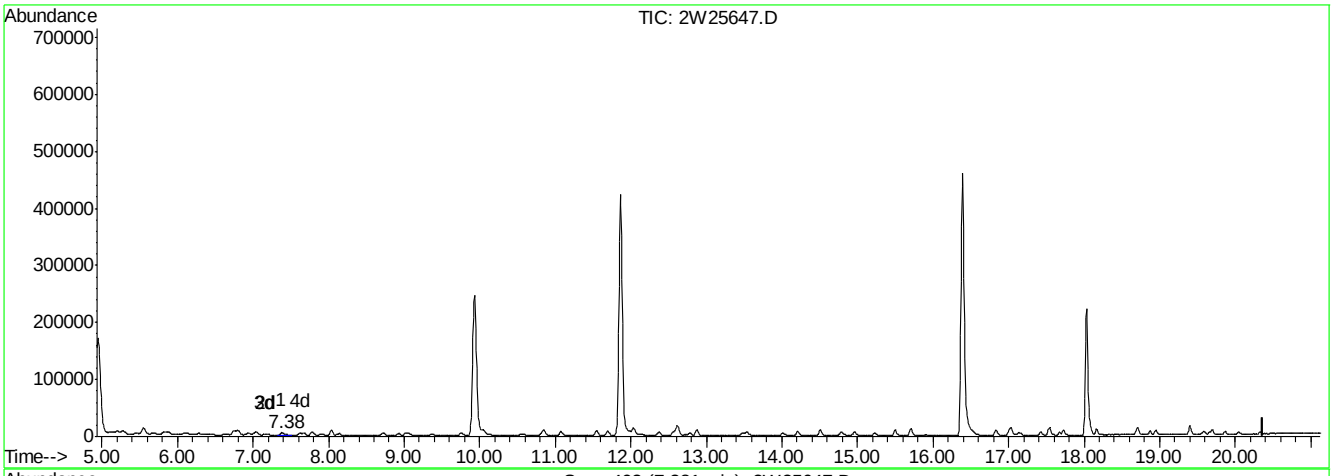
Ion	Exp%	Act%
180.00	100	100
182.00	96.30	0.00#
145.00	26.20	0.00#
0.00	0.00	0.00

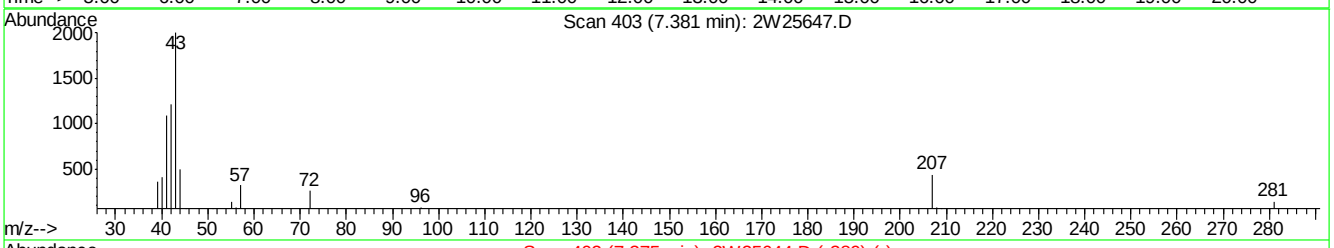
2W25647.D M2W1080.M Fri Sep 25 11:51:12 2009 MS2W

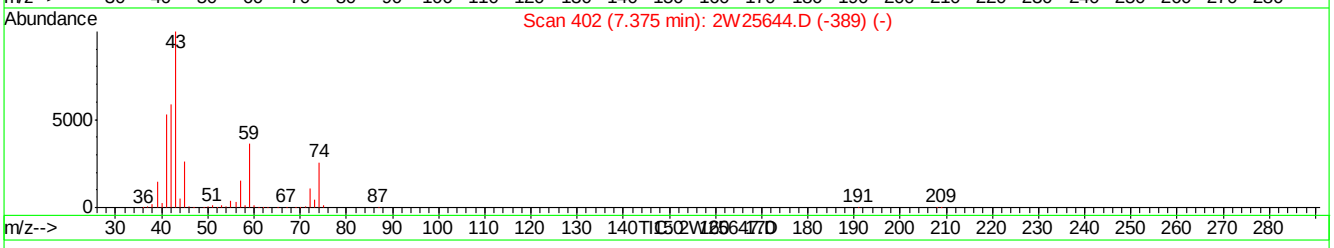
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.38min 0.23PPBV m

response 24855

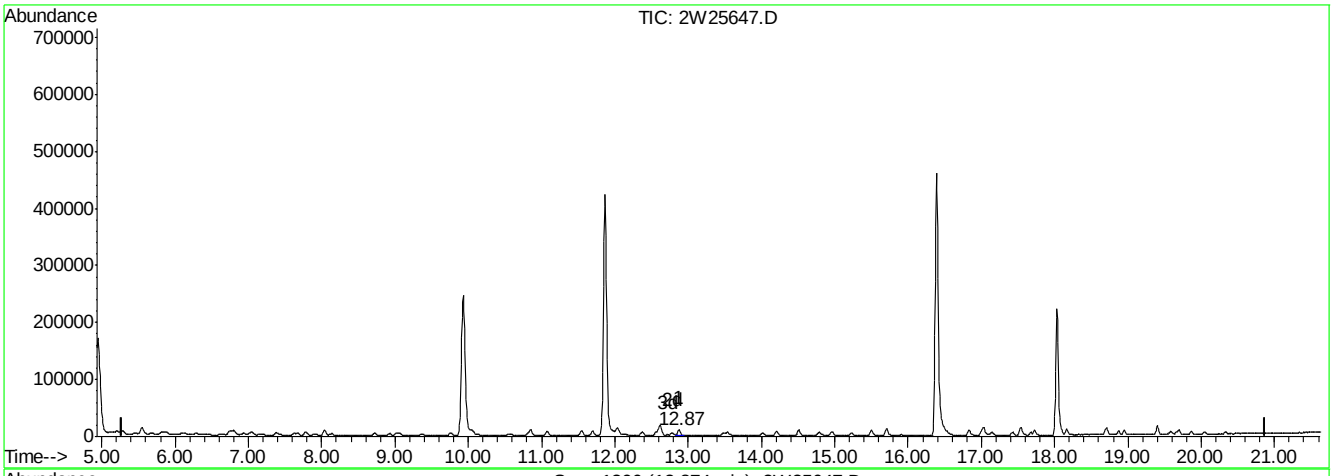
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

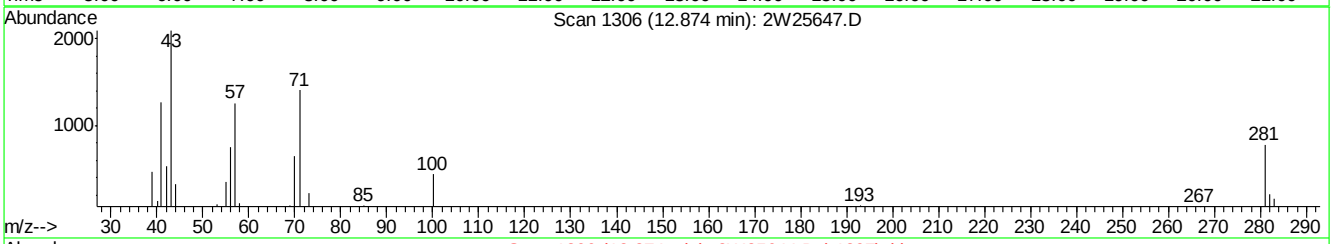
2W25647.D M2W1080.M Fri Sep 25 12:38:02 2009 MS2W

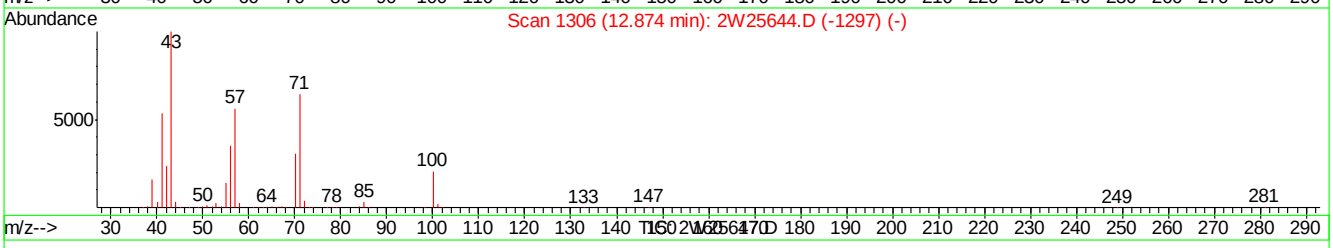
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25647.D Vial: 9
Acq On : 22 Sep 2009 9:12 pm Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.87min 0.21PPBV m

response 24718

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25647.D M2W1080.M Fri Sep 25 12:38:05 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25648.D Vial: 10
Acq On : 22 Sep 2009 9:55 pm Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:16 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	116475	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.87	114	543835	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.40	82	290001	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.40	82	290001	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.04	95	164380	5.49	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 109.80%

Target Compounds						Qvalue
2) FREON 115	5.00	119	214915	17.23	PPBV	99
3) DICHLORODIFLUOROMETHANE	5.00	85	302273	17.50	PPBV	100
4) FREON 152A	5.12	65	188366	18.08	PPBV	98
5) CHLORODIFLUOROMETHANE	5.17	67	70512	17.77	PPBV	99
6) PROPYLENE	5.21	41	244125	16.21	PPBV	97
7) PROPANE	5.23	43	87070	15.29	PPBV #	100
8) FREON 114	5.54	85	768061	17.19	PPBV	99
9) CHLOROMETHANE	5.45	52	99036	18.04	PPBV	98
10) VINYL CHLORIDE	5.67	62	325740	18.10	PPBV	100
11) 1,3-BUTADIENE	5.81	54	237746	17.57	PPBV	100
12) n-BUTANE	5.87	43	470216	17.75	PPBV	99
13) BROMOMETHANE	6.10	94	286851	18.13	PPBV	99
14) CHLOROETHANE	6.27	64	186044	18.96	PPBV	100
15) FREON 123	6.74	83	642483	18.21	PPBV #	99
16) FREON 123A	6.80	117	356940	18.38	PPBV	98
17) TRICHLOROFLUOROMETHANE	7.03	101	650023	18.03	PPBV	100
18) ISOPROPYL ALCOHOL	7.08	45	413109	18.16	PPBV	99
19) ACETONE	6.85	58	133895	16.56	PPBV	100
20) PENTANE	7.38	42	278473	17.53	PPBV	98
21) TVHC as EQUIV PENTANE	7.37	TIC	1819633m	19.12	PPBV	
22) ETHYL ETHER	7.37	74	132851	19.69	PPBV	98
23) IODOMETHANE	7.61	142	727787	18.85	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.67	96	255488	17.41	PPBV	99
25) CARBON DISULFIDE	8.13	76	813952	17.42	PPBV	99
26) ETHANOL	6.37	45	100530	16.20	PPBV	98
27) BROMOETHENE	6.62	106	285035	18.93	PPBV	100
28) METHYLENE CHLORIDE	7.78	84	236430	17.35	PPBV	98
29) 3-CHLOROPROPENE	7.90	76	129745	19.37	PPBV	97
30) FREON 113	8.03	151	446433	18.54	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	8.72	96	311450	17.81	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.68	59	413214	18.62	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	8.96	73	705725	19.52	PPBV	100
34) TETRAHYDROFURAN	10.47	42	303332	20.45	PPBV	97
35) HEXANE	9.95	57	405739	19.19	PPBV	100
36) VINYL ACETATE	9.03	86	67167	20.62	PPBV #	96
37) 1,1-DICHLOROETHANE	8.92	63	522138	18.69	PPBV	100
38) METHYL ETHYL KETONE	9.30	72	137131	20.25	PPBV	97
39) cis-1,2-DICHLOROETHYLENE	9.75	96	314027	18.19	PPBV	98
40) ETHYL ACETATE	9.94	61	79618	19.84	PPBV #	84
41) CHLOROFORM	10.06	83	541656	19.04	PPBV	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25648.D Vial: 10
Acq On : 22 Sep 2009 9:55 pm Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:16 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.85	57	493307	19.87	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.07	97	565238	19.13	PPBV		100
44) CARBON TETRACHLORIDE	11.70	117	595917	19.38	PPBV		99
45) 1,2-DICHLOROETHANE	10.81	62	364702	19.76	PPBV		100
47) BENZENE	11.55	78	912690	18.10	PPBV		100
48) CYCLOHEXANE	11.83	84	417346	18.44	PPBV		95
49) 2,3-DIMETHYLPENTANE	12.04	71	204977	20.35	PPBV		96
50) TRICHLOROETHYLENE	12.61	95	363473	18.43	PPBV		99
51) 1,2-DICHLOROPROPANE	12.37	63	341408	18.41	PPBV		98
52) BROMODICHLOROMETHANE	12.56	83	583340	19.71	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.63	57	1123705	18.36	PPBV		99
54) 1,4-DIOXANE	12.61	88	167495	19.57	PPBV	#	91
55) METHYL METHACRYLATE	12.77	69	287376	21.99	PPBV		98
56) HEPTANE	12.87	43	467074	19.20	PPBV		96
57) TVHC as EQUIV HEPTANE	12.87	TIC	2125993m	19.73	PPBV		
58) METHYL ISOBUTYL KETONE	13.51	43	520617	19.48	PPBV		98
59) cis-1,3-DICHLOROPROPENE	13.48	75	486961	20.10	PPBV		99
60) TOLUENE	14.51	92	645665	19.61	PPBV		98
61) trans-1,3-DICHLOROPROPENE	14.02	75	452887	20.75	PPBV		100
62) 1,1,2-TRICHLOROETHANE	14.21	83	302536	20.39	PPBV		100
64) 2-HEXANONE	14.76	58	277673	18.82	PPBV		99
65) TETRACHLOROETHYLENE	15.72	164	431615	16.71	PPBV		99
66) DIBROMOCHLOROMETHANE	14.97	129	605929	18.83	PPBV		100
67) 1,2-DIBROMOETHANE	15.23	107	508142	18.76	PPBV		99
68) OCTANE	15.50	43	592569	18.63	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.42	131	432545	19.06	PPBV	#	100
70) CHLOROBENZENE	16.45	112	710396	17.59	PPBV		99
71) ETHYLBENZENE	16.84	91	1179067	17.24	PPBV		98
72) m,p-XYLENE	17.03	106	916460	34.85	PPBV		94
73) o-XYLENE	17.55	106	440548	17.95	PPBV		96
74) STYRENE	17.43	104	664370	20.19	PPBV		99
75) NONANE	17.73	43	544875	20.22	PPBV		96
76) BROMOFORM	17.16	173	508596	20.39	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	489871	18.19	PPBV		99
79) ISOPROPYLBENZENE	18.17	105	1146668	18.29	PPBV		97
80) 2-CHLOROTOLUENE	18.70	126	282918	20.45	PPBV	#	87
81) n-PROPYLBENZENE	18.72	120	314668	21.94	PPBV		83
82) 4-ETHYLTOLUENE	18.88	105	957307	21.76	PPBV		97
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	776570	20.74	PPBV		97
84) TERT-BUTYLBENZENE	19.41	134	220199	21.32	PPBV		93
85) 1,2,4-TRIMETHYLBENZENE	19.41	105	676419	21.75	PPBV		99
86) m-DICHLOROBENZENE	19.60	146	411348	21.09	PPBV		99
87) BENZYL CHLORIDE	19.57	91	372488	22.41	PPBV		99
88) p-DICHLOROBENZENE	19.67	146	369922	22.06	PPBV		99
89) SEC-BUTYLBENZENE	19.71	134	230095	22.06	PPBV		91
90) p-ISOPROPYLTOLUENE	19.87	134	213395	23.02	PPBV		96
91) o-DICHLOROBENZENE	20.05	146	330796	21.26	PPBV		99
92) n-BUTYLBENZENE	20.33	134	138111	24.24	PPBV		96
93) HEXACHLOROBUTADIENE	22.41	225	61467	14.94	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25648.D Vial: 10
Acq On : 22 Sep 2009 9:55 pm Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:16 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	46278	16.54	PPBV	99

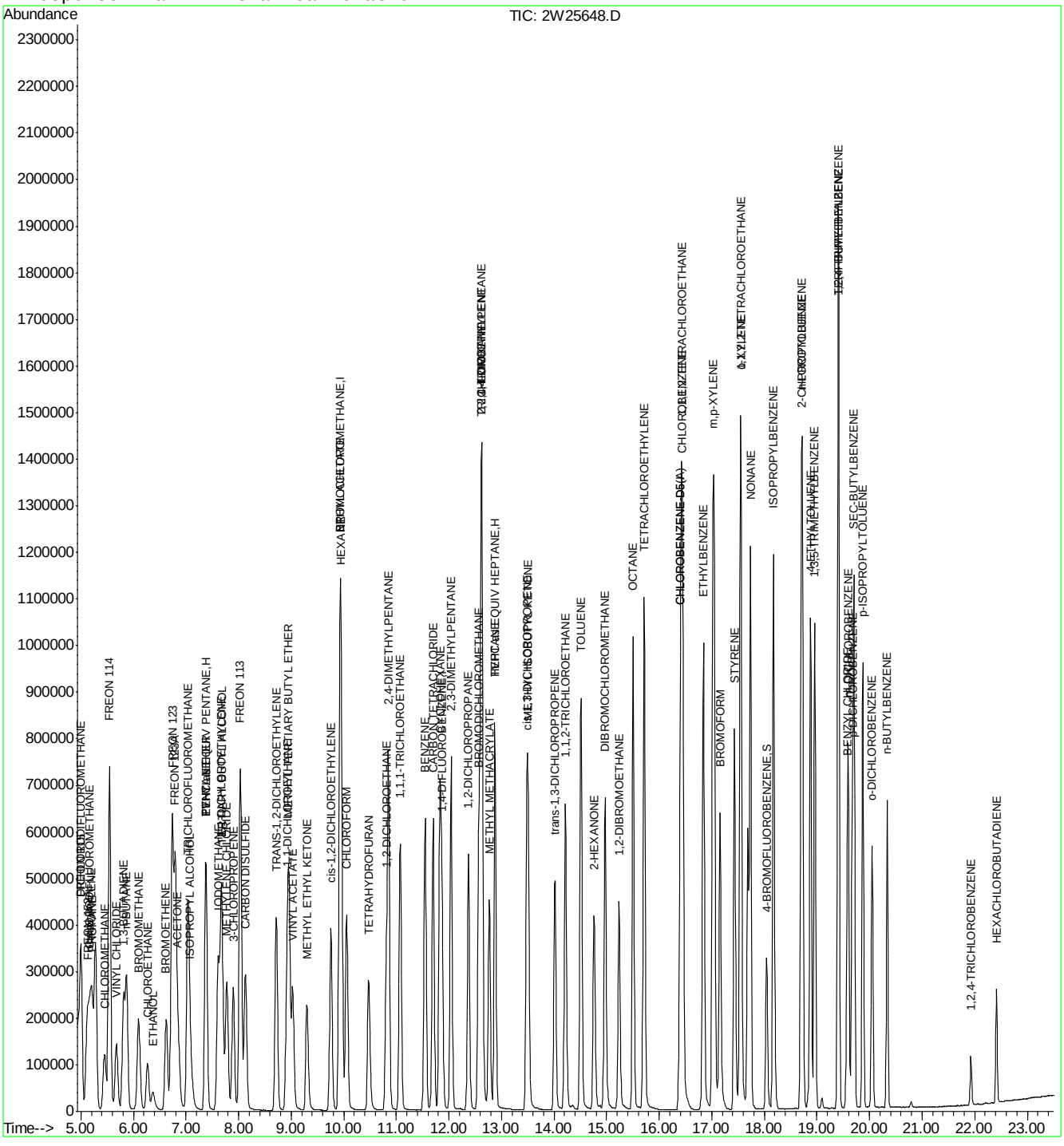
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25648.D Vial: 10
Acq On : 22 Sep 2009 9:55 pm Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:52 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

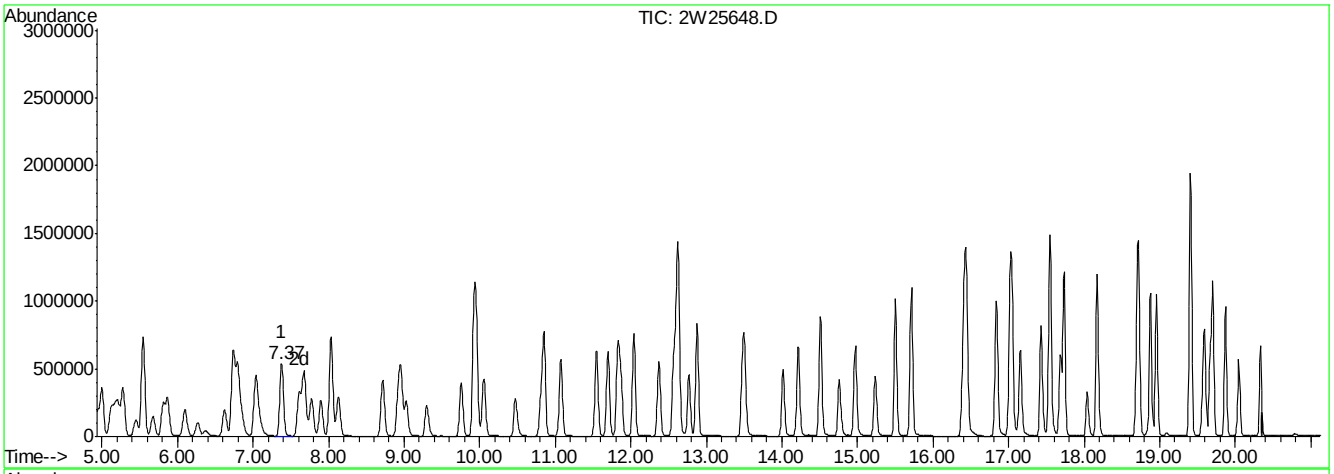


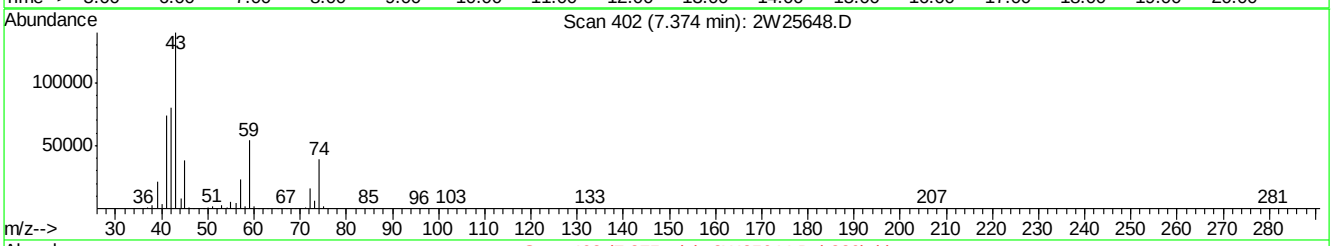
ACCUTEST Laboratories JA28238

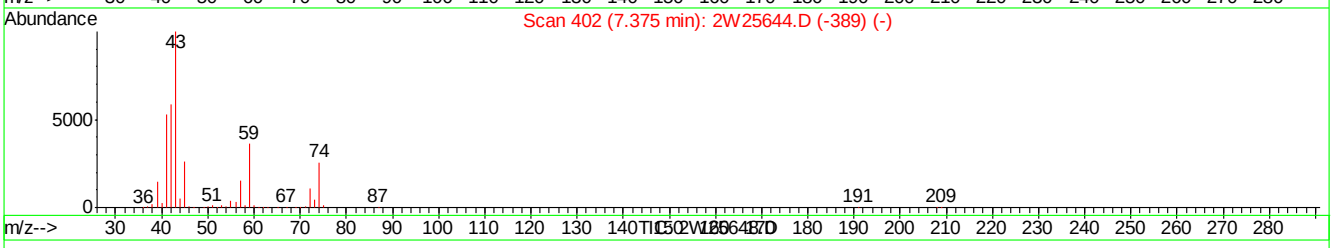
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25648.D Vial: 10
Acq On : 22 Sep 2009 9:55 pm Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:52 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.37min 19.12PPBV m

response 1819633

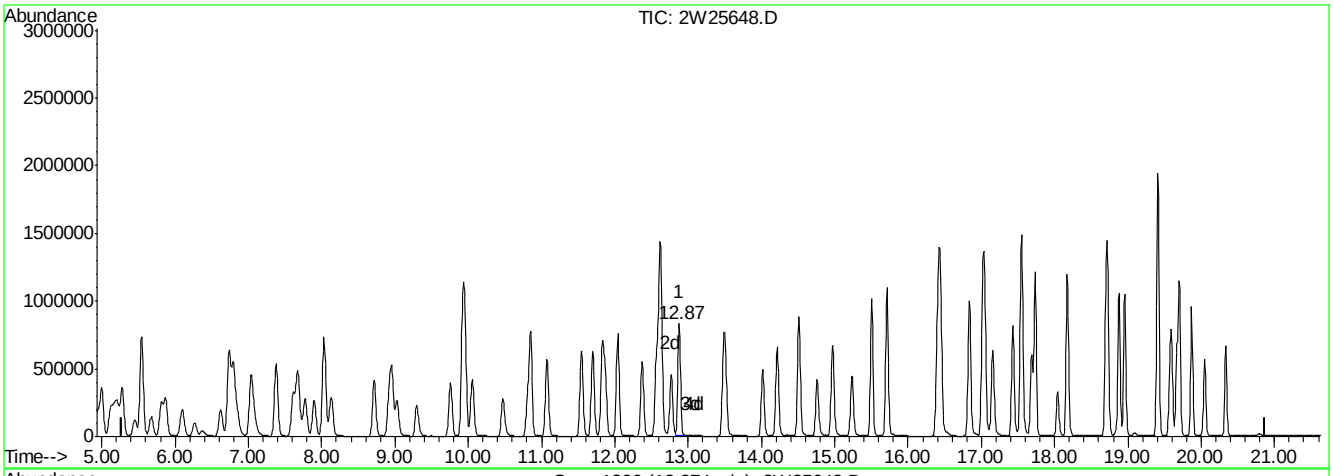
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

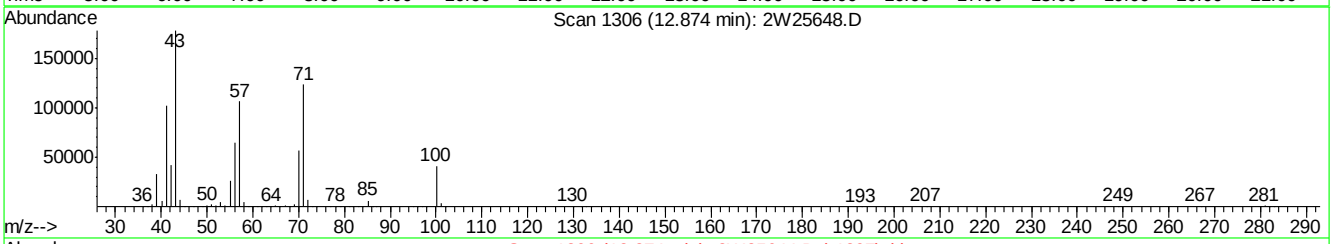
2W25648.D M2W1080.M Fri Sep 25 12:38:10 2009 MS2W

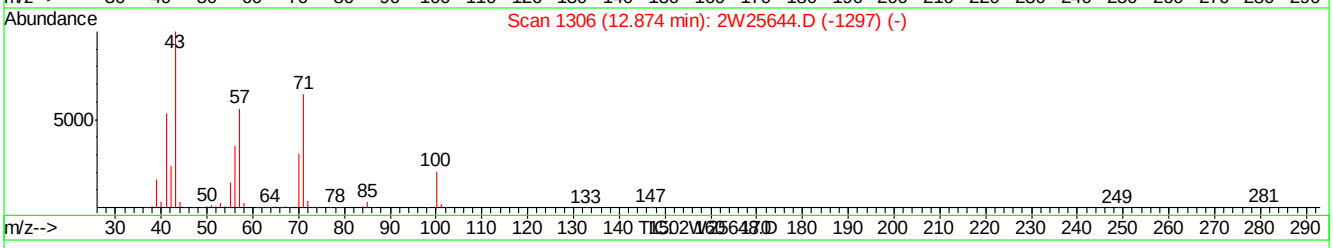
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25648.D Vial: 10
Acq On : 22 Sep 2009 9:55 pm Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:52 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.87min 19.73PPBV m

response 2125993

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25648.D M2W1080.M Fri Sep 25 12:38:14 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25650.D Vial: 12
Acq On : 22 Sep 2009 11:22 pm Operator: YOUMINH
Sample : IC1080-0.1 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:21 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	129882	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	592824	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	237894	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	237894	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	109884	4.47	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 89.40%

Target Compounds						Qvalue
4) FREON 152A	5.12	65	1193	0.10	PPBV #	51
6) PROPYLENE	5.20	41	2080	0.12	PPBV	92
8) FREON 114	5.55	85	5302	0.11	PPBV	97
10) VINYL CHLORIDE	5.68	62	2068	0.10	PPBV #	50
11) 1,3-BUTADIENE	5.82	54	1605	0.11	PPBV	87
13) BROMOMETHANE	6.12	94	1752	0.10	PPBV #	72
14) CHLOROETHANE	6.29	64	1008	0.09	PPBV #	46
15) FREON 123	6.74	83	3929	0.10	PPBV #	67
16) FREON 123A	6.80	117	2196	0.10	PPBV #	82
17) TRICHLOROFLUOROMETHANE	7.03	101	3935	0.10	PPBV #	92
23) IODOMETHANE	7.61	142	4208	0.10	PPBV	95
24) 1,1-DICHLOROETHYLENE	7.67	96	1982	0.12	PPBV #	61
25) CARBON DISULFIDE	8.13	76	5363	0.10	PPBV #	72
27) BROMOETHENE	6.63	106	1624	0.10	PPBV #	92
30) FREON 113	8.04	151	2631	0.10	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	2328	0.12	PPBV #	68
32) TERTIARY BUTYL ALCOHOL	7.79	59	2990	0.12	PPBV #	61
33) METHYL TERTIARY BUTYL ETHE	9.03	73	4140	0.10	PPBV #	53
34) TETRAHYDROFURAN	10.56	42	1496	0.09	PPBV #	32
35) HEXANE	9.95	57	2162	0.09	PPBV	90
37) 1,1-DICHLOROETHANE	8.93	63	2943	0.09	PPBV #	49
39) cis-1,2-DICHLOROETHYLENE	9.75	96	2231	0.12	PPBV #	72
41) CHLOROFORM	10.04	83	2920	0.09	PPBV	92
42) 2,4-DIMETHYLPENTANE	10.84	57	2485	0.09	PPBV #	79
43) 1,1,1-TRICHLOROETHANE	11.07	97	3097	0.09	PPBV	97
44) CARBON TETRACHLORIDE	11.69	117	3196	0.09	PPBV #	86
45) 1,2-DICHLOROETHANE	10.81	62	1968	0.10	PPBV #	49
47) BENZENE	11.55	78	5472	0.10	PPBV #	82
48) CYCLOHEXANE	11.82	84	2621	0.11	PPBV #	3
50) TRICHLOROETHYLENE	12.59	95	2099	0.10	PPBV	98
51) 1,2-DICHLOROPROPANE	12.38	63	2264	0.11	PPBV #	40
52) BROMODICHLOROMETHANE	12.56	83	2886	0.09	PPBV #	95
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	6494	0.10	PPBV #	93
54) 1,4-DIOXANE	12.72	88	1455	0.16	PPBV #	1
55) METHYL METHACRYLATE	12.78	69	1272	0.09	PPBV #	73
56) HEPTANE	12.87	43	2397	0.09	PPBV	93
59) cis-1,3-DICHLOROPROPENE	13.48	75	2424	0.09	PPBV #	73
60) TOLUENE	14.51	92	3356	0.09	PPBV #	92
61) trans-1,3-DICHLOROPROPENE	14.02	75	2170	0.09	PPBV #	38
62) 1,1,2-TRICHLOROETHANE	14.21	83	1435	0.09	PPBV #	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25650.D Vial: 12
Acq On : 22 Sep 2009 11:22 pm Operator: YOUMINH
Sample : IC1080-0.1 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:21 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

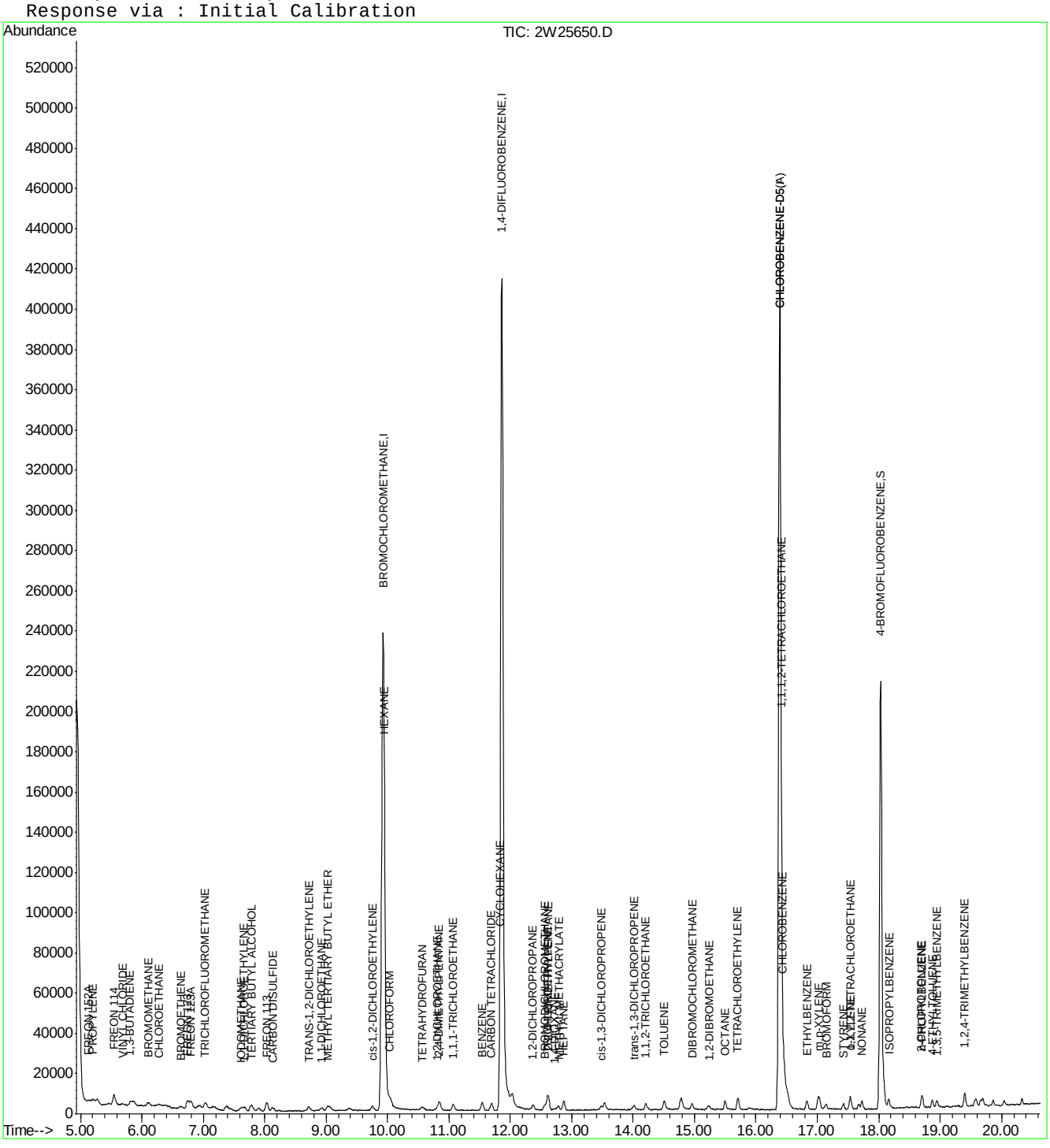
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
65)	TETRACHLOROETHYLENE	15.70	164	2187	0.10	PPBV		97
66)	DIBROMOCHLOROMETHANE	14.95	129	2491	0.09	PPBV	#	87
67)	1,2-DIBROMOETHANE	15.23	107	2304	0.10	PPBV	#	99
68)	OCTANE	15.50	43	2484	0.10	PPBV	#	66
69)	1,1,1,2-TETRACHLOROETHANE	16.42	131	1762	0.09	PPBV	#	81
70)	CHLOROBENZENE	16.45	112	3819	0.12	PPBV		98
71)	ETHYLBENZENE	16.83	91	5659	0.10	PPBV	#	90
72)	m,p-XYLENE	17.02	106	4415	0.20	PPBV		98
73)	o-XYLENE	17.54	106	1946	0.10	PPBV	#	80
74)	STYRENE	17.42	104	2231	0.08	PPBV	#	66
75)	NONANE	17.73	43	1966	0.09	PPBV	#	54
76)	BROMOFORM	17.14	173	1985	0.10	PPBV	#	36
78)	1,1,2,2-TETRACHLOROETHANE	17.53	83	2021	0.09	PPBV	#	95
79)	ISOPROPYLBENZENE	18.17	105	4888	0.10	PPBV	#	84
80)	2-CHLOROTOLUENE	18.69	126	1093	0.10	PPBV	#	93
81)	n-PROPYLBENZENE	18.71	120	1060	0.09	PPBV		74
82)	4-ETHYLTOLUENE	18.87	105	3292	0.09	PPBV	#	47
83)	1,3,5-TRIMETHYLBENZENE	18.95	105	2901	0.09	PPBV	#	91
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	2411	0.09	PPBV		96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25650.D Vial: 12
Acq On : 22 Sep 2009 11:22 pm Operator: YOUMINH
Sample : IC1080-0.1 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:54 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25651.D Vial: 12
Acq On : 23 Sep 2009 6:03 am Operator: YOUMINH
Sample : IC1080-0.04 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:23 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.97	128	142182	10.00	PPBV	0.05
46) 1,4-DIFLUOROBENZENE	11.89	114	650377	10.00	PPBV	0.03
63) CHLOROBENZENE-D5	16.40	82	278757	10.00	PPBV	0.01
95) CHLOROBENZENE-D5(A)	16.40	82	278225	10.00	PPBV	0.01

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.04	95	143273	4.98	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 99.60%

Target Compounds						Qvalue
8) FREON 114	5.60	85	2285	0.04	PPBV #	77
15) FREON 123	6.81	83	1812	0.04	PPBV #	70
17) TRICHLOROFLUOROMETHANE	7.11	101	1996	0.05	PPBV #	96
23) IODOMETHANE	7.67	142	2003	0.04	PPBV #	38
25) CARBON DISULFIDE	8.18	76	2698	0.05	PPBV #	72
30) FREON 113	8.09	151	1233	0.04	PPBV #	61
33) METHYL TERTIARY BUTYL ETHE	9.11	73	1681	0.04	PPBV #	53
35) HEXANE	10.01	57	1136	0.04	PPBV #	12
41) CHLOROFORM	10.09	83	1458	0.04	PPBV #	26
42) 2,4-DIMETHYLPENTANE	10.89	57	1194	0.04	PPBV #	31
44) CARBON TETRACHLORIDE	11.72	117	1456	0.04	PPBV #	83
47) BENZENE	11.58	78	2898	0.05	PPBV #	56
48) CYCLOHEXANE	11.85	84	1488	0.05	PPBV #	3
50) TRICHLOROETHYLENE	12.63	95	1148	0.05	PPBV #	77
52) BROMODICHLOROMETHANE	12.59	83	1472	0.04	PPBV #	25
53) 2,2,4-TRIMETHYLPENTANE	12.66	57	3284	0.04	PPBV #	94
56) HEPTANE	12.89	43	1332	0.05	PPBV #	21
58) METHYL ISOBUTYL KETONE	13.59	43	1590	0.05	PPBV #	44
59) cis-1,3-DICHLOROPROPENE	13.51	75	1261	0.04	PPBV #	31
60) TOLUENE	14.52	92	1886	0.05	PPBV #	96
61) trans-1,3-DICHLOROPROPENE	14.03	75	1279	0.05	PPBV #	38
65) TETRACHLOROETHYLENE	15.72	164	1273	0.05	PPBV #	42
66) DIBROMOCHLOROMETHANE	14.98	129	1346	0.04	PPBV #	86
68) OCTANE	15.52	43	1288	0.04	PPBV #	29
71) ETHYLBENZENE	16.85	91	3461	0.05	PPBV #	90
72) m,p-XYLENE	17.04	106	2692	0.11	PPBV	89
73) o-XYLENE	17.55	106	1168	0.05	PPBV #	83
74) STYRENE	17.43	104	1840	0.06	PPBV #	33
75) NONANE	17.73	43	1056	0.04	PPBV #	54

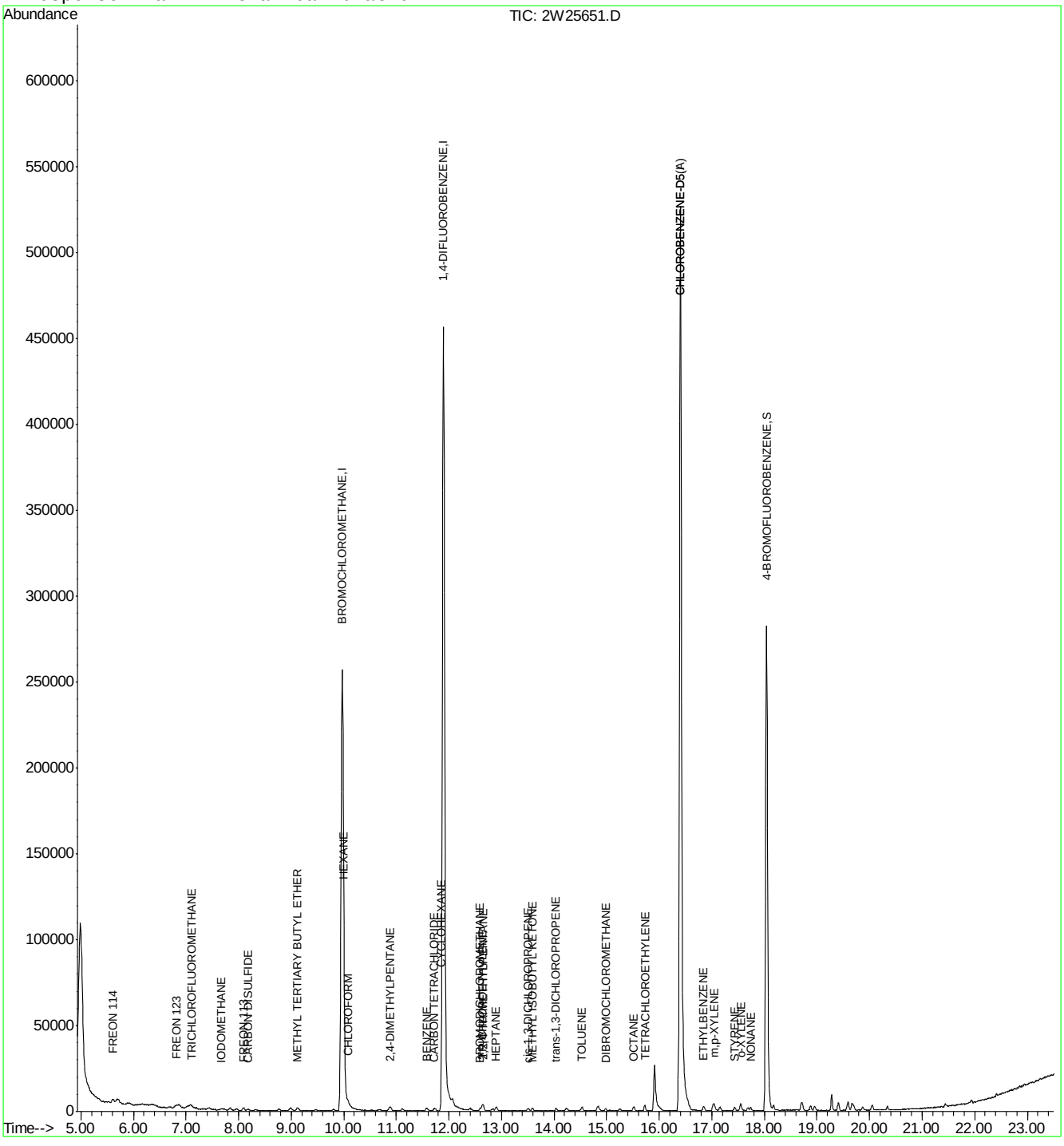
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25651.D Vial: 12
Acq On : 23 Sep 2009 6:03 am Operator: YOUMINH
Sample : IC1080-0.04 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:55 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25652.D Vial: 14
Acq On : 23 Sep 2009 7:31 am Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:29:45 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	126120	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	561692	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	234439	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	234611	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.03	95	109334	4.53	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 90.60%			
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	33096	4.06	PPBV	100

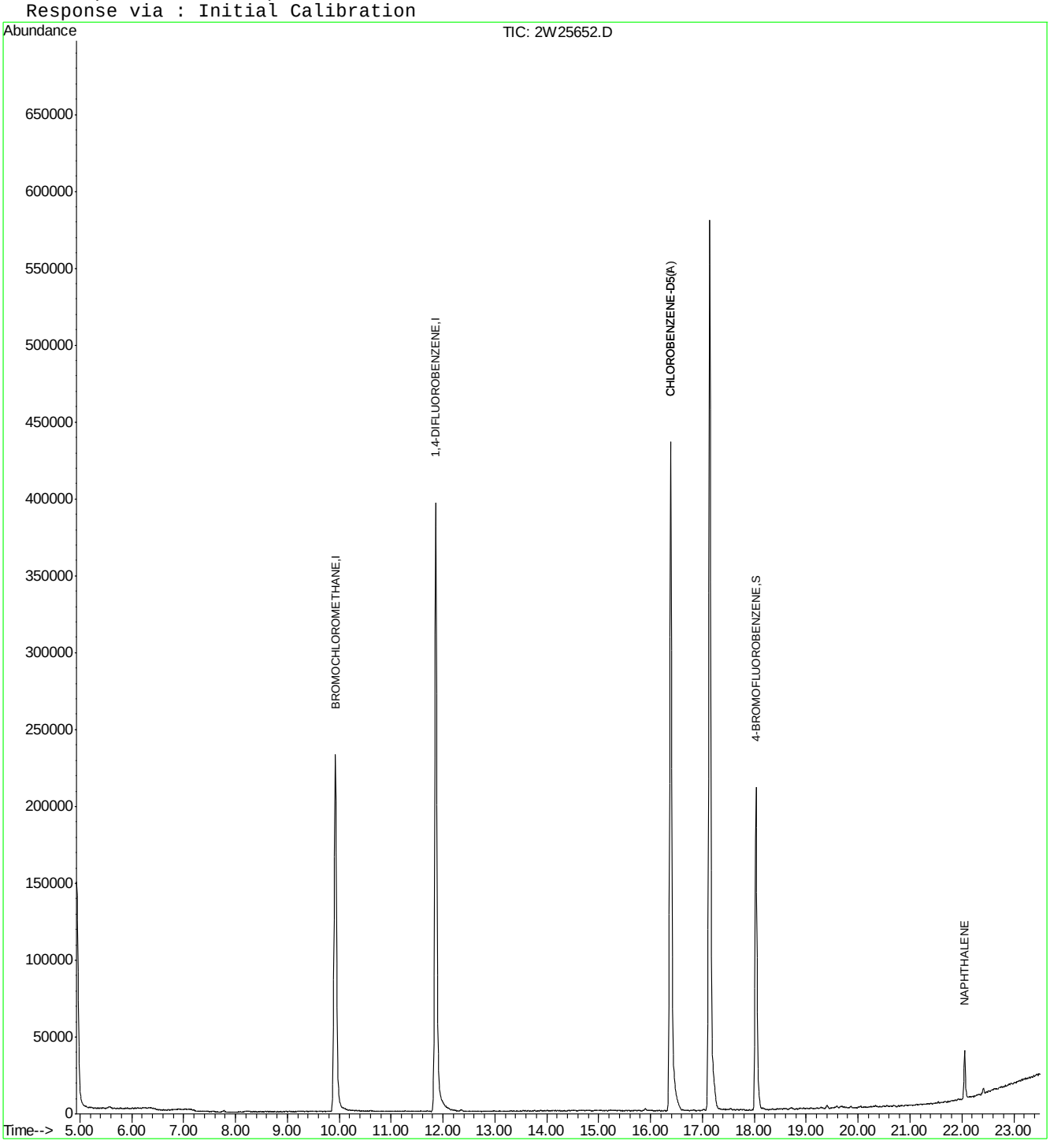
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25652.D Vial: 14
Acq On : 23 Sep 2009 7:31 am Operator: YOUMINH
Sample : IC1080-5.0 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:30 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25653.D Vial: 14
Acq On : 23 Sep 2009 8:14 am Operator: YOUMINH
Sample : IC1080-10 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:29:49 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	120679	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	537863	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	231619	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	231773	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	110657	4.64	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 92.80%

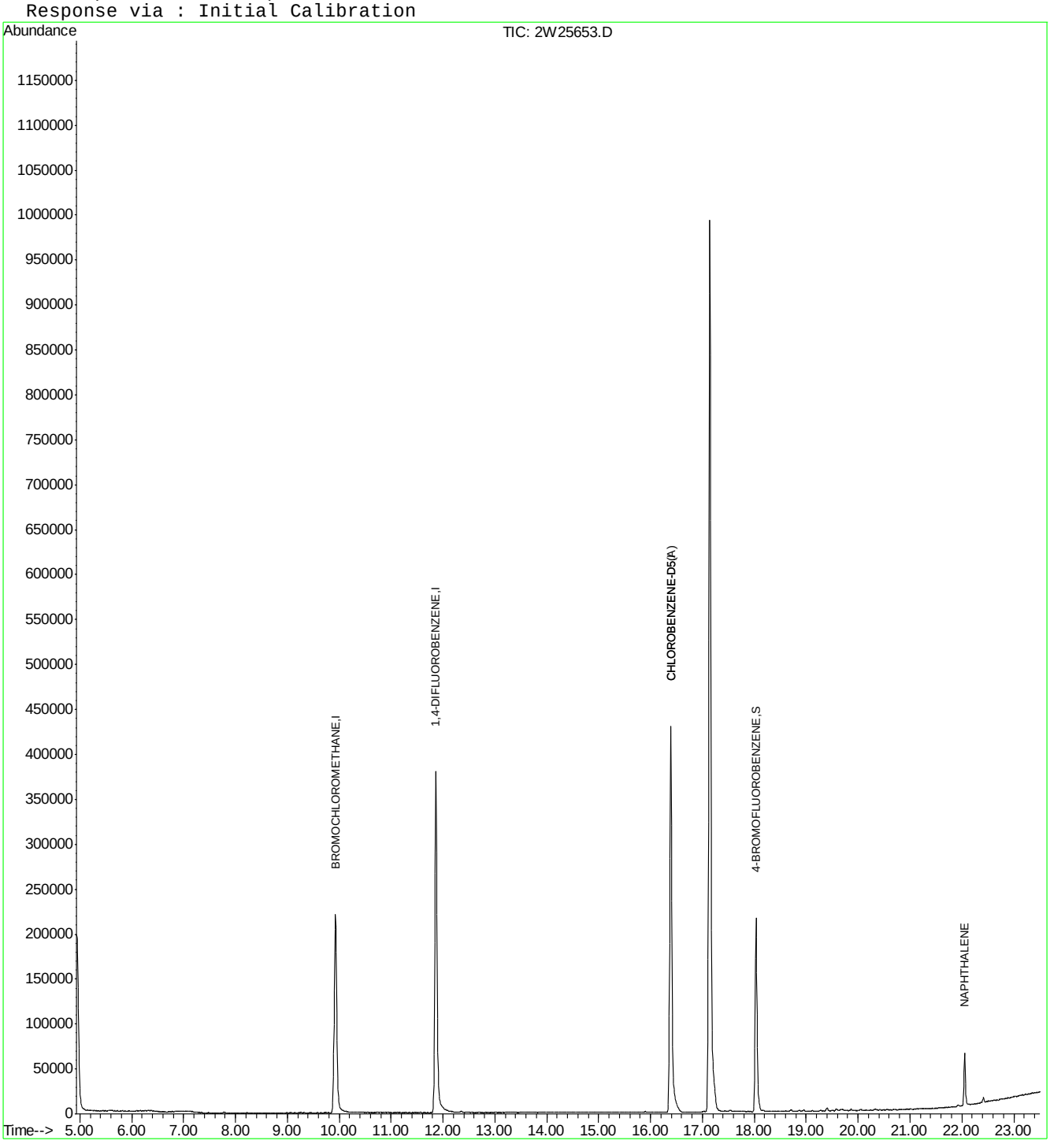
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	61315	7.61	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25653.D Vial: 14
Acq On : 23 Sep 2009 8:14 am Operator: YOUMINH
Sample : IC1080-10 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:30 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25654.D Vial: 10
Acq On : 23 Sep 2009 8:58 am Operator: YOUMINH
Sample : IC1080-40 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:31 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.94	128	107331	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.88	114	511073	10.00	PPBV	0.02
63) CHLOROBENZENE-D5	16.41	82	287877	10.00	PPBV	0.02
95) CHLOROBENZENE-D5(A)	16.41	82	287825	10.00	PPBV	0.02

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	154125	5.18	PPBV	0.02

Spiked Amount 5.000 Range 65 - 128 Recovery = 103.60%

Target Compounds						Qvalue
2) FREON 115	5.00	119	364020	31.68	PPBV	97
3) DICHLORODIFLUOROMETHANE	5.00	85	503201	31.61	PPBV	99
4) FREON 152A	5.12	65	333227	34.70	PPBV	98
5) CHLORODIFLUOROMETHANE	5.16	67	129628	35.45	PPBV	100
6) PROPYLENE	5.20	41	408120	29.41	PPBV	96
7) PROPANE	5.23	43	148352	28.27	PPBV #	100
8) FREON 114	5.54	85	1307777	31.77	PPBV	94
9) CHLOROMETHANE	5.45	52	171879	33.99	PPBV	98
10) VINYL CHLORIDE	5.67	62	563607	33.98	PPBV	99
11) 1,3-BUTADIENE	5.81	54	420081	33.68	PPBV	98
12) n-BUTANE	5.87	43	731632	29.97	PPBV	97
13) BROMOMETHANE	6.10	94	531945	36.49	PPBV	98
14) CHLOROETHANE	6.27	64	343365	37.98	PPBV	99
15) FREON 123	6.74	83	1180975	36.33	PPBV #	96
16) FREON 123A	6.80	117	701530	39.20	PPBV	92
17) TRICHLOROFLUOROMETHANE	7.03	101	1242757	37.41	PPBV	97
18) ISOPROPYL ALCOHOL	7.10	45	697788	33.28	PPBV	99
19) ACETONE	6.85	58	266480	35.76	PPBV	94
20) PENTANE	7.37	42	470157	32.12	PPBV	95
21) TVHC as EQUIV PENTANE	7.38	TIC	3198212m	36.47	PPBV	
22) ETHYL ETHER	7.37	74	251277	40.41	PPBV	94
23) IODOMETHANE	7.61	142	1332446	37.46	PPBV	95
24) 1,1-DICHLOROETHYLENE	7.67	96	480826	35.56	PPBV	96
25) CARBON DISULFIDE	8.13	76	1483138	34.44	PPBV	98
26) ETHANOL	6.38	45	193186	33.79	PPBV	99
27) BROMOETHENE	6.62	106	539972	38.92	PPBV	99
28) METHYLENE CHLORIDE	7.78	84	442159	35.21	PPBV	96
29) 3-CHLOROPROPENE	7.90	76	246115	39.88	PPBV #	91
30) FREON 113	8.03	151	836633	37.71	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.72	96	578889	35.92	PPBV	96
32) TERTIARY BUTYL ALCOHOL	7.71	59	261001	12.76	PPBV	95
33) METHYL TERTIARY BUTYL ETHE	8.96	73	1329415	39.91	PPBV	99
34) TETRAHYDROFURAN	10.48	42	578902	42.35	PPBV	94
35) HEXANE	9.97	57	681592	34.98	PPBV	99
36) VINYL ACETATE	9.04	86	133494	44.48	PPBV #	77
37) 1,1-DICHLOROETHANE	8.93	63	934992	36.31	PPBV	98
38) METHYL ETHYL KETONE	9.31	72	278432	44.62	PPBV #	91
39) cis-1,2-DICHLOROETHYLENE	9.76	96	588069	36.96	PPBV	96
40) ETHYL ACETATE	9.96	61	144795	39.15	PPBV #	69
41) CHLOROFORM	10.06	83	995608	37.98	PPBV	98

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25654.D Vial: 10
Acq On : 23 Sep 2009 8:58 am Operator: YOUMINH
Sample : IC1080-40 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:31 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.85	57	867262	37.91	PPBV		97
43) 1,1,1-TRICHLOROETHANE	11.08	97	1048034	38.49	PPBV		99
44) CARBON TETRACHLORIDE	11.71	117	1105087	39.00	PPBV		98
45) 1,2-DICHLOROETHANE	10.82	62	686766	40.38	PPBV		98
47) BENZENE	11.55	78	1635594	34.52	PPBV		98
48) CYCLOHEXANE	11.83	84	778011	36.59	PPBV		92
49) 2,3-DIMETHYLPENTANE	12.05	71	385332	40.70	PPBV		90
50) TRICHLOROETHYLENE	12.61	95	618343	33.36	PPBV		96
51) 1,2-DICHLOROPROPANE	12.38	63	620207	35.58	PPBV		96
52) BROMODICHLOROMETHANE	12.58	83	1044828	37.57	PPBV		97
53) 2,2,4-TRIMETHYLPENTANE	12.64	57	1715745	29.83	PPBV		97
54) 1,4-DIOXANE	12.64	88	313378	38.96	PPBV	#	40
55) METHYL METHACRYLATE	12.78	69	570537	46.45	PPBV		95
56) HEPTANE	12.89	43	809229	35.40	PPBV		91
57) TVHC as EQUIV HEPTANE	12.89	TIC	3874578m	38.26	PPBV		
58) METHYL ISOBUTYL KETONE	13.52	43	970712	38.65	PPBV		94
59) cis-1,3-DICHLOROPROPENE	13.49	75	908349	39.90	PPBV		98
60) TOLUENE	14.52	92	1171816	37.87	PPBV		94
61) trans-1,3-DICHLOROPROPENE	14.03	75	861493	42.01	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.23	83	559214	40.11	PPBV		98
64) 2-HEXANONE	14.78	58	530785	36.24	PPBV		96
65) TETRACHLOROETHYLENE	15.72	164	796542	31.06	PPBV		97
66) DIBROMOCHLOROMETHANE	14.98	129	1143774	35.80	PPBV		99
67) 1,2-DIBROMOETHANE	15.25	107	972572	36.18	PPBV		98
68) OCTANE	15.51	43	1004338	31.81	PPBV	#	88
69) 1,1,1,2-TETRACHLOROETHANE	16.43	131	803049	35.64	PPBV	#	100
70) CHLOROBENZENE	16.46	112	1267074	31.61	PPBV		99
71) ETHYLBENZENE	16.85	91	2064763	30.41	PPBV		94
72) m,p-XYLENE	17.05	106	1625967	62.28	PPBV		84
73) o-XYLENE	17.56	106	780939	32.05	PPBV		91
74) STYRENE	17.44	104	1251635	38.32	PPBV		97
75) NONANE	17.74	43	871383	32.58	PPBV		90
76) BROMOFORM	17.18	173	990283	39.99	PPBV		97
78) 1,1,2,2-TETRACHLOROETHANE	17.56	83	830263	31.05	PPBV		97
79) ISOPROPYLBENZENE	18.18	105	1981067	31.83	PPBV		92
80) 2-CHLOROTOLUENE	18.71	126	534049	38.89	PPBV	#	61
81) n-PROPYLBENZENE	18.73	120	592296	41.59	PPBV	#	56
82) 4-ETHYLTOLUENE	18.88	105	1645337	37.68	PPBV		90
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	1396368	37.56	PPBV		93
84) TERT-BUTYLBENZENE	19.41	134	400091	39.03	PPBV		83
85) 1,2,4-TRIMETHYLBENZENE	19.42	105	1153785	37.37	PPBV		97
86) m-DICHLOROBENZENE	19.60	146	817772	42.23	PPBV		97
87) BENZYL CHLORIDE	19.58	91	804467	48.76	PPBV		97
88) p-DICHLOROBENZENE	19.68	146	755775	45.40	PPBV		96
89) SEC-BUTYLBENZENE	19.71	134	459499	44.38	PPBV		71
90) p-ISOPROPYLTOLUENE	19.88	134	440540	47.87	PPBV		85
91) o-DICHLOROBENZENE	20.05	146	679022	43.96	PPBV		98
92) n-BUTYLBENZENE	20.34	134	304032	53.75	PPBV		86
93) HEXACHLOROBUTADIENE	22.41	225	119106	29.17	PPBV		98

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25654.D Vial: 10
Acq On : 23 Sep 2009 8:58 am Operator: YOUMINH
Sample : IC1080-40 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:43:31 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Sep 24 15:32:07 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	101809	36.65	PPBV	100

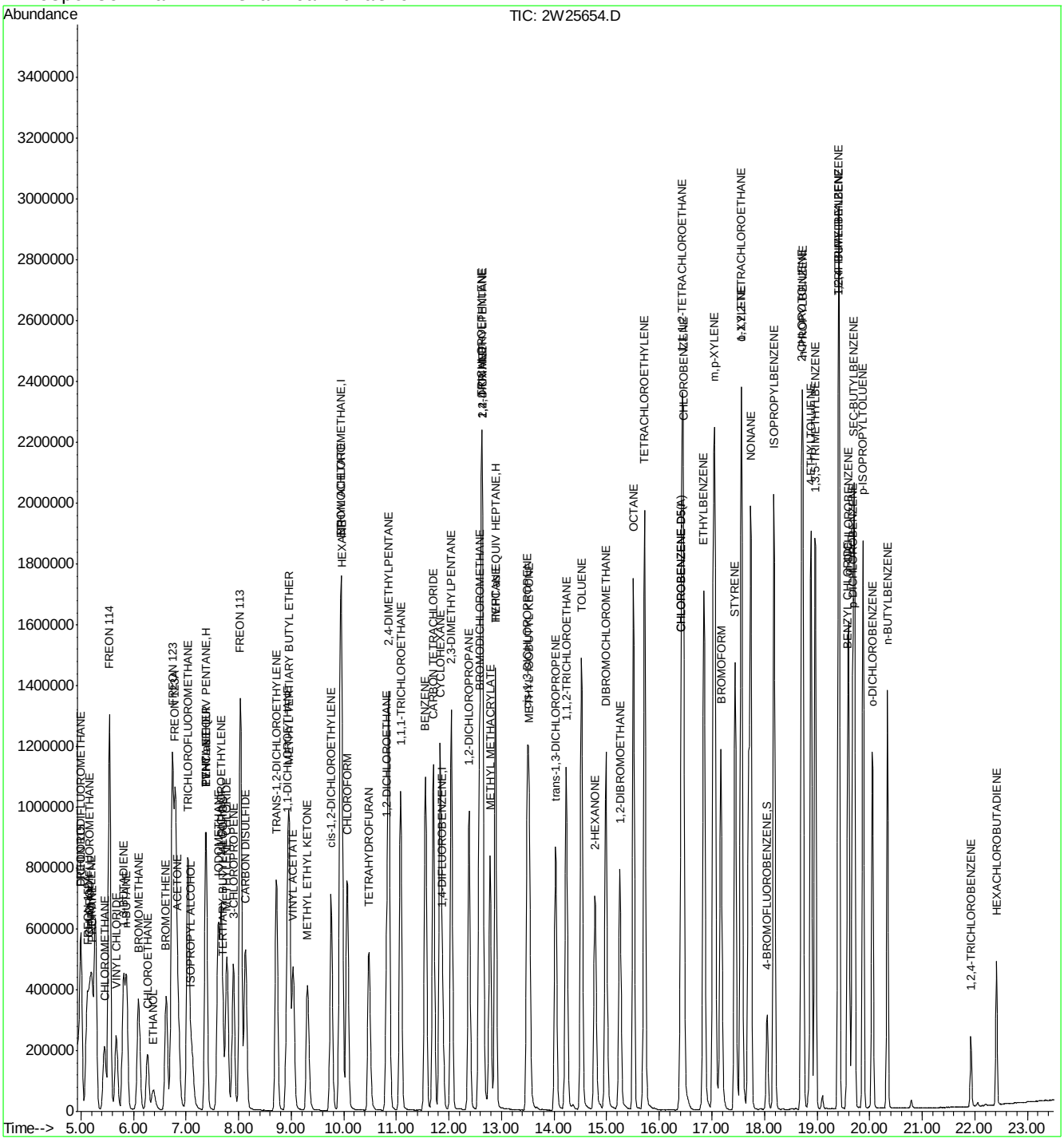
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25654.D Vial: 10
Acq On : 23 Sep 2009 8:58 am Operator: YOUMINH
Sample : IC1080-40 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:56 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

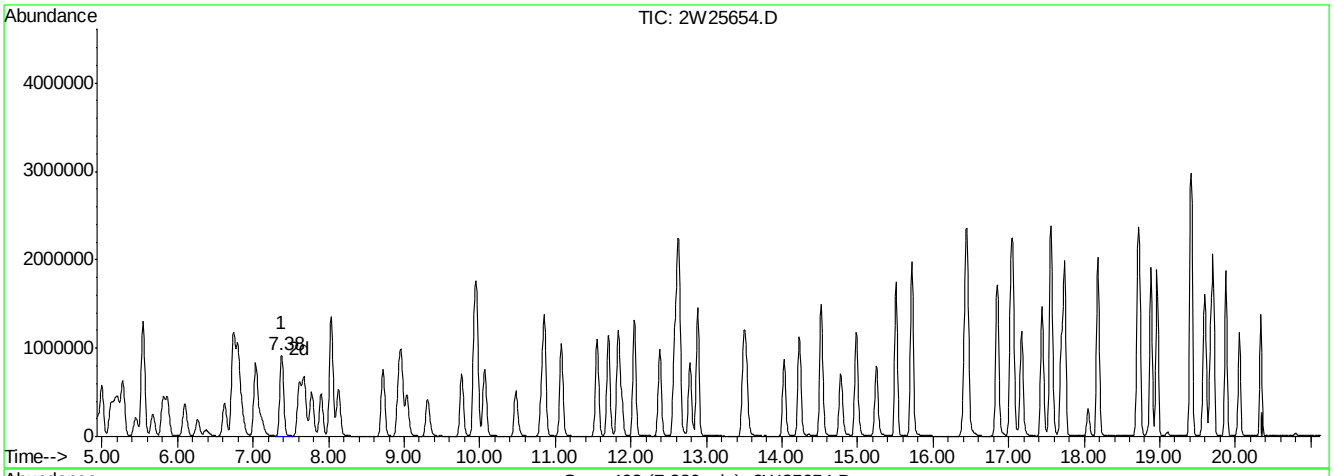


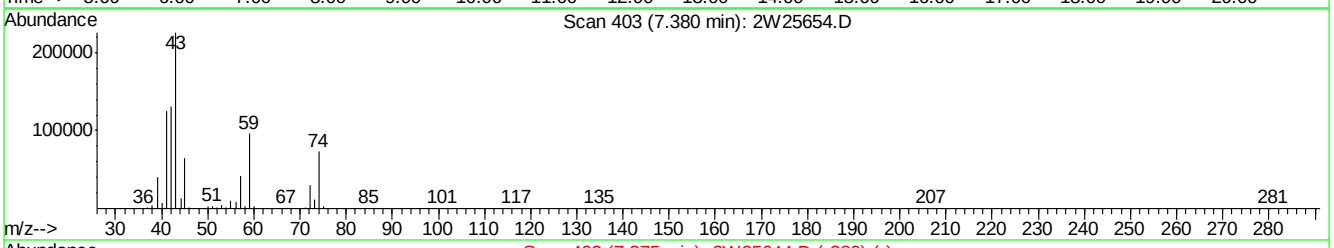
ACCUTEST Laboratories JA28238

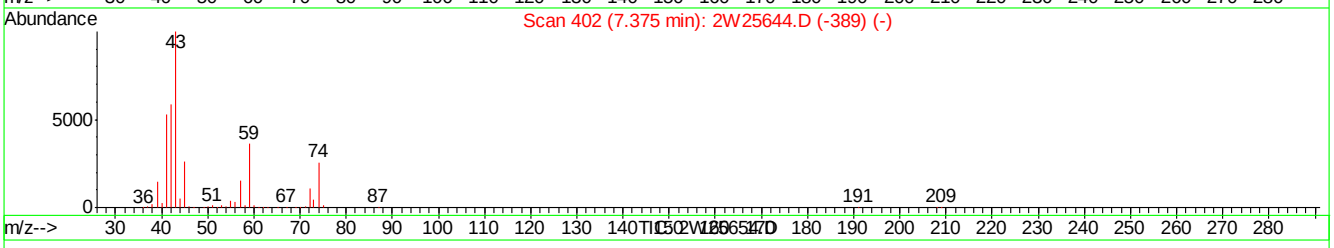
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25654.D Vial: 10
Acq On : 23 Sep 2009 8:58 am Operator: YOUMINH
Sample : IC1080-40 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.38min 36.47PPBV m

response 3198212

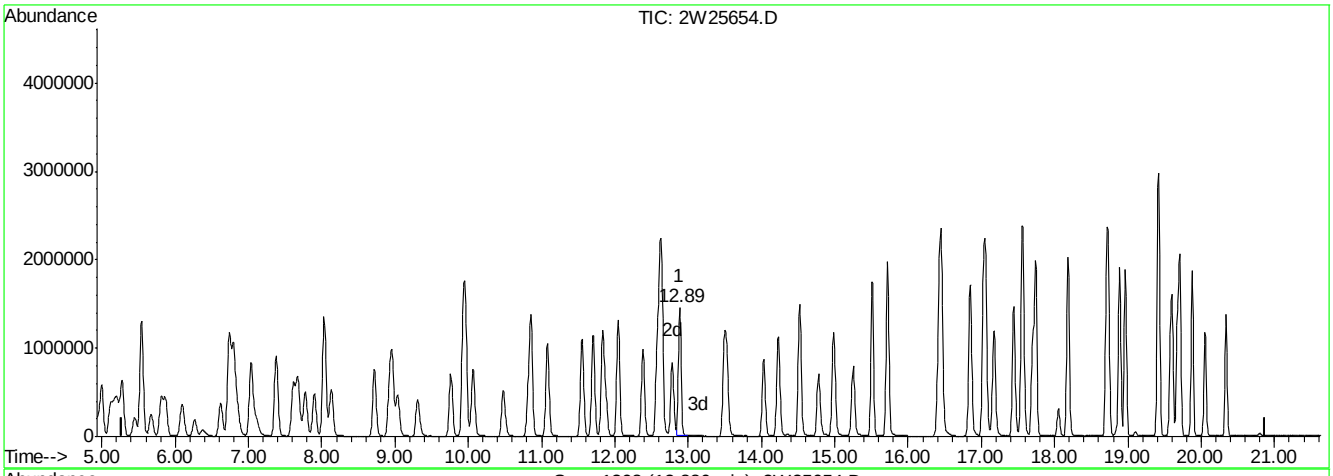
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.04#
0.00	0.00	0.04#
0.00	0.00	0.00

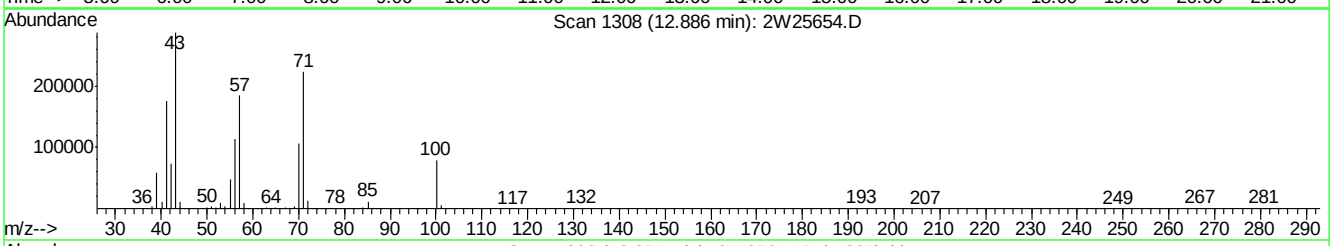
2W25654.D M2W1080.M Fri Sep 25 12:38:24 2009 MS2W

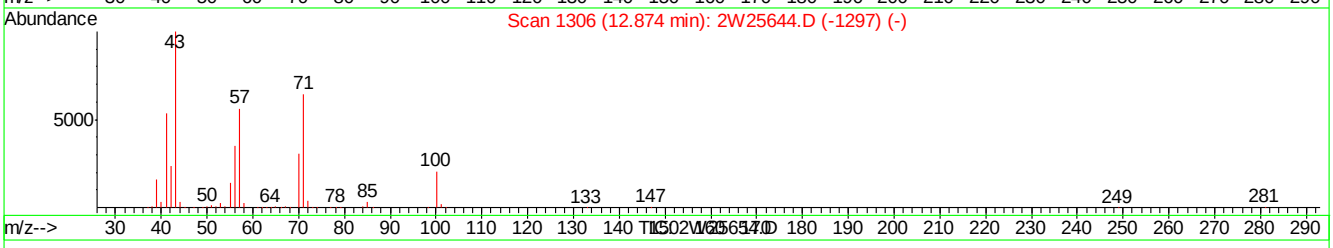
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25654.D Vial: 10
Acq On : 23 Sep 2009 8:58 am Operator: YOUMINH
Sample : IC1080-40 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 11:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 38.26PPBV m

response 3874578

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.04#
0.00	0.00	0.03#
0.00	0.00	0.00

2W25654.D M2W1080.M Fri Sep 25 12:38:27 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25655.D Vial: 15
Acq On : 23 Sep 2009 9:41 am Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:29:55 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

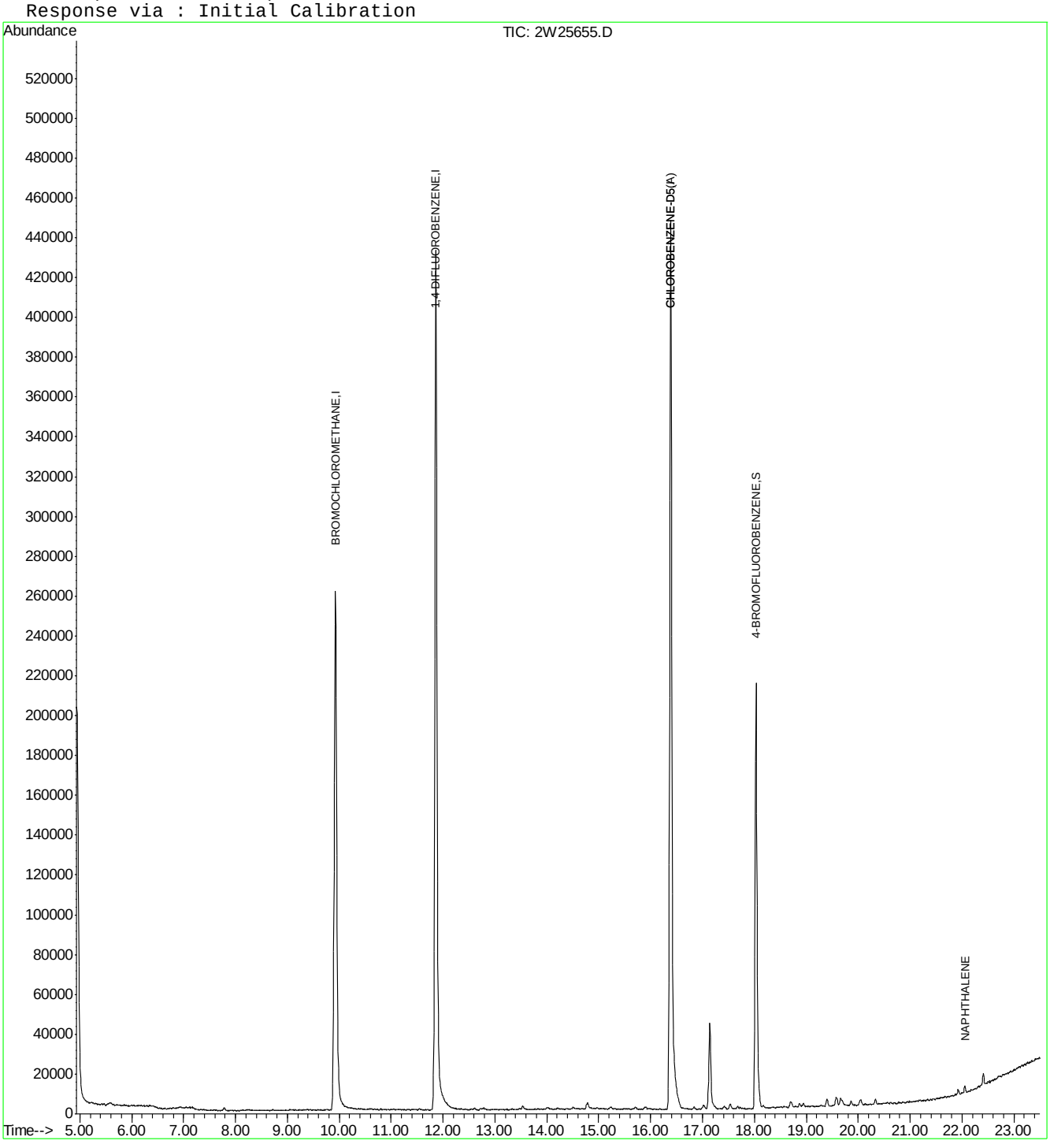
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	141969	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	620031	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	242690	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	242884	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.03	95	112602	4.50	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 90.00%			
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	3978	0.47	PPBV #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25655.D Vial: 15
Acq On : 23 Sep 2009 9:41 am Operator: YOUMINH
Sample : IC1080-0.5 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:30 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25656.D Vial: 15
Acq On : 23 Sep 2009 10:25 am Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:30:02 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	124288	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	558357	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	224474	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	224474	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	102894	4.45	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 89.00%

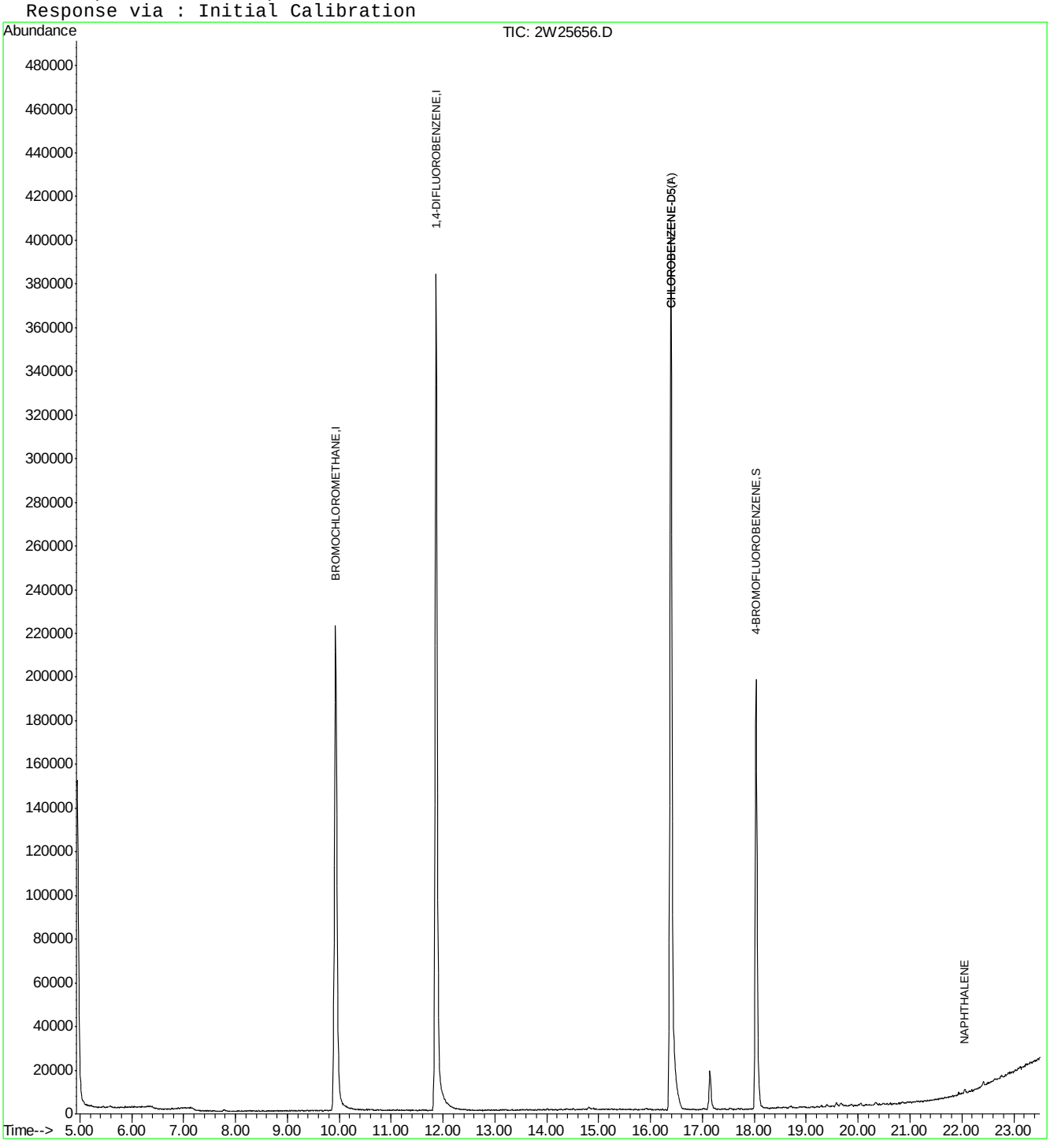
Target Compounds						Qvalue
96) NAPHTHALENE	22.06	128	2365	0.30	PPBV #	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25656.D Vial: 15
Acq On : 23 Sep 2009 10:25 am Operator: YOUMINH
Sample : IC1080-0.2 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:31 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25657.D Vial: 14
Acq On : 23 Sep 2009 11:52 am Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:30:07 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	121041	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	541166	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	227436	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	227436	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	108863	4.65	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 93.00%

Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	153873	19.45	PPBV	100

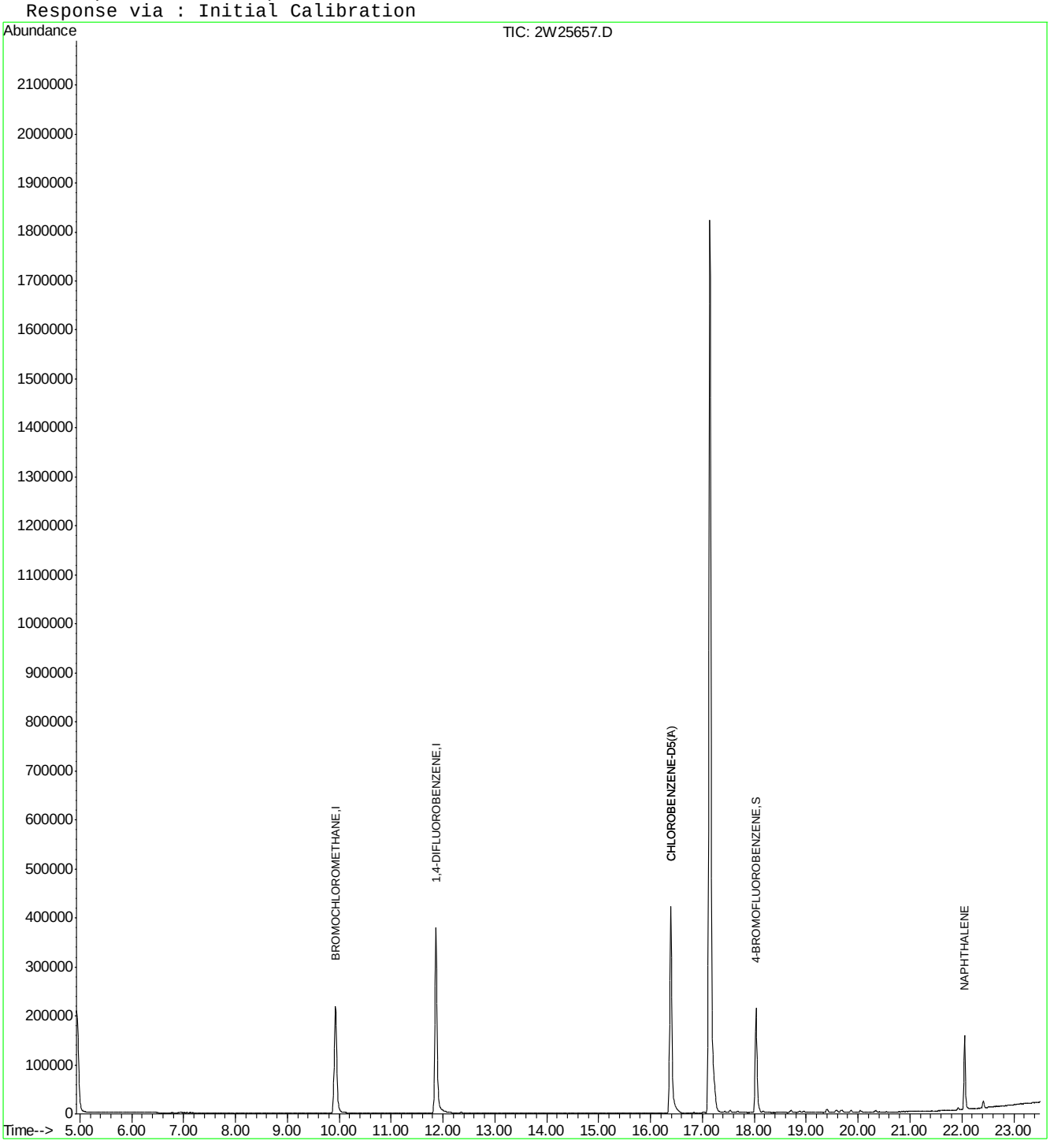
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25657.D Vial: 14
Acq On : 23 Sep 2009 11:52 am Operator: YOUMINH
Sample : IC1080-20 Inst : MS2W
Misc : MS49009,V2W1080,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:31 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1081\2W25662.D Vial: 3
Acq On : 24 Sep 2009 4:33 pm Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1081,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:38:38 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	116397	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.86	114	530288	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.39	82	271608	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.39	82	271608	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	151574	5.42	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 108.40%

Target Compounds						Qvalue
2) FREON 115	5.00	119	94815	7.51	PPBV	100
3) DICHLORODIFLUOROMETHANE	5.00	85	133944	7.64	PPBV	99
4) FREON 152A	5.12	65	104159	10.19	PPBV	99
5) CHLORODIFLUOROMETHANE	5.16	67	39333	10.11	PPBV	99
6) PROPYLENE	5.20	41	138610	9.07	PPBV	98
7) PROPANE	5.23	43	48616	8.70	PPBV #	100
8) FREON 114	5.54	85	447933	10.17	PPBV	98
9) CHLOROMETHANE	5.45	52	56484	10.41	PPBV	94
10) VINYL CHLORIDE	5.67	62	191683	10.81	PPBV	100
11) 1,3-BUTADIENE	5.81	54	143715	10.73	PPBV	99
12) n-BUTANE	5.87	43	279546	10.54	PPBV	100
13) BROMOMETHANE	6.10	94	162783	10.53	PPBV	99
14) CHLOROETHANE	6.27	64	106265	11.05	PPBV	99
15) FREON 123	6.74	83	368096	10.59	PPBV #	100
16) FREON 123A	6.80	117	197017	10.33	PPBV	97
17) TRICHLOROFLUOROMETHANE	7.03	101	372708	10.47	PPBV	100
18) ISOPROPYL ALCOHOL	7.07	45	234193	10.37	PPBV	100
19) ACETONE	6.85	58	72346	9.06	PPBV	98
20) PENTANE	7.37	42	160645	10.20	PPBV	99
21) TVHC as EQUIV PENTANE	7.37	TIC	1033239m	10.58	PPBV	
22) ETHYL ETHER	7.38	74	71482	10.77	PPBV	100
23) IODOMETHANE	7.61	142	404593	10.64	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.67	96	144606	9.96	PPBV	100
25) CARBON DISULFIDE	8.13	76	472830	10.22	PPBV	99
26) ETHANOL	6.37	45	53106	9.76	PPBV	98
27) BROMOETHENE	6.62	106	157742	10.77	PPBV	99
28) METHYLENE CHLORIDE	7.78	84	133847	9.95	PPBV	99
29) 3-CHLOROPROPENE	7.90	76	72997	11.12	PPBV	95
30) FREON 113	8.03	151	243606	10.24	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.71	96	174137	10.10	PPBV	99
32) TERTIARY BUTYL ALCOHOL	7.67	59	255636	10.40	PPBV	100
33) METHYL TERTIARY BUTYL ETHE	8.96	73	369137	10.26	PPBV	100
34) TETRAHYDROFURAN	10.47	42	155634	10.55	PPBV	98
35) HEXANE	9.95	57	233929	11.13	PPBV	98
36) VINYL ACETATE	9.02	86	35298	11.00	PPBV	98
37) 1,1-DICHLOROETHANE	8.92	63	301460	10.90	PPBV	100
38) METHYL ETHYL KETONE	9.29	72	70873	10.57	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	9.75	96	174104	10.22	PPBV	100
40) ETHYL ACETATE	9.94	61	43439	10.86	PPBV #	94
41) CHLOROFORM	10.05	83	308592	10.95	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1081\2W25662.D Vial: 3
Acq On : 24 Sep 2009 4:33 pm Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1081,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:38:38 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
42) 2,4-DIMETHYLPENTANE	10.84	57	279148	11.33 PPBV	100
43) 1,1,1-TRICHLOROETHANE	11.07	97	317926	10.88 PPBV	100
44) CARBON TETRACHLORIDE	11.69	117	334193	10.95 PPBV	100
45) 1,2-DICHLOROETHANE	10.80	62	204942	11.20 PPBV	99
47) BENZENE	11.54	78	519274	10.65 PPBV	99
48) CYCLOHEXANE	11.83	84	230452	10.07 PPBV	99
49) 2,3-DIMETHYLPENTANE	12.03	71	110761	11.43 PPBV	99
50) TRICHLOROETHYLENE	12.60	95	204475	10.72 PPBV	97
51) 1,2-DICHLOROPROPANE	12.36	63	194898	10.90 PPBV	99
52) BROMODICHLOROMETHANE	12.56	83	330667	11.55 PPBV	100
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	674336	11.37 PPBV	99
54) 1,4-DIOXANE	12.61	88	87428	9.77 PPBV #	19
55) METHYL METHACRYLATE	12.76	69	143139	11.29 PPBV	98
56) HEPTANE	12.87	43	263396	11.17 PPBV	99
57) TVHC as EQUIV HEPTANE	12.87	TIC	1168897m	11.15 PPBV	
58) METHYL ISOBUTYL KETONE	13.49	43	285459	10.95 PPBV	99
59) cis-1,3-DICHLOROPROPENE	13.47	75	271681	11.59 PPBV	100
60) TOLUENE	14.50	92	353252	11.09 PPBV	98
61) trans-1,3-DICHLOROPROPENE	14.01	75	247992	11.74 PPBV	99
62) 1,1,2-TRICHLOROETHANE	14.21	83	168752	11.78 PPBV	99
64) 2-HEXANONE	14.75	58	142354	10.31 PPBV	100
65) TETRACHLOROETHYLENE	15.70	164	226210	9.42 PPBV	97
66) DIBROMOCHLOROMETHANE	14.96	129	331661	11.09 PPBV	100
67) 1,2-DIBROMOETHANE	15.23	107	276711	11.04 PPBV	100
68) OCTANE	15.50	43	336846	11.38 PPBV	99
69) 1,1,1,2-TETRACHLOROETHANE	16.41	131	230577	10.93 PPBV #	100
70) CHLOROBENZENE	16.44	112	395674	10.55 PPBV	99
71) ETHYLBENZENE	16.83	91	666266	10.46 PPBV	99
72) m,p-XYLENE	17.02	106	505002	20.62 PPBV	99
73) o-XYLENE	17.54	106	243816	10.66 PPBV	99
74) STYRENE	17.42	104	361122	11.80 PPBV	99
75) NONANE	17.73	43	315268	12.54 PPBV	99
76) BROMOFORM	17.14	173	280158	12.09 PPBV	99
78) 1,1,2,2-TETRACHLOROETHANE	17.53	83	284406	12.11 PPBV	99
79) ISOPROPYLBENZENE	18.17	105	646685	11.48 PPBV	99
80) 2-CHLOROTOLUENE	18.70	126	152993	11.89 PPBV	96
81) n-PROPYLBENZENE	18.71	120	162332	12.14 PPBV	91
82) 4-ETHYLTOLUENE	18.87	105	519580	12.65 PPBV	99
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	422785	12.08 PPBV	99
84) TERT-BUTYLBENZENE	19.40	134	108183	11.22 PPBV	93
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	373006	12.83 PPBV	97
86) m-DICHLOROBENZENE	19.59	146	219005	12.54 PPBV	99
87) BENZYL CHLORIDE	19.57	91	196830	12.52 PPBV	99
88) p-DICHLOROBENZENE	19.66	146	195816	12.51 PPBV	99
89) SEC-BUTYLBENZENE	19.70	134	114337	11.70 PPBV	91
90) p-ISOPROPYLTOLUENE	19.86	134	108438	12.42 PPBV	98
91) o-DICHLOROBENZENE	20.05	146	179380	12.70 PPBV	99
92) n-BUTYLBENZENE	20.33	134	68578	12.67 PPBV	94
93) HEXACHLOROBUTADIENE	22.41	225	35837	9.13 PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1081\2W25662.D Vial: 3
Acq On : 24 Sep 2009 4:33 pm Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1081,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:38:38 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

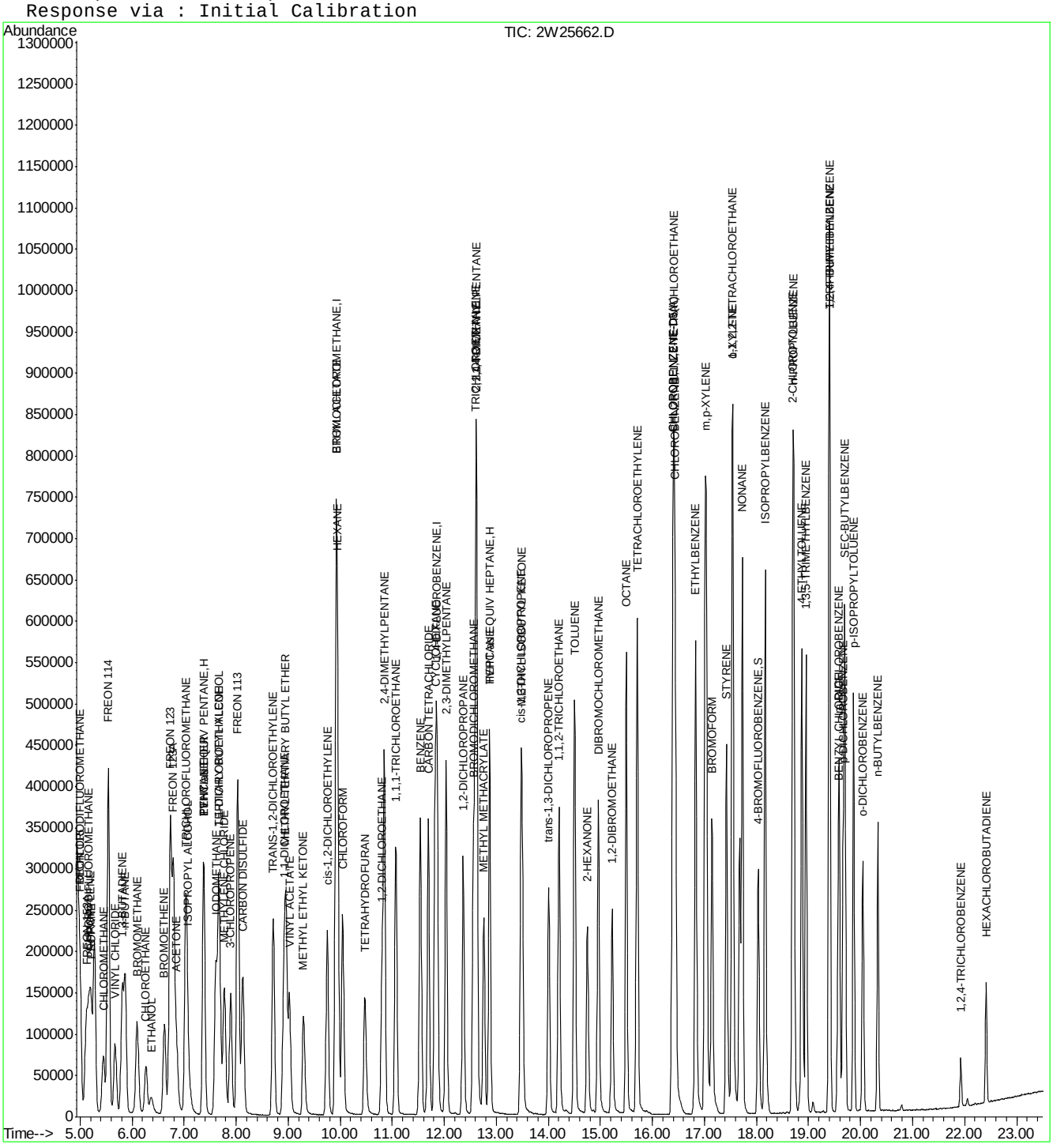
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	24994	9.55	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1081\2W25662.D Vial: 3
Acq On : 24 Sep 2009 4:33 pm Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1081,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:42 2009 Quant Results File: M2W1080.RES

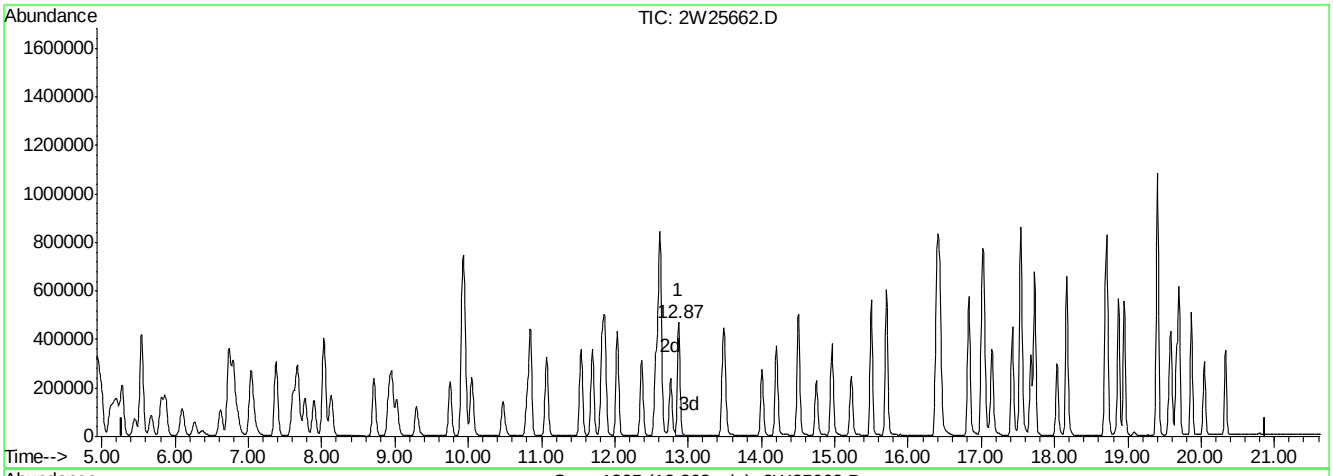
Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

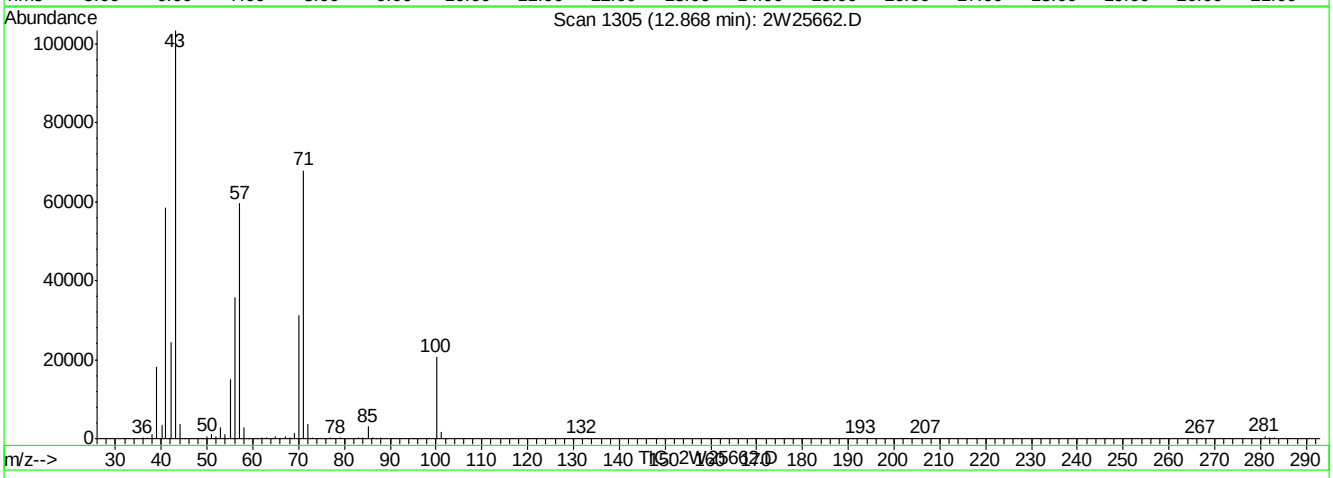


Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1081\2W25662.D Vial: 3
Acq On : 24 Sep 2009 4:33 pm Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1081,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:42 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration





(57) TVHC as EQUIV HEPTANE (H)

12.87min 11.15PPBV m

response 1168897

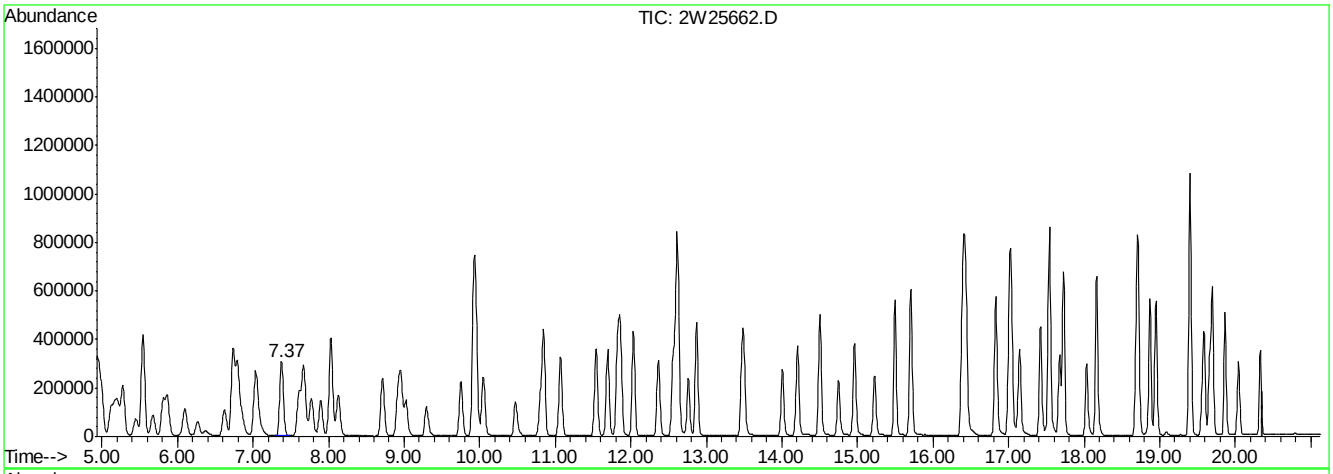
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.09#
0.00	0.00	0.00
0.00	0.00	0.00

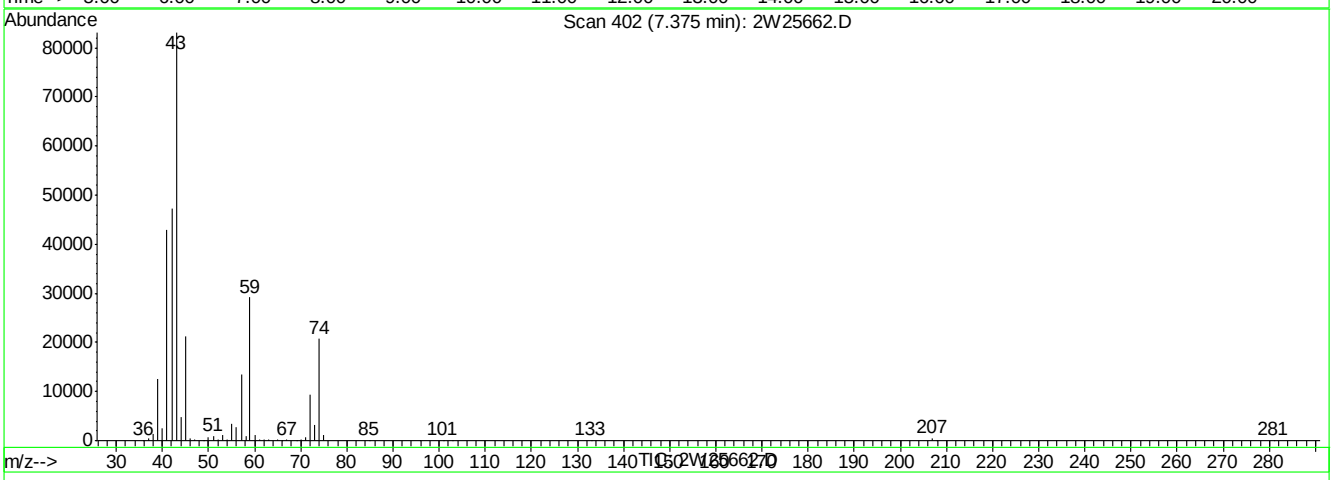
2W25662.D M2W1080.M Wed Sep 30 14:52:31 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1081\2W25662.D Vial: 3
Acq On : 24 Sep 2009 4:33 pm Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1081,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 25 12:42 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration





(21) TVHC as EQUIV PENTANE (H)

7.37min 10.58PPBV m

response 1033239

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.10#
0.00	0.00	0.00
0.00	0.00	0.00

2W25662.D M2W1080.M Wed Sep 30 14:53:01 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25709.D Vial: 2
Acq On : 28 Sep 2009 7:27 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:17 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.97	128	111987	10.00	PPBV	0.04
46) 1,4-DIFLUOROBENZENE	11.89	114	533651	10.00	PPBV	0.02
63) CHLOROBENZENE-D5	16.40	82	284402	10.00	PPBV	0.01
95) CHLOROBENZENE-D5(A)	16.40	82	284202	10.00	PPBV	0.01

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.04	95	149468	5.10	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 102.00%

Target Compounds						Qvalue
2) FREON 115	5.05	119	90003	7.41	PPBV	91
3) DICHLORODIFLUOROMETHANE	5.05	85	140064	8.30	PPBV	99
4) FREON 152A	5.17	65	114645	11.66	PPBV	96
5) CHLORODIFLUOROMETHANE	5.21	67	41652	11.13	PPBV	100
6) PROPYLENE	5.26	41	175758	11.95	PPBV	98
7) PROPANE	5.28	43	62870	11.69	PPBV #	100
8) FREON 114	5.60	85	436239	10.30	PPBV	95
9) CHLOROMETHANE	5.50	52	60268	11.55	PPBV #	88
10) VINYL CHLORIDE	5.73	62	190667	11.18	PPBV	100
11) 1,3-BUTADIENE	5.87	54	146086	11.34	PPBV	94
12) n-BUTANE	5.92	43	302386	11.85	PPBV	98
13) BROMOMETHANE	6.16	94	149774	10.07	PPBV	100
14) CHLOROETHANE	6.32	64	101167	10.93	PPBV	98
15) FREON 123	6.79	83	331221	9.91	PPBV #	99
16) FREON 123A	6.85	117	170013	9.27	PPBV	89
17) TRICHLOROFLUOROMETHANE	7.09	101	325781	9.51	PPBV	99
18) ISOPROPYL ALCOHOL	7.15	45	235687	10.85	PPBV	99
19) ACETONE	6.92	58	66940	8.72	PPBV #	83
20) PENTANE	7.43	42	181939	12.00	PPBV	99
21) TVHC as EQUIV PENTANE	7.43	TIC	1119540m	11.92	PPBV	
22) ETHYL ETHER	7.44	74	70621	11.06	PPBV	95
23) IODOMETHANE	7.66	142	362167	9.90	PPBV	95
24) 1,1-DICHLOROETHYLENE	7.72	96	136136	9.75	PPBV	90
25) CARBON DISULFIDE	8.18	76	462010	10.38	PPBV	98
26) ETHANOL	6.45	45	53663	10.25	PPBV	99
27) BROMOETHENE	6.68	106	139181	9.88	PPBV	99
28) METHYLENE CHLORIDE	7.82	84	126516	9.78	PPBV	92
29) 3-CHLOROPROPENE	7.95	76	70067	11.10	PPBV #	85
30) FREON 113	8.08	151	218455	9.54	PPBV	93
31) TRANS-1,2-DICHLOROETHYLENE	8.76	96	165671	9.99	PPBV	94
32) TERTIARY BUTYL ALCOHOL	7.75	59	238977	10.11	PPBV	95
33) METHYL TERTIARY BUTYL ETHE	9.00	73	375702	10.85	PPBV	96
34) TETRAHYDROFURAN	10.52	42	180990	12.76	PPBV	94
35) HEXANE	9.99	57	248012	12.27	PPBV	98
36) VINYL ACETATE	9.07	86	34651	11.22	PPBV #	28
37) 1,1-DICHLOROETHANE	8.96	63	311677	11.71	PPBV	99
38) METHYL ETHYL KETONE	9.34	72	70421	10.92	PPBV #	81
39) cis-1,2-DICHLOROETHYLENE	9.79	96	167999	10.25	PPBV	94
40) ETHYL ACETATE	9.98	61	44579	11.59	PPBV #	83
41) CHLOROFORM	10.09	83	299755	11.05	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25709.D Vial: 2
Acq On : 28 Sep 2009 7:27 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:17 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.88	57	295143	12.45	PPBV		98
43)	1,1,1-TRICHLOROETHANE	11.10	97	305595	10.87	PPBV		98
44)	CARBON TETRACHLORIDE	11.72	117	315455	10.75	PPBV		100
45)	1,2-DICHLOROETHANE	10.84	62	206520	11.73	PPBV		99
47)	BENZENE	11.57	78	515383	10.51	PPBV		99
48)	CYCLOHEXANE	11.85	84	224320	9.74	PPBV		94
49)	2,3-DIMETHYLPENTANE	12.06	71	110658	11.34	PPBV		94
50)	TRICHLOROETHYLENE	12.62	95	197986	10.31	PPBV		94
51)	1,2-DICHLOROPROPANE	12.39	63	200381	11.13	PPBV		98
52)	BROMODICHLOROMETHANE	12.58	83	323106	11.22	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	704717	11.80	PPBV		99
54)	1,4-DIOXANE	12.65	88	88695	9.85	PPBV	#	1
55)	METHYL METHACRYLATE	12.79	69	144389	11.32	PPBV		92
56)	HEPTANE	12.89	43	291989	12.31	PPBV		95
57)	TVHC as EQUIV HEPTANE	12.89	TIC	1239694m	11.75	PPBV		
58)	METHYL ISOBUTYL KETONE	13.53	43	322674	12.30	PPBV		94
59)	cis-1,3-DICHLOROPROPENE	13.49	75	270669	11.47	PPBV		96
60)	TOLUENE	14.52	92	342849	10.70	PPBV		97
61)	trans-1,3-DICHLOROPROPENE	14.03	75	244280	11.49	PPBV		97
62)	1,1,2-TRICHLOROETHANE	14.22	83	165455	11.47	PPBV		98
64)	2-HEXANONE	14.77	58	147572	10.21	PPBV		91
65)	TETRACHLOROETHYLENE	15.72	164	207370	8.24	PPBV		96
66)	DIBROMOCHLOROMETHANE	14.98	129	309031	9.87	PPBV		100
67)	1,2-DIBROMOETHANE	15.24	107	260739	9.94	PPBV		100
68)	OCTANE	15.51	43	375147	12.10	PPBV		92
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	215212	9.74	PPBV	#	99
70)	CHLOROBENZENE	16.45	112	366730	9.34	PPBV		96
71)	ETHYLBENZENE	16.84	91	641630	9.62	PPBV		98
72)	m,p-XYLENE	17.04	106	481442	18.77	PPBV		98
73)	o-XYLENE	17.55	106	230852	9.64	PPBV		97
74)	STYRENE	17.43	104	334039	10.43	PPBV		98
75)	NONANE	17.73	43	340785	12.95	PPBV		94
76)	BROMOFORM	17.16	173	248735	10.25	PPBV		99
78)	1,1,2,2-TETRACHLOROETHANE	17.54	83	281462	11.44	PPBV		100
79)	ISOPROPYLBENZENE	18.17	105	611425	10.37	PPBV		98
80)	2-CHLOROTOLUENE	18.70	126	140315	10.42	PPBV	#	88
81)	n-PROPYLBENZENE	18.72	120	151993	10.86	PPBV		87
82)	4-ETHYLTOLUENE	18.87	105	481990	11.21	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	407798	11.13	PPBV		97
84)	TERT-BUTYLBENZENE	19.40	134	101762	10.08	PPBV		88
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	357125	11.73	PPBV		96
86)	m-DICHLOROBENZENE	19.60	146	198310	10.84	PPBV		99
87)	BENZYL CHLORIDE	19.57	91	185418	11.27	PPBV		98
88)	p-DICHLOROBENZENE	19.66	146	170391	10.40	PPBV		98
89)	SEC-BUTYLBENZENE	19.70	134	106827	10.44	PPBV		89
90)	p-ISOPROPYLTOLUENE	19.87	134	97980	10.72	PPBV		94
91)	o-DICHLOROBENZENE	20.05	146	160722	10.87	PPBV		99
92)	n-BUTYLBENZENE	20.33	134	61339	10.82	PPBV		87
93)	HEXACHLOROBUTADIENE	22.41	225	35318	8.60	PPBV		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25709.D Vial: 2
Acq On : 28 Sep 2009 7:27 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 08:48:17 2009 Quant Results File: M2W1080.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

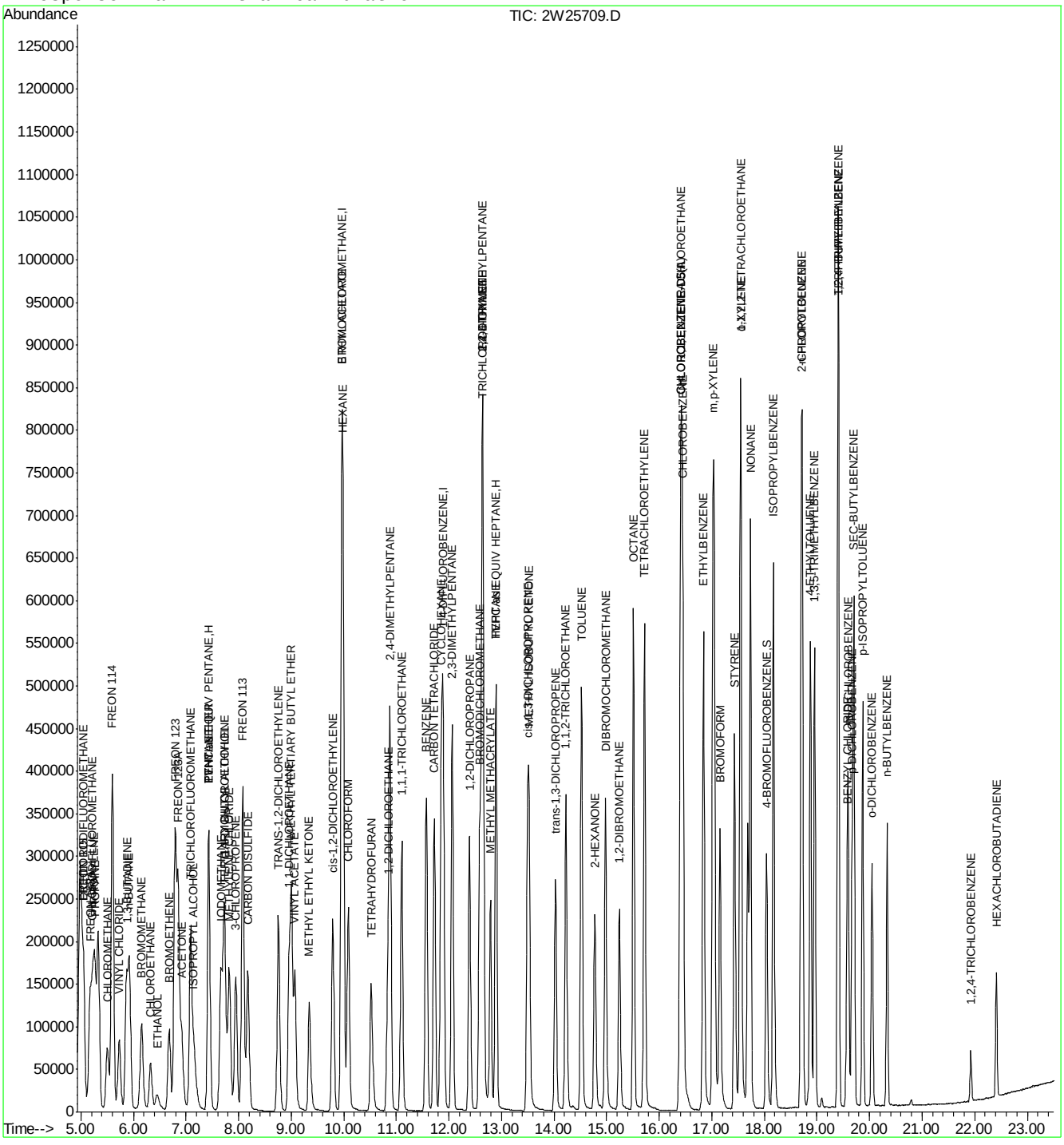
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	24176	8.83	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25709.D Vial: 2
Acq On : 28 Sep 2009 7:27 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 9:51 2009 Quant Results File: M2W1080.RES

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

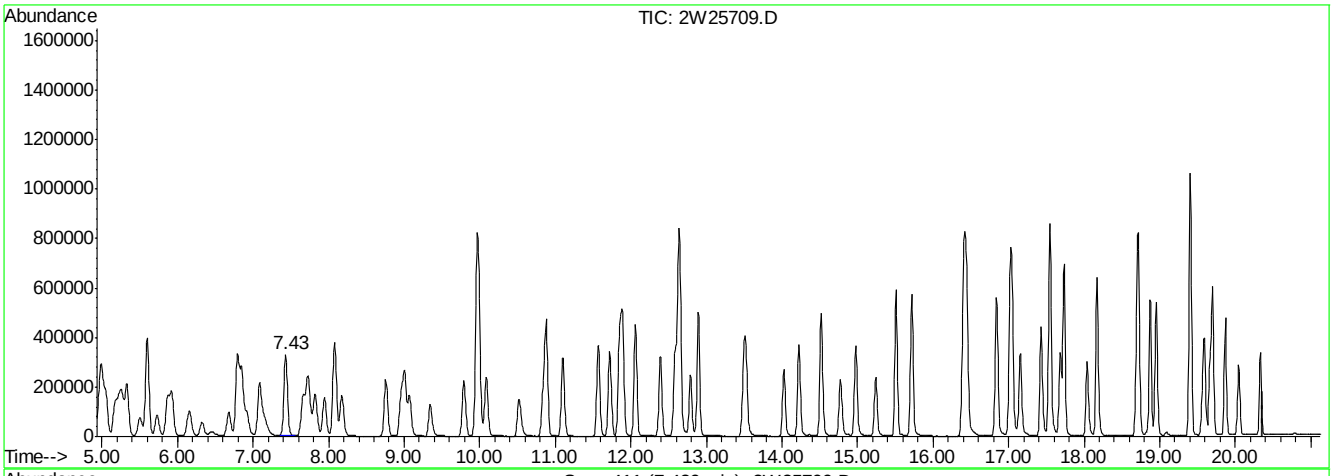


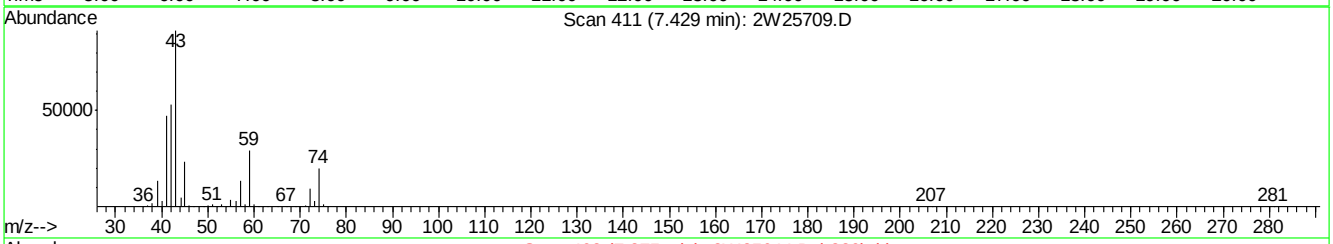
ACCUTEST Laboratories JA28238

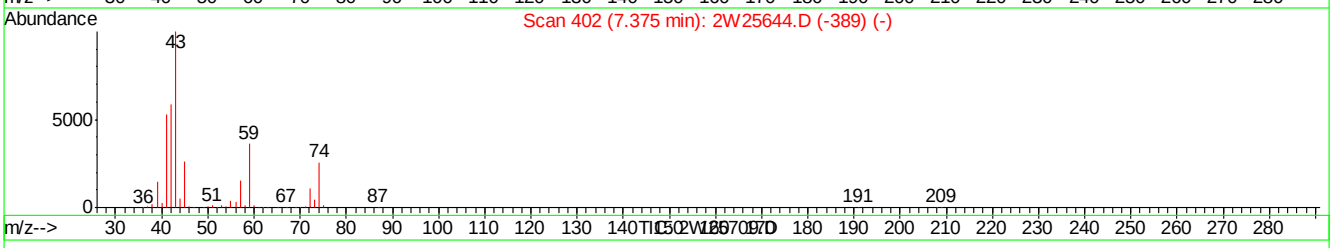
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25709.D Vial: 2
Acq On : 28 Sep 2009 7:27 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 9:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.43min 11.92PPBV m

response 1119540

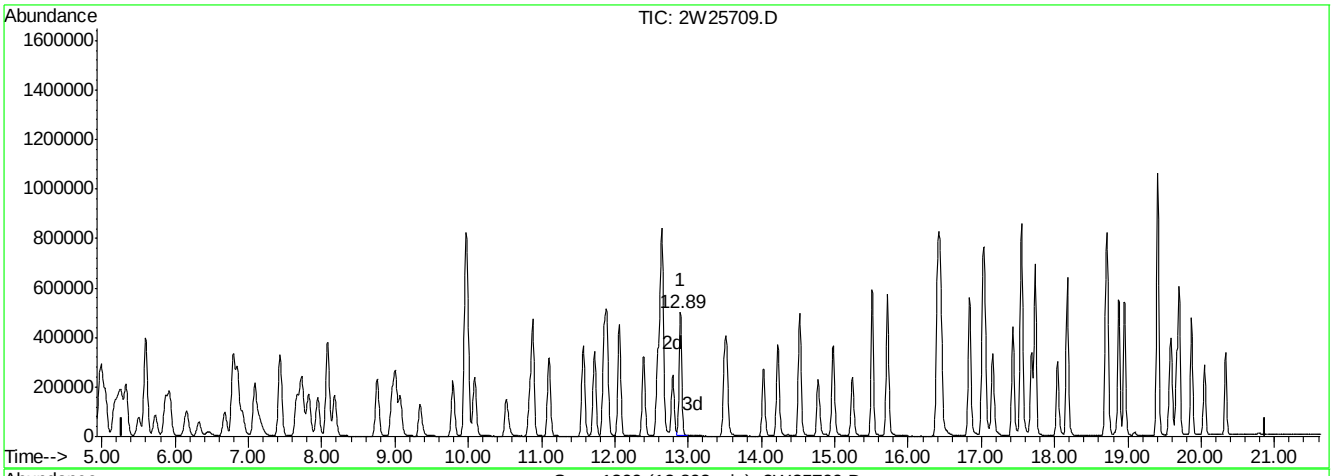
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

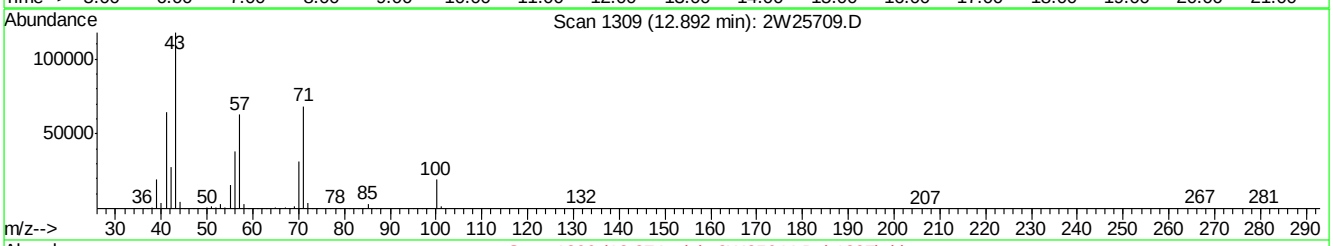
2W25709.D M2W1080.M Tue Sep 29 10:48:35 2009 MS2W

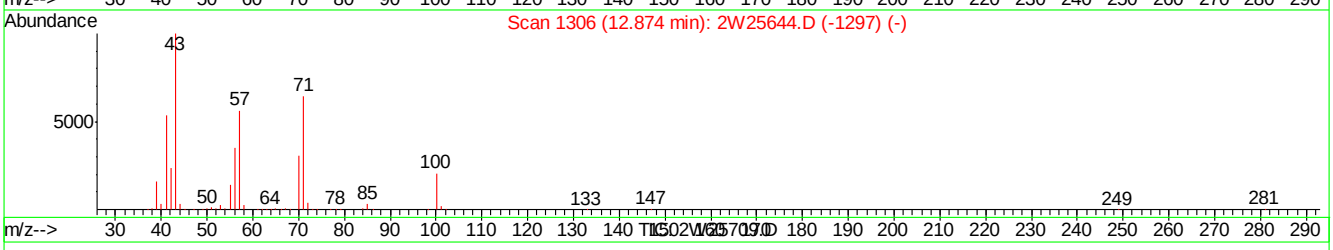
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25709.D Vial: 2
Acq On : 28 Sep 2009 7:27 am Operator: YOUMINH
Sample : CC1080-10 Inst : MS2W
Misc : MS49009,V2W1083,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 29 9:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1080.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Fri Sep 25 12:19:18 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 11.75PPBV m

response 1239694

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25709.D M2W1080.M Tue Sep 29 10:48:39 2009 MS2W

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25735.d
Acq On : 29 Sep 2009 10:18 am
Operator : YOUMINH
Sample : CC1080-10
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 30 11:17:59 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.924	128	111022	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.858	114	523035	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.384	82	282901	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.384	82	283021	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.027	95	150699	5.17	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery	=	103.40%	
Target Compounds						Qvalue
2) FREON 115	5.002	119	84980	7.06	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.002	85	123385	7.37	PPBV	97
4) FREON 152A	5.117	65	91792	9.41	PPBV	96
5) CHLORODIFLUOROMETHANE	5.160	67	38094	10.27	PPBV	98
6) PROPYLENE	5.209	41	123569	8.47	PPBV	94
7) PROPANE	5.221	43	44591	8.36	PPBV #	100
8) FREON 114	5.543	85	443773	10.56	PPBV	95
9) CHLOROMETHANE	5.452	52	55212	10.67	PPBV	98
10) VINYL CHLORIDE	5.677	62	186773	11.05	PPBV	100
11) 1,3-BUTADIENE	5.811	54	138871	10.87	PPBV	98
12) n-BUTANE	5.866	43	268116	10.60	PPBV	100
13) BROMOMETHANE	6.097	94	156720	10.63	PPBV	99
14) CHLOROETHANE	6.267	64	102399	11.16	PPBV	99
15) FREON 123	6.736	83	345356	10.42	PPBV #	100
16) FREON 123A	6.790	117	180438	9.92	PPBV	93
17) TRICHLOROFLUOROMETHANE	7.034	101	354913	10.45	PPBV	99
18) ISOPROPYL ALCOHOL	7.076	45	246584	11.45	PPBV	100
19) ACETONE	6.851	58	73814	9.70	PPBV	95
20) PENTANE	7.375	42	126920	8.45	PPBV	93
21) TVHC as EQUIV PENTANE	7.375	TIC	859114m	9.23	PPBV	
22) ETHYL ETHER	7.375	74	62955	9.95	PPBV	98
23) IODOMETHANE	7.606	142	352633	9.72	PPBV	91
24) 1,1-DICHLOROETHYLENE	7.667	96	122436	8.84	PPBV	98
25) CARBON DISULFIDE	8.123	76	396355	8.98	PPBV	99
26) ETHANOL	6.371	45	56259	10.84	PPBV	99
27) BROMOETHENE	6.620	106	145647	10.43	PPBV	99
28) METHYLENE CHLORIDE	7.770	84	113500	8.85	PPBV	95
29) 3-CHLOROPROPENE	7.892	76	60153	9.61	PPBV #	90
30) FREON 113	8.032	151	210850	9.29	PPBV	97
31) TRANS-1,2-DICHLOROETHY...	8.713	96	149243	9.08	PPBV	99
32) TERTIARY BUTYL ALCOHOL	7.673	59	215657	9.20	PPBV	98
33) METHYL TERTIARY BUTYL ...	8.956	73	361856	10.54	PPBV	98
34) TETRAHYDROFURAN	10.471	42	135850	9.66	PPBV	92
35) HEXANE	9.948	57	196919	9.83	PPBV	95
36) VINYL ACETATE	9.029	86	30521	9.97	PPBV #	91
37) 1,1-DICHLOROETHANE	8.914	63	256221	9.71	PPBV	99
38) METHYL ETHYL KETONE	9.291	72	65454	10.24	PPBV	98
39) cis-1,2-DICHLOROETHYLENE	9.747	96	149672	9.21	PPBV	99
40) ETHYL ACETATE	9.930	61	40117	10.52	PPBV	98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25735.d
Acq On : 29 Sep 2009 10:18 am
Operator : YOUMINH
Sample : CC1080-10
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 30 11:17:59 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41) CHLOROFORM	10.045	83	278703	10.37	PPBV		99
42) 2,4-DIMETHYLPENTANE	10.842	57	229658	9.78	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.067	97	299885	10.76	PPBV		99
44) CARBON TETRACHLORIDE	11.688	117	315823	10.85	PPBV		99
45) 1,2-DICHLOROETHANE	10.800	62	192893	11.05	PPBV		99
47) BENZENE	11.536	78	443577	9.23	PPBV		99
48) CYCLOHEXANE	11.822	84	193504	8.57	PPBV		98
49) 2,3-DIMETHYLPENTANE	12.028	71	92154	9.64	PPBV		99
50) TRICHLOROETHYLENE	12.600	95	182029	9.67	PPBV		96
51) 1,2-DICHLOROPROPANE	12.363	63	161027	9.13	PPBV		97
52) BROMODICHLOROMETHANE	12.558	83	301640	10.69	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.619	57	577452	9.87	PPBV		99
54) 1,4-DIOXANE	12.606	88	88009	9.97	PPBV	#	80
55) METHYL METHACRYLATE	12.758	69	137242	10.97	PPBV		98
56) HEPTANE	12.868	43	218325	9.39	PPBV		97
57) TVHC as EQUIV HEPTANE	12.868	TIC	1018367m	9.85	PPBV		
58) METHYL ISOBUTYL KETONE	13.495	43	273803	10.65	PPBV		99
59) cis-1,3-DICHLOROPROPENE	13.470	75	240962	10.42	PPBV		95
60) TOLUENE	14.498	92	316298	10.07	PPBV		97
61) trans-1,3-DICHLOROPROPENE	14.006	75	226983	10.89	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.200	83	149573	10.58	PPBV		99
64) 2-HEXANONE	14.748	58	135548	9.43	PPBV		99
65) TETRACHLOROETHYLENE	15.703	164	206497	8.25	PPBV		97
66) DIBROMOCHLOROMETHANE	14.961	129	306805	9.85	PPBV		100
67) 1,2-DIBROMOETHANE	15.222	107	253113	9.70	PPBV		100
68) OCTANE	15.496	43	293057	9.51	PPBV		98
69) 1,1,1,2-TETRACHLOROETHANE	16.409	131	213662	9.72	PPBV	#	99
70) CHLOROBENZENE	16.433	112	354213	9.07	PPBV		98
71) ETHYLBENZENE	16.828	91	622014	9.38	PPBV		99
72) m,p-XYLENE	17.017	106	469694	18.41	PPBV		97
73) o-XYLENE	17.540	106	229763	9.65	PPBV		97
74) STYRENE	17.418	104	338333	10.62	PPBV		99
75) NONANE	17.723	43	287725	10.99	PPBV		99
76) BROMOFORM	17.139	173	257358	10.66	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.534	83	279217	11.41	PPBV		100
79) ISOPROPYLBENZENE	18.161	105	629102	10.72	PPBV		98
80) 2-CHLOROTOLUENE	18.690	126	143841	10.74	PPBV	#	86
81) n-PROPYLBENZENE	18.714	120	158624	11.39	PPBV		89
82) 4-ETHYLTOLUENE	18.866	105	522082	12.21	PPBV		98
83) 1,3,5-TRIMETHYLBENZENE	18.945	105	432597	11.87	PPBV		97
84) TERT-BUTYLBENZENE	19.396	134	109515	10.91	PPBV		87
85) 1,2,4-TRIMETHYLBENZENE	19.402	105	389855	12.87	PPBV		96
86) m-DICHLOROBENZENE	19.590	146	213894	11.75	PPBV		99
87) BENZYL CHLORIDE	19.560	91	216690	13.24	PPBV		98
88) p-DICHLOROBENZENE	19.657	146	190272	11.67	PPBV		99
89) SEC-BUTYLBENZENE	19.694	134	115006	11.30	PPBV		87
90) p-ISOPROPYLTOLUENE	19.864	134	109997	12.10	PPBV		92
91) o-DICHLOROBENZENE	20.041	146	179638	12.21	PPBV		99
92) n-BUTYLBENZENE	20.333	134	71763	12.73	PPBV		86
93) HEXACHLOROBUTADIENE	22.413	225	44947	11.00	PPBV		98

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25735.d
Acq On : 29 Sep 2009 10:18 am
Operator : YOUMINH
Sample : CC1080-10
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 30 11:17:59 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.926	180	30129	11.06	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

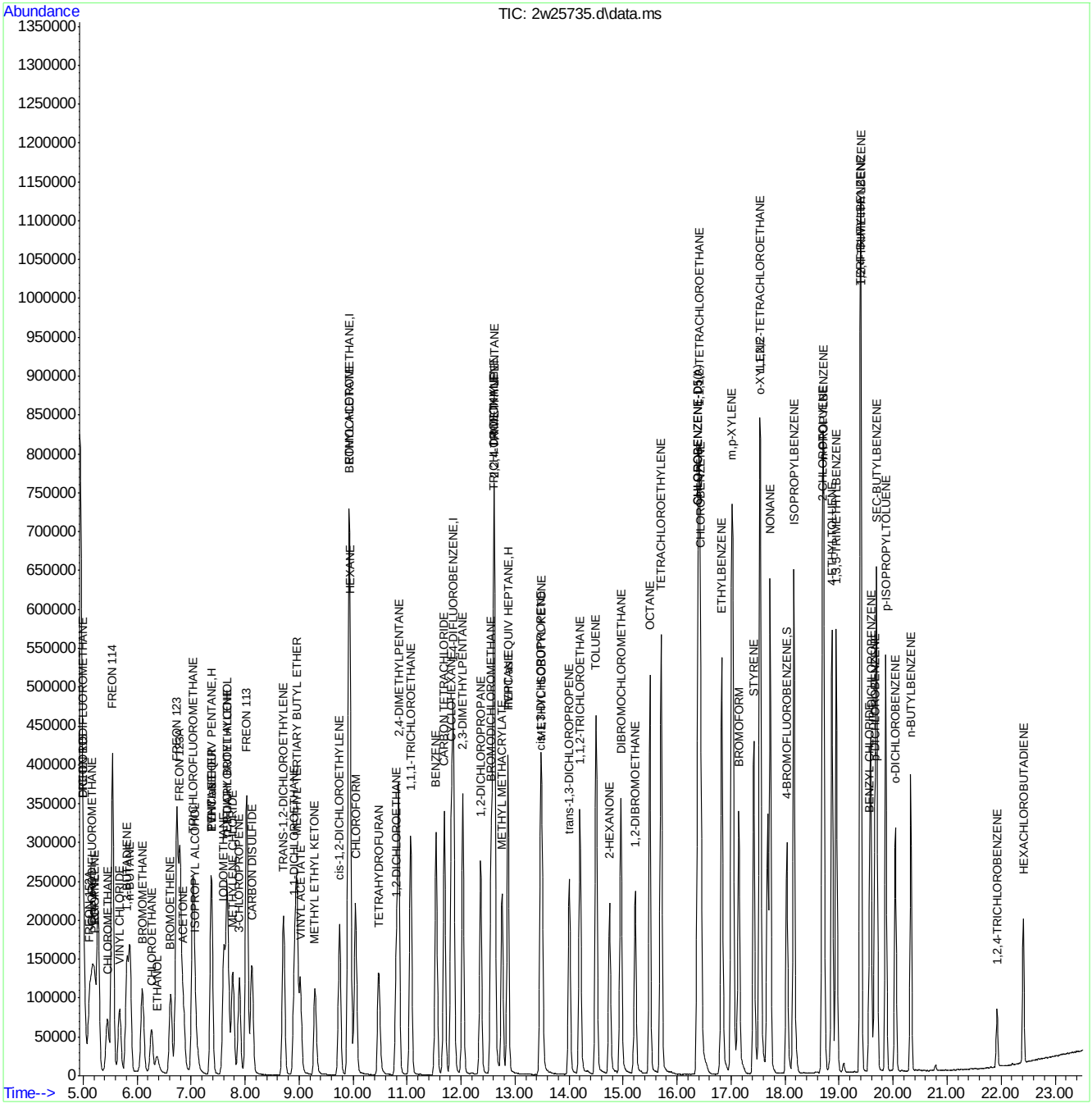
6.7.27

6

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25735.d
Acq On : 29 Sep 2009 10:18 am
Operator : YOUMINH
Sample : CC1080-10
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 30 11:17:59 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration

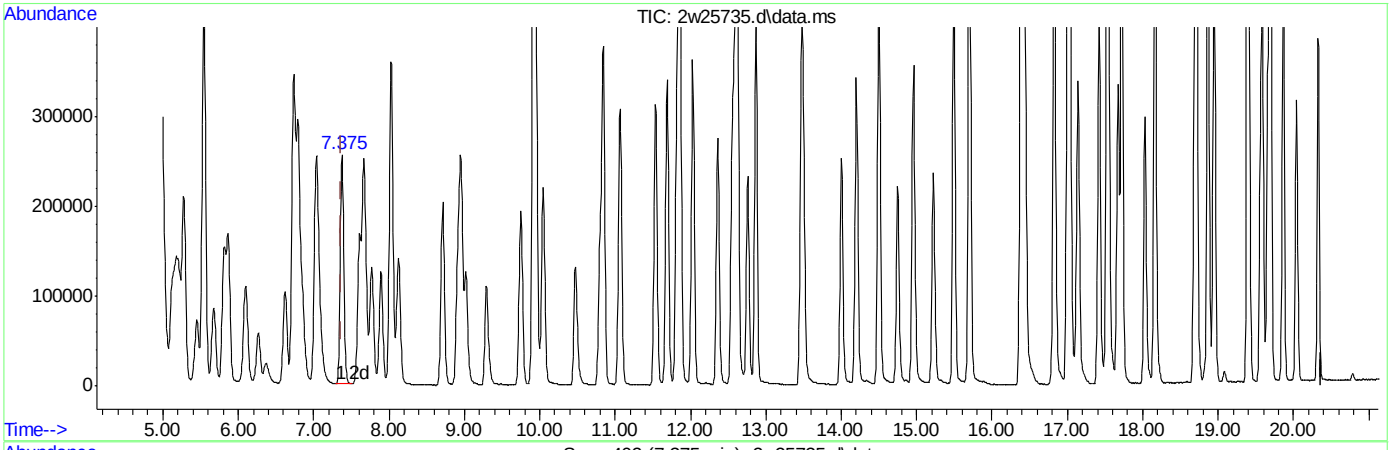


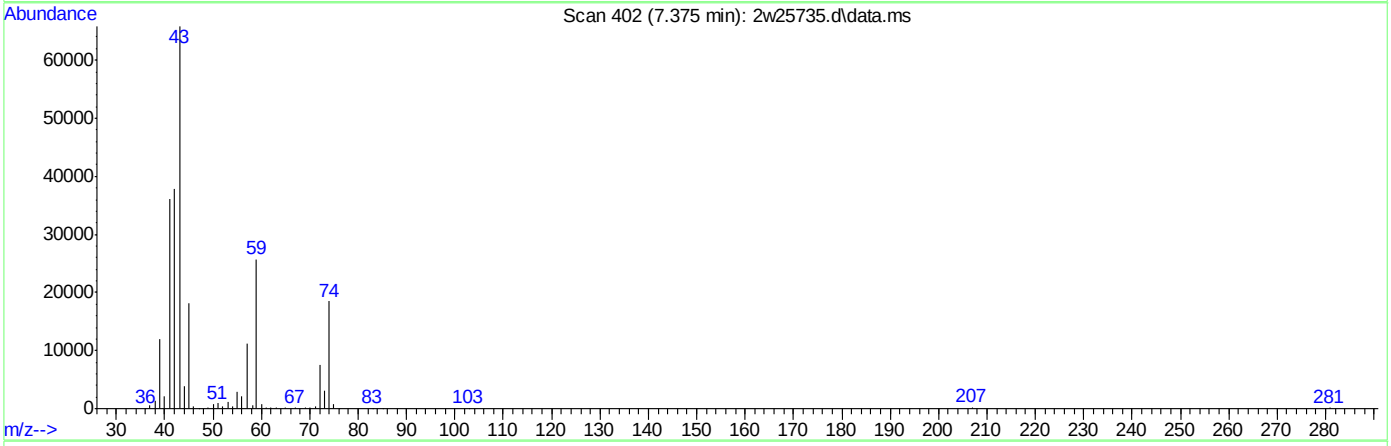
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25735.d
Acq On : 29 Sep 2009 10:18 am
Operator : YOUMINH
Sample : CC1080-10
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 30 11:17:12 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration





TIC: 2w25735.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.375min (-0.000) 9.23PPBV m

response 859114

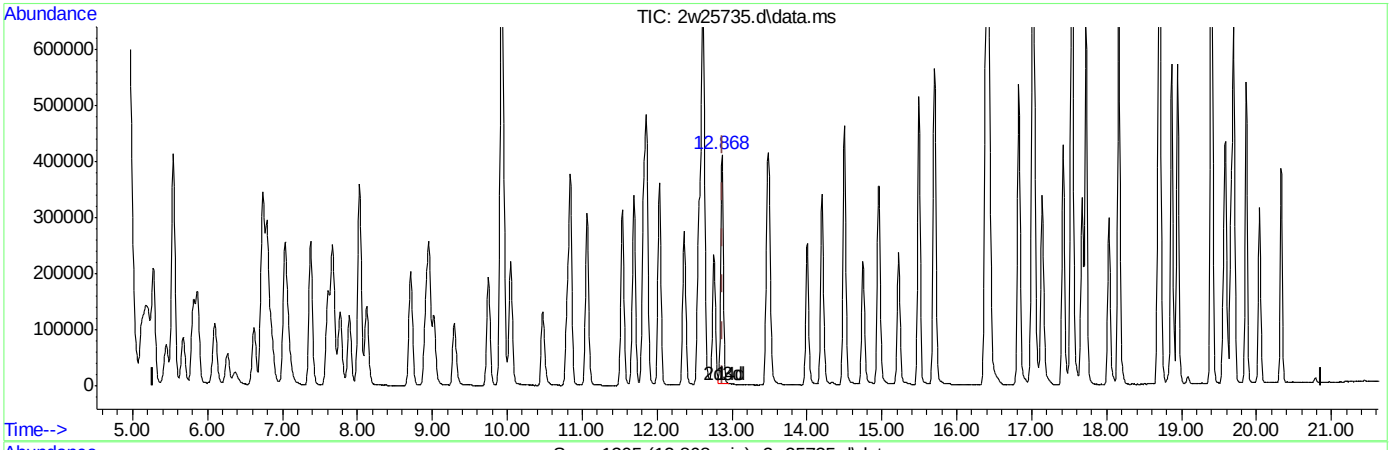
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

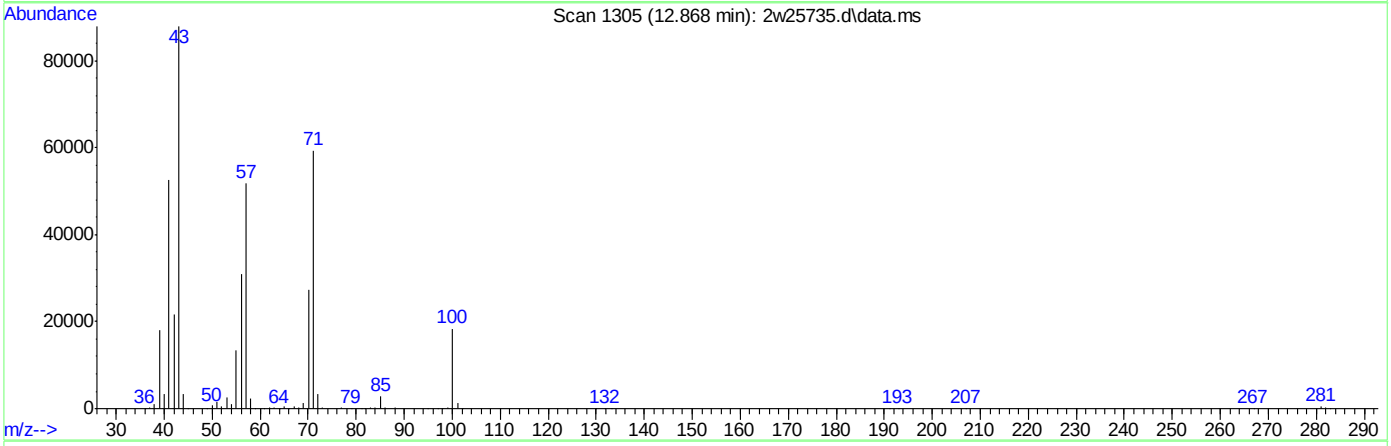
ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1084\
Data File : 2w25735.d
Acq On : 29 Sep 2009 10:18 am
Operator : YOUMINH
Sample : CC1080-10
Misc : MS49009,V2W1084,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 30 11:17:12 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1080.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Fri Sep 25 12:19:18 2009
Response via : Initial Calibration





TIC: 2w25735.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.868min (-0.006) 9.85PPBV m

response 1018367

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25764.D Vial: 10
Acq On : 2 Oct 2009 7:31 am Operator: YOUMINH
Sample : ICC1085-10 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:00:58 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	87807	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	382042	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	190233	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	190233	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	102685	5.00	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 100.00%

Target Compounds						Qvalue
2) FREON 115	4.99	119	65210	10.00	PPBV	100
3) DICHLORODIFLUOROMETHANE	4.99	85	88321	10.00	PPBV	100
4) FREON 152A	5.11	65	70800	10.00	PPBV	100
5) CHLORODIFLUOROMETHANE	5.15	67	35224	10.00	PPBV	100
6) PROPYLENE	5.19	41	83830	10.00	PPBV	100
7) PROPANE	5.21	43	29665	10.00	PPBV	100
8) FREON 114	5.53	85	362650	10.00	PPBV	100
9) CHLOROMETHANE	5.43	52	34652	10.00	PPBV	100
10) VINYL CHLORIDE	5.66	62	131657	10.00	PPBV	100
11) 1,3-BUTADIENE	5.80	54	96960	10.00	PPBV	100
12) n-BUTANE	5.85	43	174803	10.00	PPBV	100
13) BROMOMETHANE	6.08	94	135881	10.00	PPBV	100
14) CHLOROETHANE	6.26	64	77906	10.00	PPBV	100
15) FREON 123	6.72	83	334157	10.00	PPBV #	100
16) FREON 123A	6.78	117	200903	10.00	PPBV	100
17) TRICHLOROFLUOROMETHANE	7.02	101	385203	10.00	PPBV	100
18) ISOPROPYL ALCOHOL	7.06	45	172882	10.00	PPBV	100
19) ACETONE	6.84	58	58416	10.00	PPBV	100
20) PENTANE	7.36	42	105450	10.00	PPBV	100
21) TVHC as EQUIV PENTANE	7.36	TIC	728325m	9.99	PPBV	
22) ETHYL ETHER	7.36	74	56829	10.00	PPBV	100
23) IODOMETHANE	7.59	142	341157	10.00	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.65	96	114237	10.00	PPBV	100
25) CARBON DISULFIDE	8.11	76	339912	10.00	PPBV	100
26) ETHANOL	6.36	45	32787	10.00	PPBV	100
27) BROMOETHENE	6.61	106	145217	10.00	PPBV	100
28) METHYLENE CHLORIDE	7.76	84	101146	10.00	PPBV	100
29) 3-CHLOROPROPENE	7.88	76	52222	10.00	PPBV	100
30) FREON 113	8.01	151	204337	10.00	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.70	96	131667	10.00	PPBV	100
32) TERTIARY BUTYL ALCOHOL	7.66	59	205653	10.00	PPBV	100
33) METHYL TERTIARY BUTYL ETHE	8.94	73	300891	10.00	PPBV	100
34) TETRAHYDROFURAN	10.46	42	88190	10.00	PPBV	100
35) HEXANE	9.94	57	152168	10.00	PPBV	100
36) VINYL ACETATE	9.01	86	26078	10.00	PPBV	100
37) 1,1-DICHLOROETHANE	8.90	63	208790	10.00	PPBV	100
38) METHYL ETHYL KETONE	9.28	72	48185	10.00	PPBV	100
39) cis-1,2-DICHLOROETHYLENE	9.73	96	129572	10.00	PPBV	100
40) ETHYL ACETATE	9.92	61	26979	10.00	PPBV	100
41) CHLOROFORM	10.03	83	245726	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25764.D Vial: 10
Acq On : 2 Oct 2009 7:31 am Operator: YOUMINH
Sample : ICC1085-10 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:00:58 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.83	57	177105	10.00	PPBV		100
43)	1,1,1-TRICHLOROETHANE	11.06	97	275669	10.00	PPBV		100
44)	CARBON TETRACHLORIDE	11.68	117	290150	10.00	PPBV		100
45)	1,2-DICHLOROETHANE	10.79	62	168868	10.00	PPBV		100
47)	BENZENE	11.52	78	357578	10.00	PPBV		100
48)	CYCLOHEXANE	11.81	84	158651	10.00	PPBV		100
49)	2,3-DIMETHYLPENTANE	12.02	71	71623	10.00	PPBV		100
50)	TRICHLOROETHYLENE	12.59	95	153466	10.00	PPBV		100
51)	1,2-DICHLOROPROPANE	12.35	63	115767	10.00	PPBV		100
52)	BROMODICHLOROMETHANE	12.55	83	256694	10.00	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.61	57	424293	10.00	PPBV		100
54)	1,4-DIOXANE	12.59	88	63379	10.00	PPBV		100
55)	METHYL METHACRYLATE	12.75	69	95435	10.00	PPBV		100
56)	HEPTANE	12.86	43	152221	10.00	PPBV		100
57)	TVHC as EQUIV HEPTANE	12.86	TIC	771665m	10.00	PPBV		
58)	METHYL ISOBUTYL KETONE	13.48	43	169524	10.00	PPBV		100
59)	cis-1,3-DICHLOROPROPENE	13.46	75	190768	10.00	PPBV		100
60)	TOLUENE	14.49	92	255174	10.00	PPBV		100
61)	trans-1,3-DICHLOROPROPENE	13.99	75	182942	10.00	PPBV		100
62)	1,1,2-TRICHLOROETHANE	14.19	83	113938	10.00	PPBV		100
64)	2-HEXANONE	14.74	58	86952	10.00	PPBV		100
65)	TETRACHLOROETHYLENE	15.70	164	179013	10.00	PPBV		100
66)	DIBROMOCHLOROMETHANE	14.95	129	264544	10.00	PPBV		100
67)	1,2-DIBROMOETHANE	15.22	107	201215	10.00	PPBV		100
68)	OCTANE	15.48	43	185007	10.00	PPBV		100
69)	1,1,1,2-TETRACHLOROETHANE	16.40	131	179407	10.00	PPBV	#	100
70)	CHLOROBENZENE	16.43	112	285608	10.00	PPBV		100
71)	ETHYLBENZENE	16.82	91	489222	10.00	PPBV		100
72)	m,p-XYLENE	17.01	106	372841	20.00	PPBV		100
73)	o-XYLENE	17.53	106	175475	10.00	PPBV		100
74)	STYRENE	17.41	104	260294	10.00	PPBV		100
75)	NONANE	17.72	43	166565	10.00	PPBV		100
76)	BROMOFORM	17.13	173	220081	10.00	PPBV		100
78)	1,1,2,2-TETRACHLOROETHANE	17.52	83	187958	10.00	PPBV		100
79)	ISOPROPYLBENZENE	18.15	105	482907	10.00	PPBV		100
80)	2-CHLOROTOLUENE	18.68	126	108187	10.00	PPBV		100
81)	n-PROPYLBENZENE	18.71	120	119304	10.00	PPBV		100
82)	4-ETHYLTOLUENE	18.86	105	393894	10.00	PPBV		100
83)	1,3,5-TRIMETHYLBENZENE	18.94	105	331109	10.00	PPBV		100
84)	TERT-BUTYLBENZENE	19.39	134	80096	10.00	PPBV		100
85)	1,2,4-TRIMETHYLBENZENE	19.40	105	291600	10.00	PPBV		100
86)	m-DICHLOROBENZENE	19.58	146	170039	10.00	PPBV		100
87)	BENZYL CHLORIDE	19.55	91	145325	10.00	PPBV		100
88)	p-DICHLOROBENZENE	19.65	146	148403	10.00	PPBV		100
89)	SEC-BUTYLBENZENE	19.69	134	87167	10.00	PPBV		100
90)	p-ISOPROPYLTOLUENE	19.86	134	81506	10.00	PPBV		100
91)	o-DICHLOROBENZENE	20.03	146	139611	10.00	PPBV		100
92)	n-BUTYLBENZENE	20.33	134	52976	10.00	PPBV		100
93)	HEXACHLOROBUTADIENE	22.41	225	32434	10.00	PPBV		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25764.D Vial: 10
Acq On : 2 Oct 2009 7:31 am Operator: YOUMINH
Sample : ICC1085-10 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:00:58 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

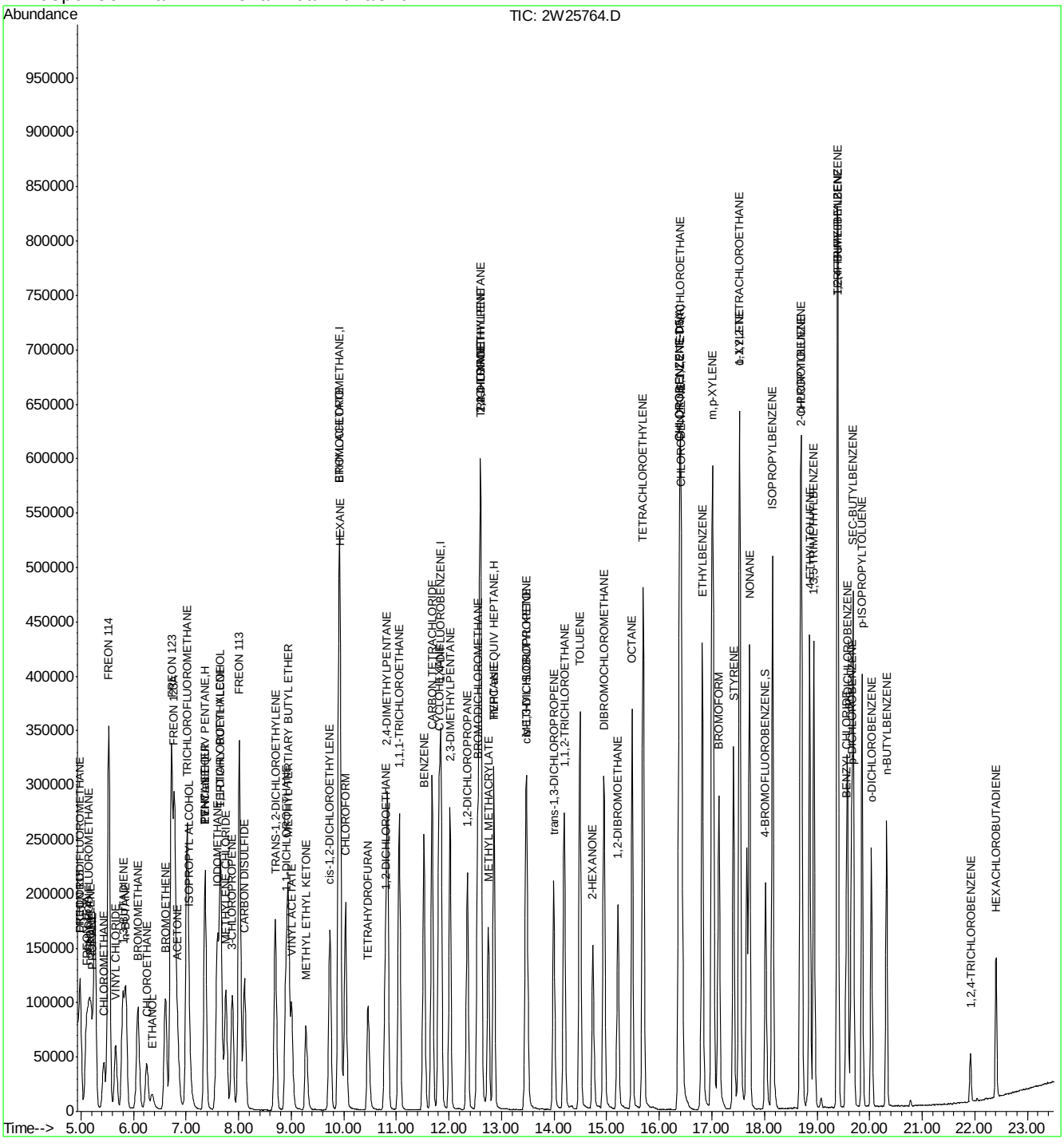
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	18805	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25764.D Vial: 10
Acq On : 2 Oct 2009 7:31 am Operator: YOUMINH
Sample : ICC1085-10 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:03 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration

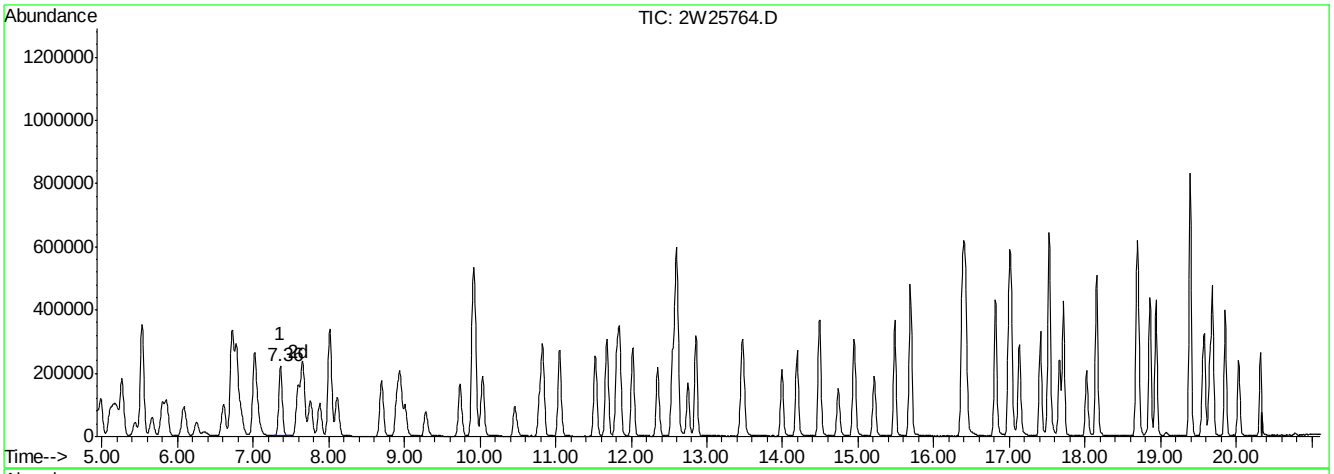


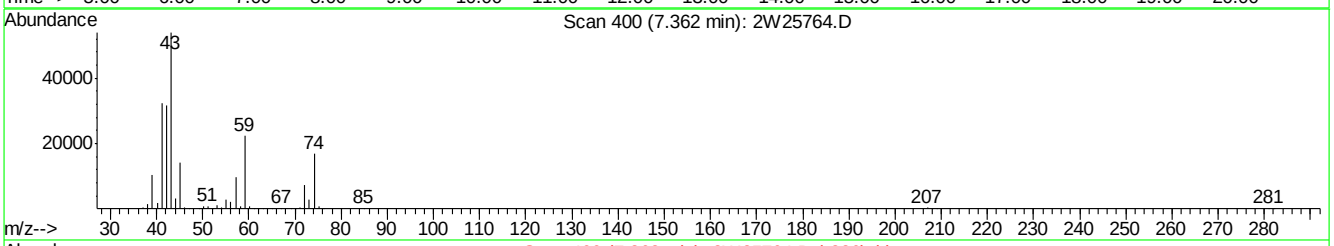
ACCUTEST Laboratories JA28238

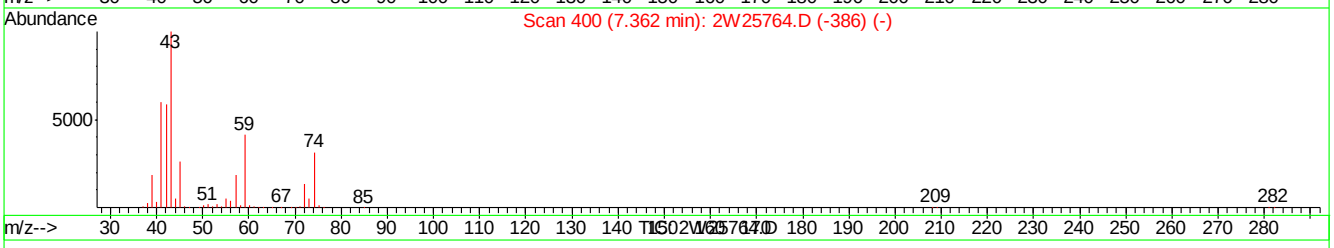
Quantitation Report (Qedit)

```
Data File : C:\MSDCHEM\1\DATA\2W25764.D                    Vial: 10
Acq On    :  2 Oct 2009   7:31 am                     Operator: YOUMINH
Sample    : ICC1085-10                                 Inst    : MS2W
Misc      : MS49009,V2W1085,,,,,1                      Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct  5  9:03 2009              Quant Results File: temp.res

Method       : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title        : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update  : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration
```







(21) TVHC as EQUIV PENTANE (H)

7.36min 9.99PPBV m

response 728325

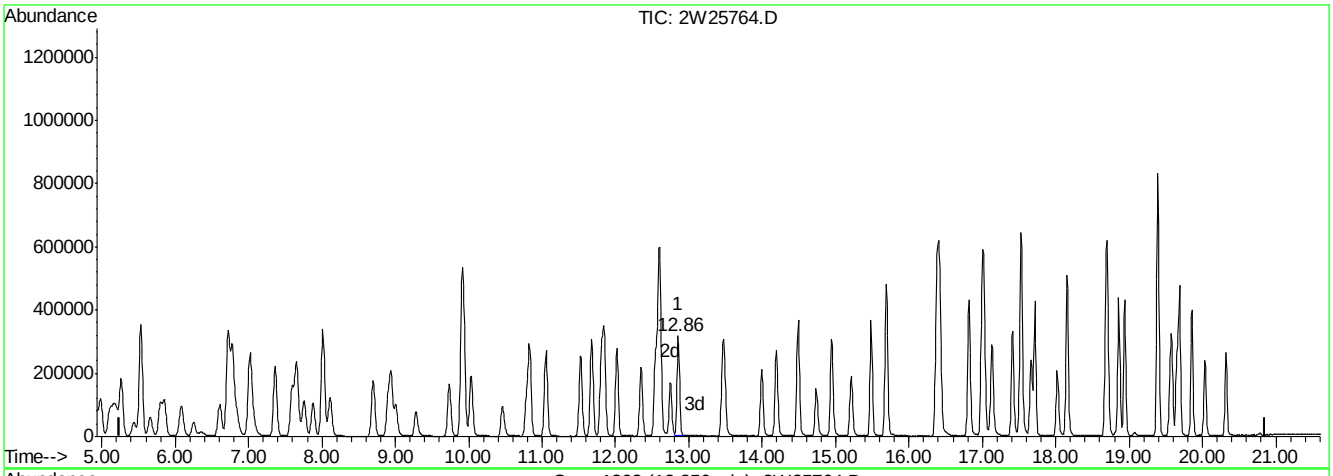
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.02#
0.00	0.00	0.02#
0.00	0.00	0.00

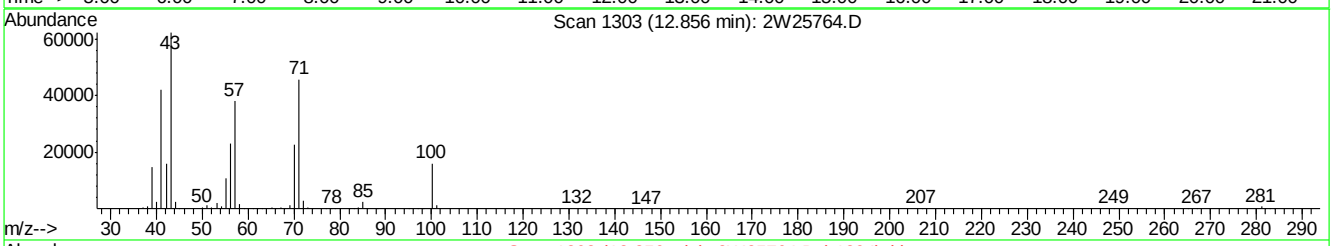
2W25764.D M2W1085.M Tue Oct 06 11:13:56 2009 MS2W

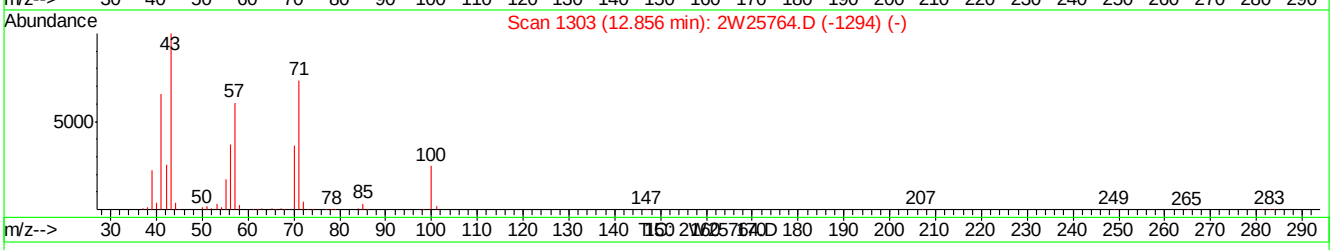
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25764.D Vial: 10
Acq On : 2 Oct 2009 7:31 am Operator: YOUMINH
Sample : ICC1085-10 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:03 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 10.00PPBV m

response 771665

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.02#
0.00	0.00	0.02#
0.00	0.00	0.00

2W25764.D M2W1085.M Tue Oct 06 11:13:59 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25765.D Vial: 9
Acq On : 2 Oct 2009 8:15 am Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:01 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	87922	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	392278	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.37	82	173371	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.37	82	173371	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	87361	4.67	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 93.40%

Target Compounds						Qvalue
2) FREON 115	4.99	119	3124	0.48	PPBV	88
3) DICHLORODIFLUOROMETHANE	4.98	85	3768	0.43	PPBV	95
4) FREON 152A	5.11	65	3297	0.47	PPBV	92
5) CHLORODIFLUOROMETHANE	5.15	67	1812	0.51	PPBV	98
6) PROPYLENE	5.20	41	4629	0.55	PPBV	90
7) PROPANE	5.21	43	1758	0.59	PPBV	86
8) FREON 114	5.53	85	18761	0.52	PPBV	100
9) CHLOROMETHANE	5.43	52	1698	0.49	PPBV #	67
10) VINYL CHLORIDE	5.67	62	6298	0.48	PPBV	95
11) 1,3-BUTADIENE	5.80	54	4401	0.45	PPBV #	88
12) n-BUTANE	5.85	43	8541	0.49	PPBV #	98
13) BROMOMETHANE	6.10	94	6744	0.50	PPBV #	58
14) CHLOROETHANE	6.25	64	3351	0.43	PPBV	99
15) FREON 123	6.74	83	16496	0.49	PPBV #	96
16) FREON 123A	6.78	117	10334	0.51	PPBV	97
17) TRICHLOROFLUOROMETHANE	7.02	101	20685	0.54	PPBV	100
18) ISOPROPYL ALCOHOL	7.13	45	9390	0.54	PPBV	93
19) ACETONE	6.89	58	2852	0.49	PPBV #	78
20) PENTANE	7.36	42	5339	0.51	PPBV	95
21) TVHC as EQUIV PENTANE	7.37	TIC	34804m	0.48	PPBV	
22) ETHYL ETHER	7.41	74	2629	0.46	PPBV	99
23) IODOMETHANE	7.59	142	16649	0.49	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.65	96	5980	0.52	PPBV	98
25) CARBON DISULFIDE	8.11	76	17247	0.51	PPBV	97
26) ETHANOL	6.40	45	2290	0.70	PPBV #	45
27) BROMOETHENE	6.61	106	6886	0.47	PPBV	99
28) METHYLENE CHLORIDE	7.76	84	5683	0.56	PPBV	99
29) 3-CHLOROPROPENE	7.88	76	2360	0.45	PPBV #	90
30) FREON 113	8.02	151	10829	0.53	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.70	96	6562	0.50	PPBV	95
32) TERTIARY BUTYL ALCOHOL	7.73	59	10532	0.51	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.98	73	14349	0.48	PPBV	97
34) TETRAHYDROFURAN	10.51	42	3701	0.42	PPBV	99
35) HEXANE	9.93	57	7143	0.47	PPBV	97
36) VINYL ACETATE	9.02	86	1014	0.39	PPBV #	31
37) 1,1-DICHLOROETHANE	8.91	63	10216	0.49	PPBV	97
38) METHYL ETHYL KETONE	9.32	72	2101	0.44	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	9.74	96	6400	0.49	PPBV	91
40) ETHYL ACETATE	9.95	61	1178	0.44	PPBV #	77
41) CHLOROFORM	10.03	83	11971	0.49	PPBV	96

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25765.D Vial: 9
Acq On : 2 Oct 2009 8:15 am Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:01 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.83	57	8121	0.46	PPBV		97
43) 1,1,1-TRICHLOROETHANE	11.06	97	13831	0.50	PPBV		99
44) CARBON TETRACHLORIDE	11.68	117	14447	0.50	PPBV		99
45) 1,2-DICHLOROETHANE	10.79	62	7880	0.47	PPBV		99
47) BENZENE	11.53	78	16801	0.46	PPBV		99
48) CYCLOHEXANE	11.81	84	8098	0.50	PPBV	#	29
49) 2,3-DIMETHYLPENTANE	12.02	71	3231	0.44	PPBV		100
50) TRICHLOROETHYLENE	12.59	95	7667	0.49	PPBV		99
51) 1,2-DICHLOROPROPANE	12.35	63	5696	0.48	PPBV		94
52) BROMODICHLOROMETHANE	12.54	83	11834	0.45	PPBV		96
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	21058	0.48	PPBV		99
54) 1,4-DIOXANE	12.67	88	2932	0.45	PPBV	#	1
55) METHYL METHACRYLATE	12.76	69	3824	0.39	PPBV		99
56) HEPTANE	12.86	43	7017	0.45	PPBV		97
57) TVHC as EQUIV HEPTANE	12.86	TIC	37149m	0.47	PPBV		
58) METHYL ISOBUTYL KETONE	13.50	43	7774	0.45	PPBV		99
59) cis-1,3-DICHLOROPROPENE	13.46	75	7661	0.39	PPBV		94
60) TOLUENE	14.49	92	11209	0.43	PPBV		94
61) trans-1,3-DICHLOROPROPENE	13.99	75	7211	0.38	PPBV		99
62) 1,1,2-TRICHLOROETHANE	14.19	83	5338	0.46	PPBV		98
64) 2-HEXANONE	14.75	58	4371	0.55	PPBV		92
65) TETRACHLOROETHYLENE	15.69	164	8842	0.54	PPBV		99
66) DIBROMOCHLOROMETHANE	14.95	129	10759	0.45	PPBV		99
67) 1,2-DIBROMOETHANE	15.21	107	7942	0.43	PPBV		99
68) OCTANE	15.48	43	8258	0.49	PPBV		100
69) 1,1,1,2-TETRACHLOROETHANE	16.40	131	8544	0.52	PPBV	#	97
70) CHLOROBENZENE	16.43	112	13012	0.50	PPBV		83
71) ETHYLBENZENE	16.82	91	21436	0.48	PPBV		98
72) m,p-XYLENE	17.01	106	16618	0.98	PPBV		98
73) o-XYLENE	17.53	106	8111	0.51	PPBV		95
74) STYRENE	17.41	104	8506	0.36	PPBV		98
75) NONANE	17.72	43	7857	0.52	PPBV		99
76) BROMOFORM	17.13	173	8012	0.40	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.52	83	10524	0.61	PPBV		98
79) ISOPROPYLBENZENE	18.15	105	23670	0.54	PPBV		99
80) 2-CHLOROTOLUENE	18.68	126	4878	0.49	PPBV	#	91
81) n-PROPYLBENZENE	18.70	120	5224	0.48	PPBV		84
82) 4-ETHYLTOLUENE	18.85	105	16689	0.46	PPBV		99
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	17058	0.57	PPBV		98
84) TERT-BUTYLBENZENE	19.38	134	4560	0.62	PPBV		99
85) 1,2,4-TRIMETHYLBENZENE	19.39	105	13750	0.52	PPBV	#	84
86) m-DICHLOROBENZENE	19.58	146	7295	0.47	PPBV		98
87) BENZYL CHLORIDE	19.55	91	6148	0.46	PPBV		97
88) p-DICHLOROBENZENE	19.65	146	6502	0.48	PPBV		99
89) SEC-BUTYLBENZENE	19.69	134	4501	0.57	PPBV		89
90) p-ISOPROPYLTOLUENE	19.85	134	3911	0.53	PPBV		95
91) o-DICHLOROBENZENE	20.03	146	6386	0.50	PPBV		95
92) n-BUTYLBENZENE	20.32	134	2431	0.50	PPBV		93
93) HEXACHLOROBUTADIENE	22.41	225	3304	1.12	PPBV		90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25765.D Vial: 9
Acq On : 2 Oct 2009 8:15 am Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:01 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.93	180	1510	0.88	PPBV	96

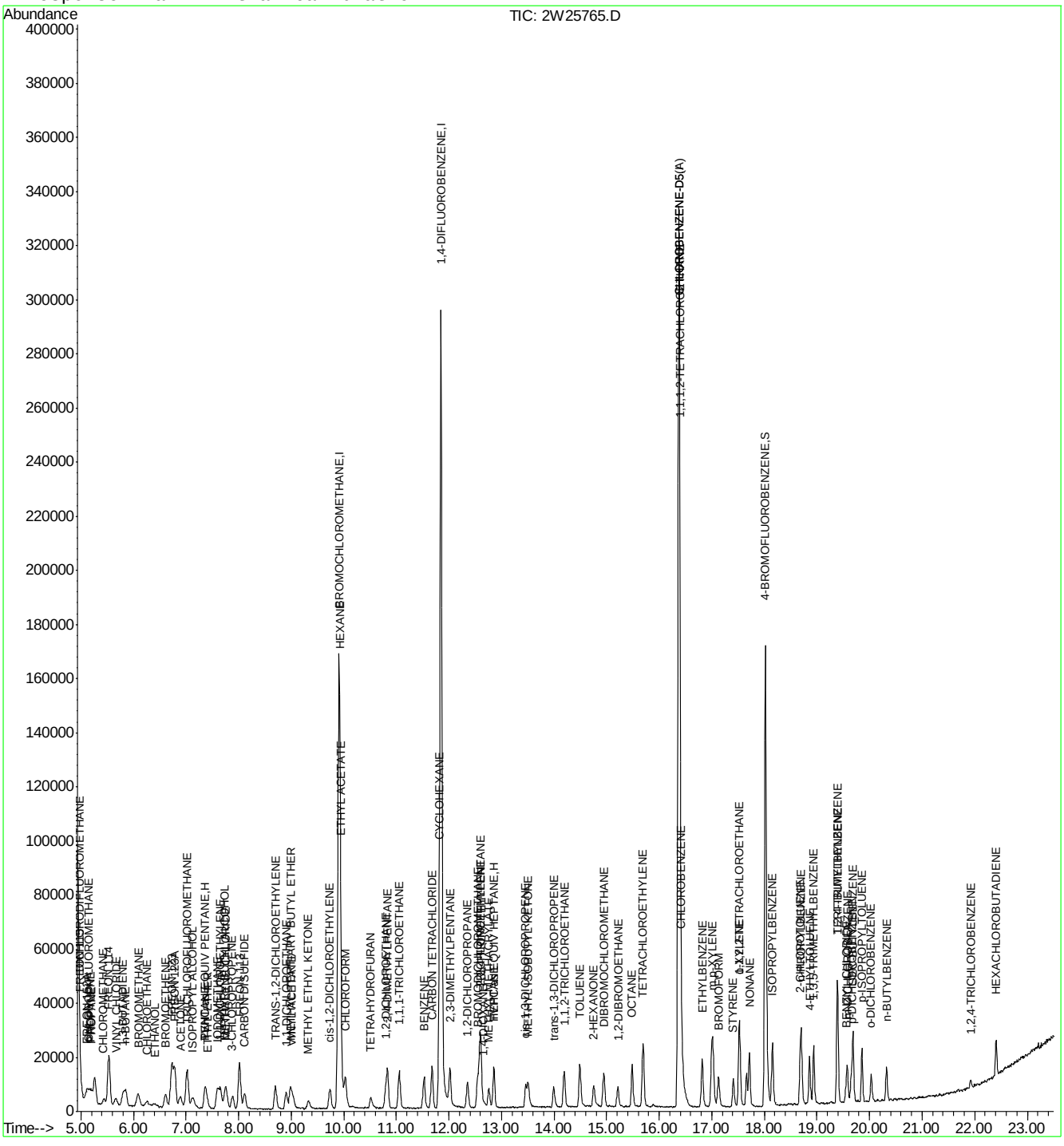
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25765.D Vial: 9
Acq On : 2 Oct 2009 8:15 am Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:04 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration

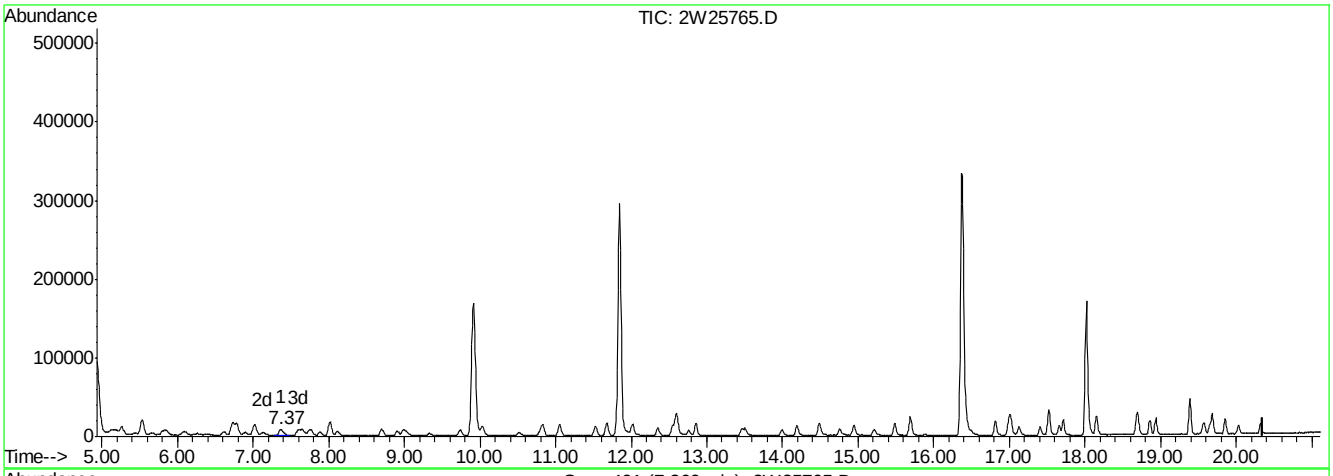


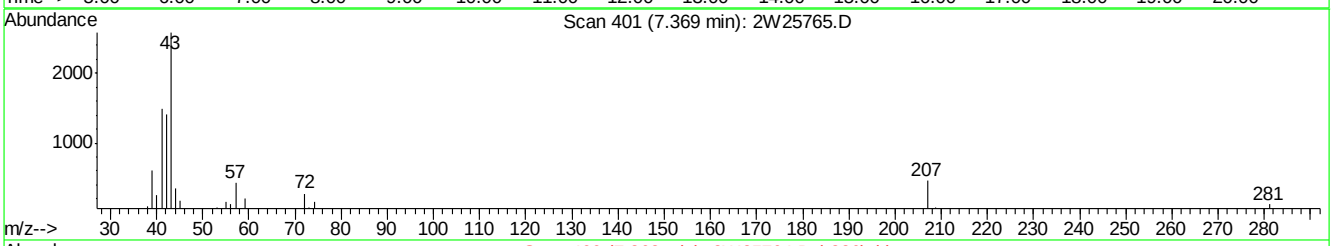
ACCUTEST Laboratories JA28238

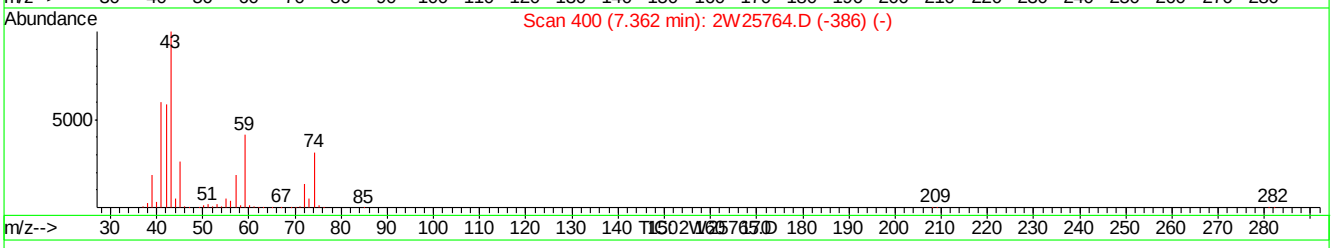
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25765.D Vial: 9
Acq On : 2 Oct 2009 8:15 am Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:04 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.37min 0.48PPBV m

response 34804

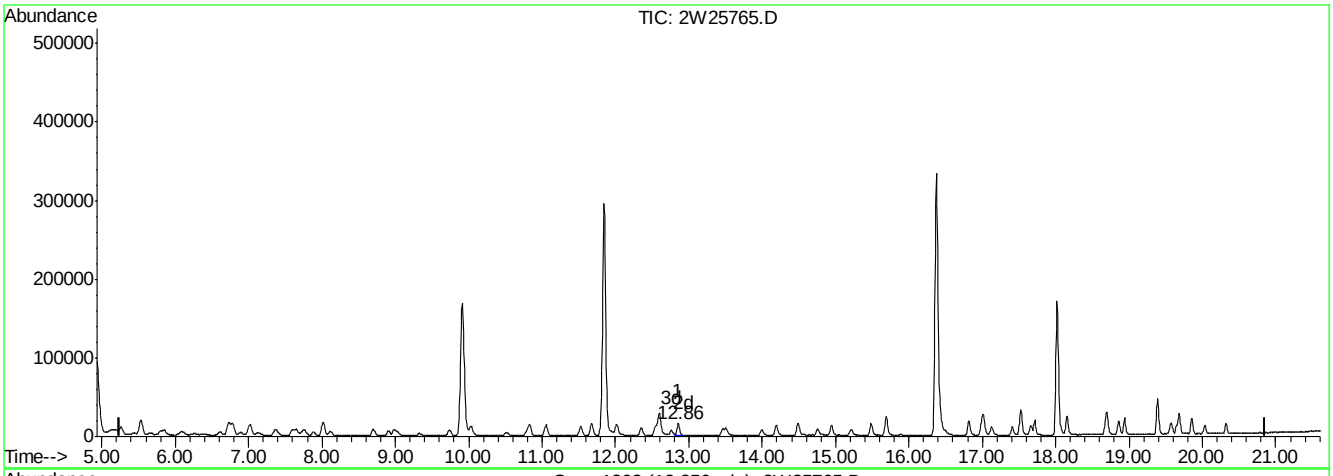
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

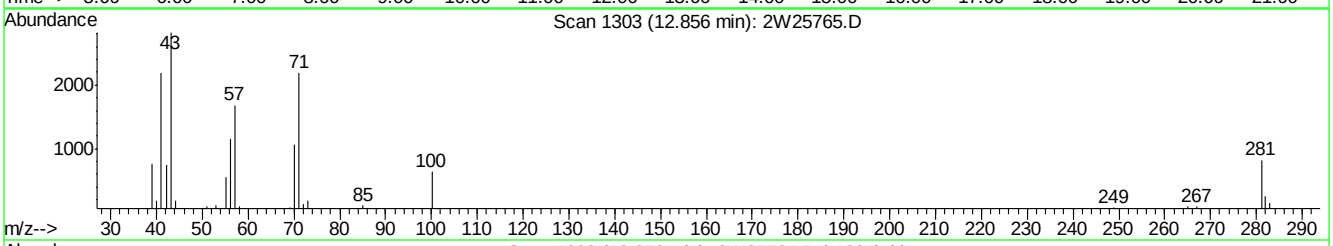
2W25765.D M2W1085.M Tue Oct 06 11:14:05 2009 MS2W

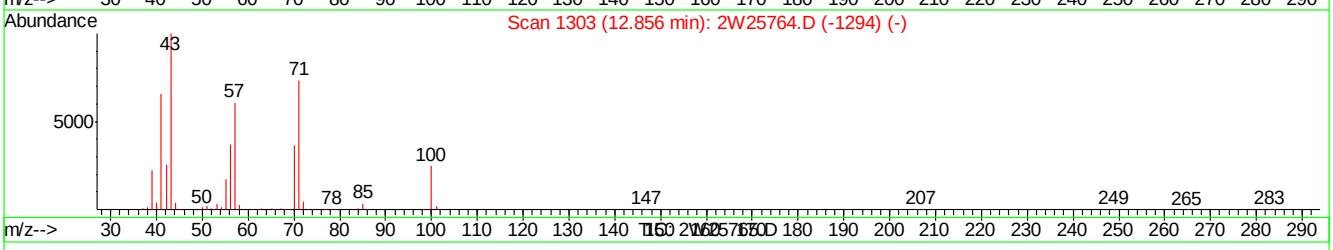
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25765.D Vial: 9
Acq On : 2 Oct 2009 8:15 am Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:04 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 0.47PPBV m

response 37149

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25765.D M2W1085.M Tue Oct 06 11:14:10 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25766.D Vial: 10
Acq On : 2 Oct 2009 9:00 am Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:04 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.93	128	89305	10.00	PPBV	0.02
46) 1,4-DIFLUOROBENZENE	11.86	114	383564	10.00	PPBV	0.01
63) CHLOROBENZENE-D5	16.38	82	184839	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	184581	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	98573	4.94	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 98.80%

Target Compounds						Qvalue
2) FREON 115	5.02	119	31299	4.72	PPBV	92
3) DICHLORODIFLUOROMETHANE	5.01	85	46016	5.12	PPBV	98
4) FREON 152A	5.13	65	39250	5.45	PPBV	99
5) CHLORODIFLUOROMETHANE	5.18	67	20247	5.65	PPBV	97
6) PROPYLENE	5.22	41	50156	5.88	PPBV	98
7) PROPANE	5.24	43	17885	5.93	PPBV	97
8) FREON 114	5.56	85	205156	5.56	PPBV	98
9) CHLOROMETHANE	5.47	52	19198	5.45	PPBV #	89
10) VINYL CHLORIDE	5.69	62	71446	5.34	PPBV	99
11) 1,3-BUTADIENE	5.83	54	52399	5.31	PPBV	98
12) n-BUTANE	5.88	43	95543	5.37	PPBV	100
13) BROMOMETHANE	6.11	94	74947	5.42	PPBV	100
14) CHLOROETHANE	6.28	64	42106	5.31	PPBV	100
15) FREON 123	6.75	83	186714	5.49	PPBV #	99
16) FREON 123A	6.81	117	111159	5.44	PPBV	98
17) TRICHLOROFLUOROMETHANE	7.05	101	223551	5.71	PPBV	100
18) ISOPROPYL ALCOHOL	7.10	45	97133	5.52	PPBV	100
19) ACETONE	6.88	58	30581	5.15	PPBV	97
20) PENTANE	7.39	42	58247	5.43	PPBV	99
21) TVHC as EQUIV PENTANE	7.39	TIC	401006m	5.41	PPBV	
22) ETHYL ETHER	7.40	74	29727	5.14	PPBV	99
23) IODOMETHANE	7.62	142	188674	5.44	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.68	96	63582	5.47	PPBV	100
25) CARBON DISULFIDE	8.13	76	191284	5.53	PPBV	100
26) ETHANOL	6.41	45	17482	5.24	PPBV	98
27) BROMOETHENE	6.64	106	79434	5.38	PPBV	99
28) METHYLENE CHLORIDE	7.79	84	56721	5.51	PPBV	99
29) 3-CHLOROPROPENE	7.90	76	28148	5.30	PPBV	99
30) FREON 113	8.04	151	113652	5.47	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	8.72	96	70520	5.27	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.70	59	110630	5.29	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.97	73	155214	5.07	PPBV	99
34) TETRAHYDROFURAN	10.49	42	44829	5.00	PPBV	99
35) HEXANE	9.95	57	82192	5.31	PPBV	99
36) VINYL ACETATE	9.04	86	13205	4.98	PPBV #	42
37) 1,1-DICHLOROETHANE	8.93	63	115164	5.42	PPBV	99
38) METHYL ETHYL KETONE	9.30	72	24688	5.04	PPBV	94
39) cis-1,2-DICHLOROETHYLENE	9.75	96	69421	5.27	PPBV	99
40) ETHYL ACETATE	9.95	61	13961	5.09	PPBV #	95
41) CHLOROFORM	10.05	83	133517	5.34	PPBV	100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25766.D Vial: 10
Acq On : 2 Oct 2009 9:00 am Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:04 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.84	57	95665	5.31	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.07	97	150642	5.37	PPBV		100
44) CARBON TETRACHLORIDE	11.69	117	161162	5.46	PPBV		99
45) 1,2-DICHLOROETHANE	10.81	62	90851	5.29	PPBV		99
47) BENZENE	11.54	78	193489	5.39	PPBV		100
48) CYCLOHEXANE	11.82	84	87404	5.49	PPBV		96
49) 2,3-DIMETHYLPENTANE	12.03	71	38322	5.33	PPBV		99
50) TRICHLOROETHYLENE	12.60	95	83477	5.42	PPBV		100
51) 1,2-DICHLOROPROPANE	12.36	63	61793	5.32	PPBV		100
52) BROMODICHLOROMETHANE	12.56	83	139931	5.43	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.62	57	232301	5.45	PPBV		100
54) 1,4-DIOXANE	12.62	88	33897	5.33	PPBV	#	17
55) METHYL METHACRYLATE	12.76	69	46229	4.82	PPBV		99
56) HEPTANE	12.87	43	80619	5.28	PPBV		99
57) TVHC as EQUIV HEPTANE	12.87	TIC	414704m	5.35	PPBV		
58) METHYL ISOBUTYL KETONE	13.50	43	88105	5.18	PPBV		99
59) cis-1,3-DICHLOROPROPENE	13.47	75	99148	5.18	PPBV		99
60) TOLUENE	14.50	92	134556	5.25	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.01	75	94457	5.14	PPBV		99
62) 1,1,2-TRICHLOROETHANE	14.20	83	61696	5.39	PPBV		99
64) 2-HEXANONE	14.75	58	43238	5.12	PPBV		99
65) TETRACHLOROETHYLENE	15.70	164	98557	5.67	PPBV		99
66) DIBROMOCHLOROMETHANE	14.95	129	141676	5.51	PPBV		99
67) 1,2-DIBROMOETHANE	15.22	107	105107	5.38	PPBV		100
68) OCTANE	15.49	43	99352	5.53	PPBV		99
69) 1,1,1,2-TETRACHLOROETHANE	16.40	131	95468	5.48	PPBV	#	99
70) CHLOROBENZENE	16.43	112	153065	5.52	PPBV		100
71) ETHYLBENZENE	16.82	91	261589	5.50	PPBV		100
72) m,p-XYLENE	17.02	106	198629	10.97	PPBV		97
73) o-XYLENE	17.53	106	92757	5.44	PPBV		99
74) STYRENE	17.41	104	131323	5.19	PPBV		100
75) NONANE	17.72	43	85752	5.30	PPBV		100
76) BROMOFORM	17.13	173	113654	5.31	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.52	83	98302	5.38	PPBV		99
79) ISOPROPYLBENZENE	18.15	105	252196	5.37	PPBV		99
80) 2-CHLOROTOLUENE	18.68	126	55985	5.33	PPBV		99
81) n-PROPYLBENZENE	18.71	120	60775	5.24	PPBV		96
82) 4-ETHYLTOLUENE	18.86	105	193170	5.05	PPBV		100
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	166564	5.18	PPBV		100
84) TERT-BUTYLBENZENE	19.39	134	39647	5.09	PPBV		99
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	143168	5.05	PPBV		99
86) m-DICHLOROBENZENE	19.58	146	79434	4.81	PPBV		100
87) BENZYL CHLORIDE	19.55	91	62720	4.44	PPBV		99
88) p-DICHLOROBENZENE	19.65	146	68629	4.76	PPBV		100
89) SEC-BUTYLBENZENE	19.69	134	41875	4.94	PPBV		95
90) p-ISOPROPYLTOLUENE	19.86	134	38671	4.88	PPBV		99
91) o-DICHLOROBENZENE	20.03	146	65422	4.82	PPBV		99
92) n-BUTYLBENZENE	20.33	134	23381	4.54	PPBV		96
93) HEXACHLOROBUTADIENE	22.41	225	16970	5.38	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25766.D Vial: 10
Acq On : 2 Oct 2009 9:00 am Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:04 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

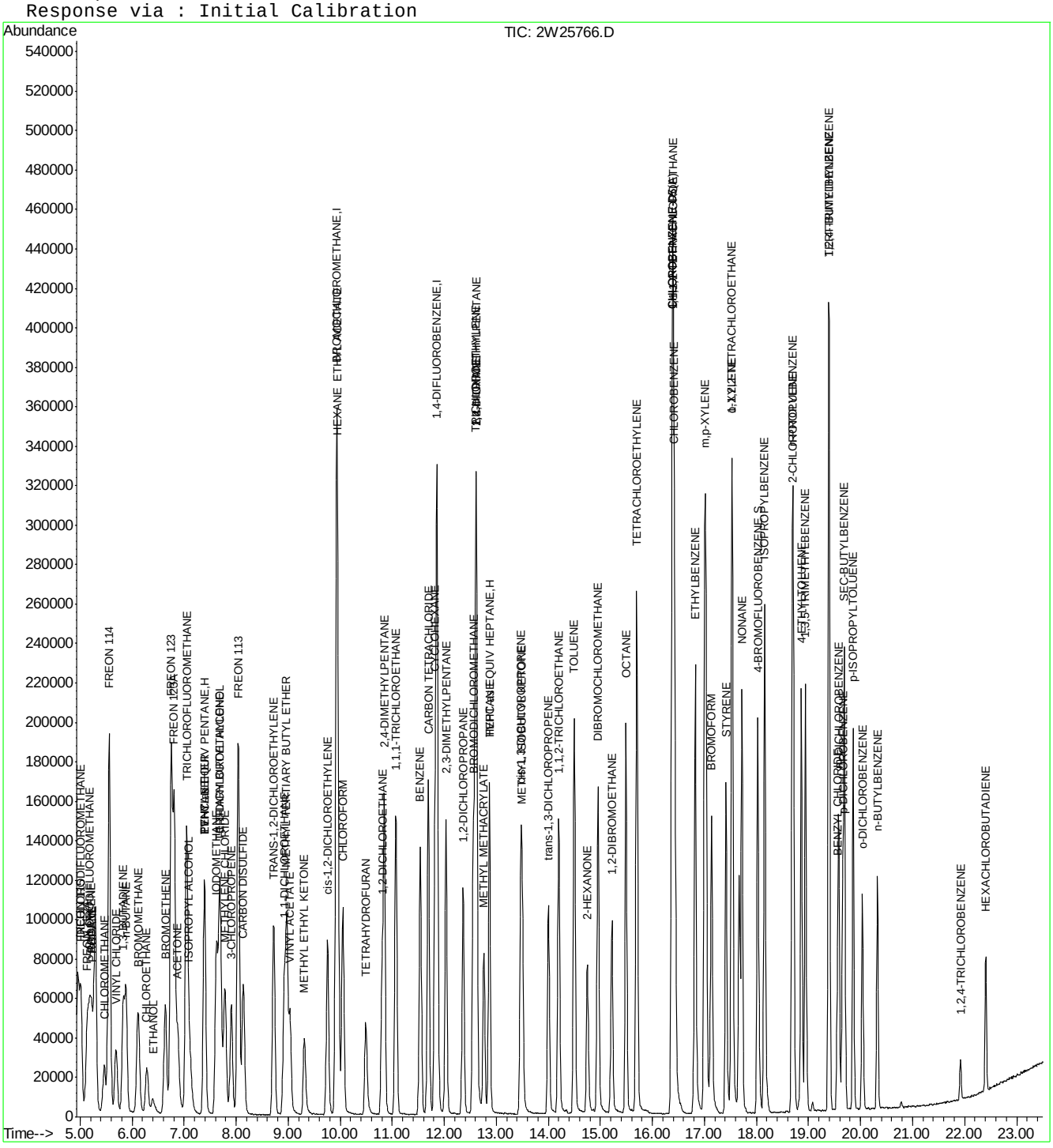
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	8812	4.82	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25766.D Vial: 10
Acq On : 2 Oct 2009 9:00 am Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:05 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration

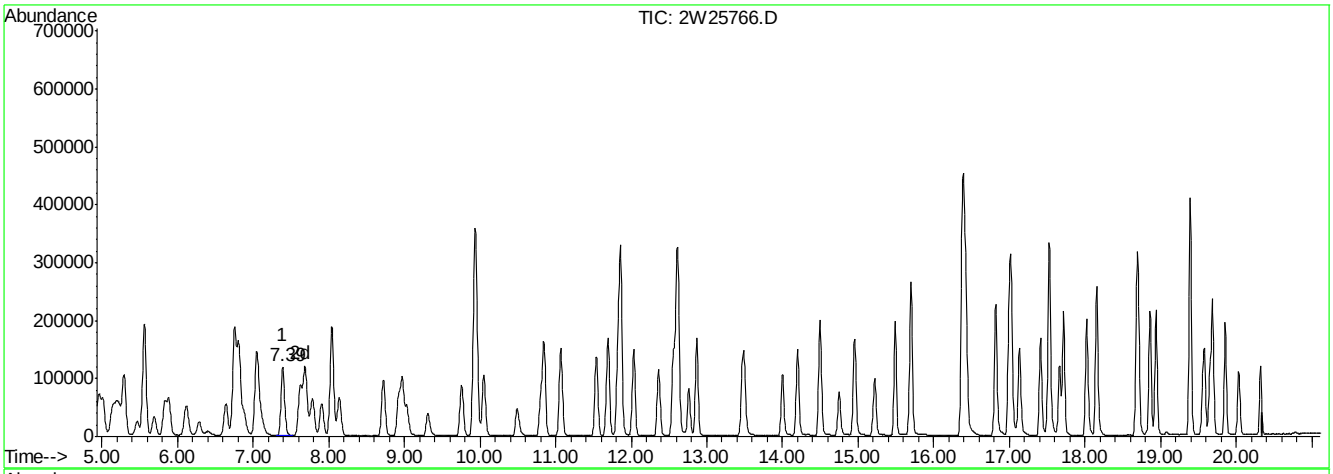


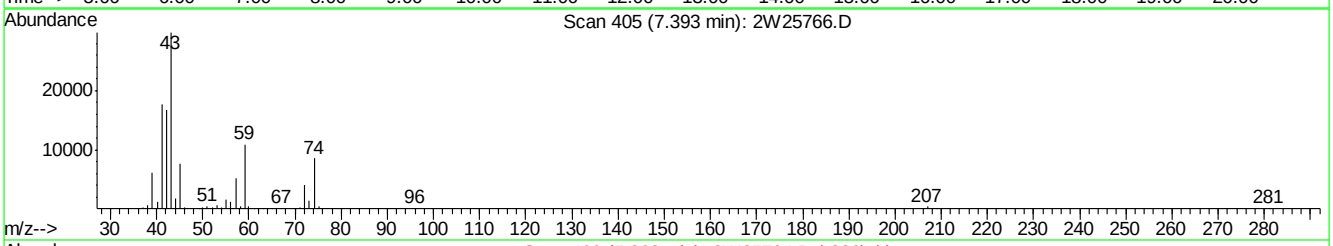
ACCUTEST Laboratories JA28238

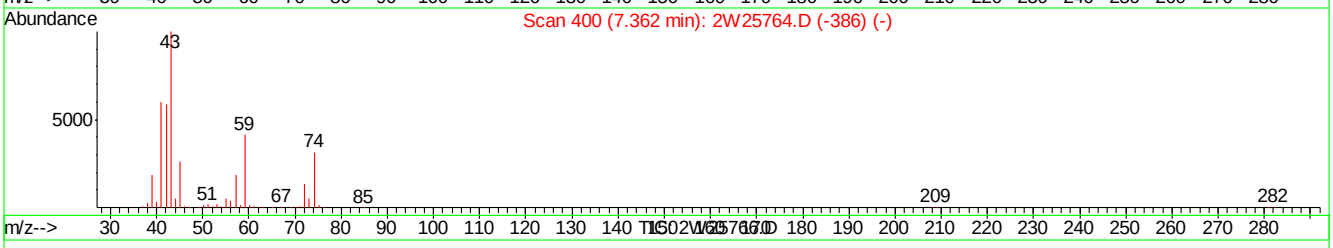
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25766.D Vial: 10
Acq On : 2 Oct 2009 9:00 am Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:05 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 5.41PPBV m

response 401006

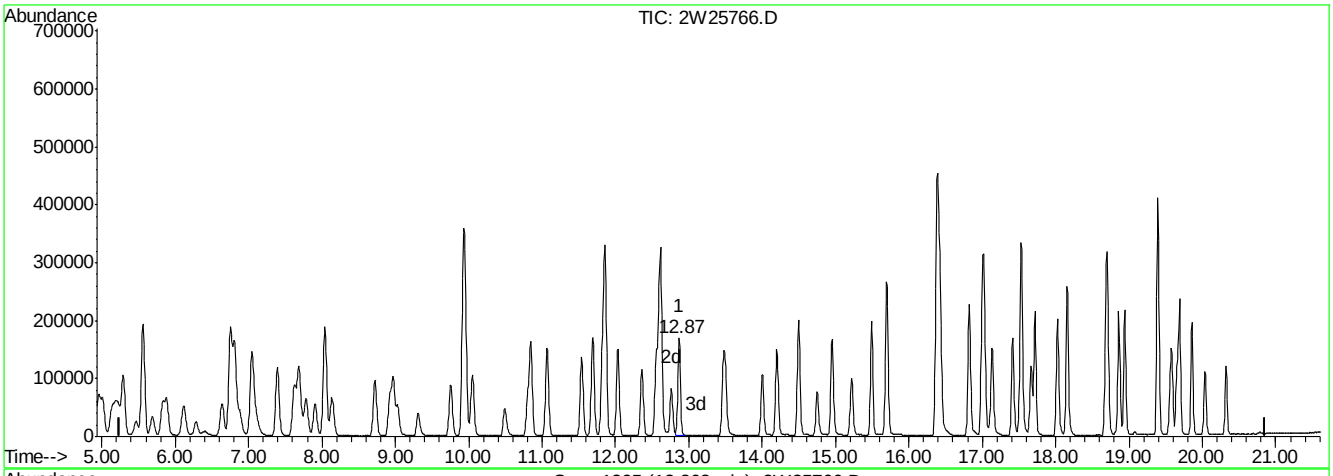
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

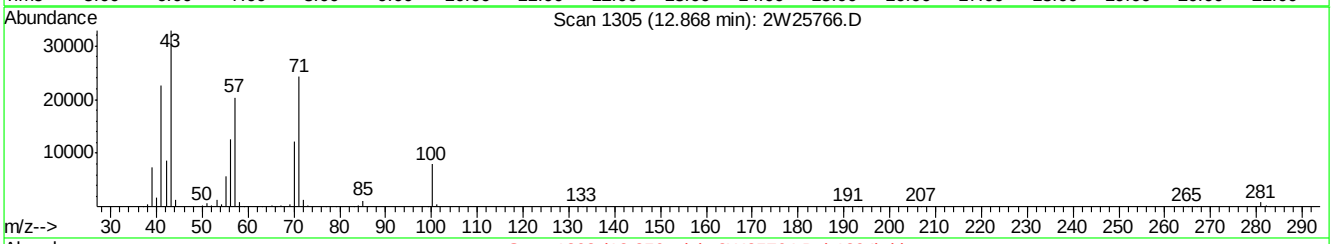
2W25766.D M2W1085.M Tue Oct 06 11:14:16 2009 MS2W

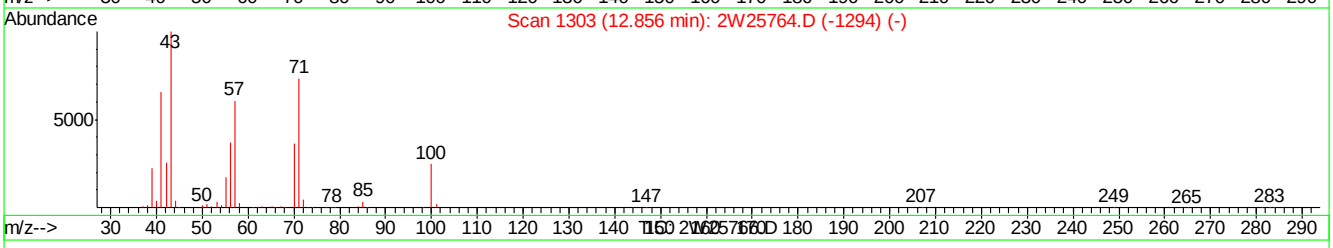
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25766.D Vial: 10
Acq On : 2 Oct 2009 9:00 am Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:05 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.87min 5.35PPBV m

response 414704

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25766.D M2W1085.M Tue Oct 06 11:14:20 2009 MS2W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu
10/12/09 11:38

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	89176	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	383799	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	165302	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	165179	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	72393	4.06	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 81.20%

Target Compounds						Qvalue
2) FREON 115	5.00	119	2517	0.38	PPBV	91
3) DICHLORODIFLUOROMETHANE	5.00	85	3092	0.34	PPBV	95
4) FREON 152A	5.11	65	1199m	0.17	PPBV	
5) CHLORODIFLUOROMETHANE	5.15	67	757	0.21	PPBV #	41
6) PROPYLENE	5.21	41	2184	0.26	PPBV	89
7) PROPANE	5.22	43	832	0.28	PPBV	91
8) FREON 114	5.53	85	7248	0.20	PPBV	98
9) CHLOROMETHANE	5.45	52	658m	0.19	PPBV	
10) VINYL CHLORIDE	5.67	62	2382	0.18	PPBV #	92
11) 1,3-BUTADIENE	5.80	54	1637	0.17	PPBV #	72
12) n-BUTANE	5.86	43	3654	0.21	PPBV #	93
13) BROMOMETHANE	6.10	94	2508	0.18	PPBV #	79
14) CHLOROETHANE	6.27	64	1303	0.16	PPBV	86
15) FREON 123	6.74	83	6273	0.18	PPBV #	81
16) FREON 123A	6.79	117	4053	0.20	PPBV	97
17) TRICHLOROFLUOROMETHANE	7.02	101	8138	0.21	PPBV	99
18) ISOPROPYL ALCOHOL	7.16	45	3351m	0.19	PPBV	
19) ACETONE	6.92	58	1152	0.19	PPBV #	71
20) PENTANE	7.37	42	2230	0.21	PPBV	92
21) TVHC as EQUIV PENTANE	7.37	TIC	15240m	0.21	PPBV	
22) ETHYL ETHER	7.44	74	867	0.15	PPBV #	1
23) IODOMETHANE	7.59	142	6369	0.18	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.67	96	2442	0.21	PPBV	93
25) CARBON DISULFIDE	8.12	76	6740	0.20	PPBV	84
27) BROMOETHENE	6.62	106	2694	0.18	PPBV	97
28) METHYLENE CHLORIDE	7.77	84	2523	0.25	PPBV	97
29) 3-CHLOROPROPENE	7.89	76	837	0.16	PPBV #	62
30) FREON 113	8.03	151	4371	0.21	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.71	96	2509	0.19	PPBV	93
32) TERTIARY BUTYL ALCOHOL	7.79	59	3638	0.17	PPBV	85
33) METHYL TERTIARY BUTYL ETHE	9.02	73	5619	0.18	PPBV	96
34) TETRAHYDROFURAN	10.54	42	1378	0.15	PPBV	95
35) HEXANE	9.94	57	2816	0.18	PPBV	98
36) VINYL ACETATE	9.06	86	292	0.11	PPBV #	1
37) 1,1-DICHLOROETHANE	8.91	63	4054	0.19	PPBV	98
38) METHYL ETHYL KETONE	9.35	72	619	0.13	PPBV #	84
39) cis-1,2-DICHLOROETHYLENE	9.74	96	2471	0.19	PPBV	89
40) ETHYL ACETATE	9.99	61	445	0.16	PPBV #	1
41) CHLOROFORM	10.04	83	4653	0.19	PPBV	95
42) 2,4-DIMETHYLPENTANE	10.84	57	2981	0.17	PPBV	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
43)	1,1,1-TRICHLOROETHANE	11.06	97	5308	0.19	PPBV		99
44)	CARBON TETRACHLORIDE	11.69	117	5555	0.19	PPBV		99
45)	1,2-DICHLOROETHANE	10.80	62	2827	0.16	PPBV		94
47)	BENZENE	11.52	78	6601	0.18	PPBV		98
48)	CYCLOHEXANE	11.81	84	3411	0.21	PPBV	#	7
49)	2,3-DIMETHYLPENTANE	12.02	71	1172	0.16	PPBV	#	78
50)	TRICHLOROETHYLENE	12.59	95	2875	0.19	PPBV		99
51)	1,2-DICHLOROPROPANE	12.35	63	2178	0.19	PPBV		91
52)	BROMODICHLOROMETHANE	12.55	83	4335	0.17	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.61	57	7683	0.18	PPBV		96
54)	1,4-DIOXANE	12.72	88	900	0.14	PPBV	#	1
55)	METHYL METHACRYLATE	12.78	69	1247	0.13	PPBV		96
56)	HEPTANE	12.86	43	2536	0.17	PPBV		96
57)	TVHC as EQUIV HEPTANE	12.86	TIC	12482m	0.16	PPBV		
58)	METHYL ISOBUTYL KETONE	13.52	43	2646	0.16	PPBV		91
59)	cis-1,3-DICHLOROPROPENE	13.46	75	2803	0.15	PPBV		87
60)	TOLUENE	14.50	92	3900	0.15	PPBV		91
61)	trans-1,3-DICHLOROPROPENE	13.99	75	2553	0.14	PPBV		94
62)	1,1,2-TRICHLOROETHANE	14.19	83	1925	0.17	PPBV		98
64)	2-HEXANONE	14.78	58	1071	0.14	PPBV		90
65)	TETRACHLOROETHYLENE	15.70	164	3212	0.21	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.95	129	3596	0.16	PPBV		95
67)	1,2-DIBROMOETHANE	15.22	107	2780	0.16	PPBV	#	98
68)	OCTANE	15.49	43	2839	0.18	PPBV		92
69)	1,1,1,2-TETRACHLOROETHANE	16.40	131	2959	0.19	PPBV	#	93
70)	CHLOROBENZENE	16.43	112	4693	0.19	PPBV		91
71)	ETHYLBENZENE	16.82	91	7278	0.17	PPBV		97
72)	m,p-XYLENE	17.00	106	5605	0.35	PPBV		87
73)	o-XYLENE	17.53	106	2713	0.18	PPBV		94
74)	STYRENE	17.41	104	2852	0.13	PPBV		99
75)	NONANE	17.72	43	2801	0.19	PPBV		91
76)	BROMOFORM	17.13	173	2742	0.14	PPBV		97
78)	1,1,2,2-TETRACHLOROETHANE	17.52	83	3556	0.22	PPBV		97
79)	ISOPROPYLBENZENE	18.15	105	8009	0.19	PPBV		96
80)	2-CHLOROTOLUENE	18.69	126	1751	0.19	PPBV	#	94
81)	n-PROPYLBENZENE	18.70	120	1686	0.16	PPBV		78
82)	4-ETHYLTOLUENE	18.86	105	5348	0.16	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.94	105	5511	0.19	PPBV		99
84)	TERT-BUTYLBENZENE	19.39	134	1462	0.21	PPBV		97
85)	1,2,4-TRIMETHYLBENZENE	19.40	105	4695	0.19	PPBV		88
86)	m-DICHLOROBENZENE	19.58	146	2701	0.18	PPBV		90
87)	BENZYL CHLORIDE	19.56	91	2201	0.17	PPBV		95
88)	p-DICHLOROBENZENE	19.66	146	2613	0.20	PPBV		87
89)	SEC-BUTYLBENZENE	19.69	134	1558	0.21	PPBV		96
90)	p-ISOPROPYLTOLUENE	19.86	134	1320	0.19	PPBV		94
91)	o-DICHLOROBENZENE	20.04	146	2360	0.19	PPBV		88
92)	n-BUTYLBENZENE	20.33	134	922	0.20	PPBV		99
93)	HEXACHLOROBUTADIENE	22.41	225	1422	0.50	PPBV	#	77
94)	1,2,4-TRICHLOROBENZENE	21.93	180	462	0.28	PPBV		86

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue

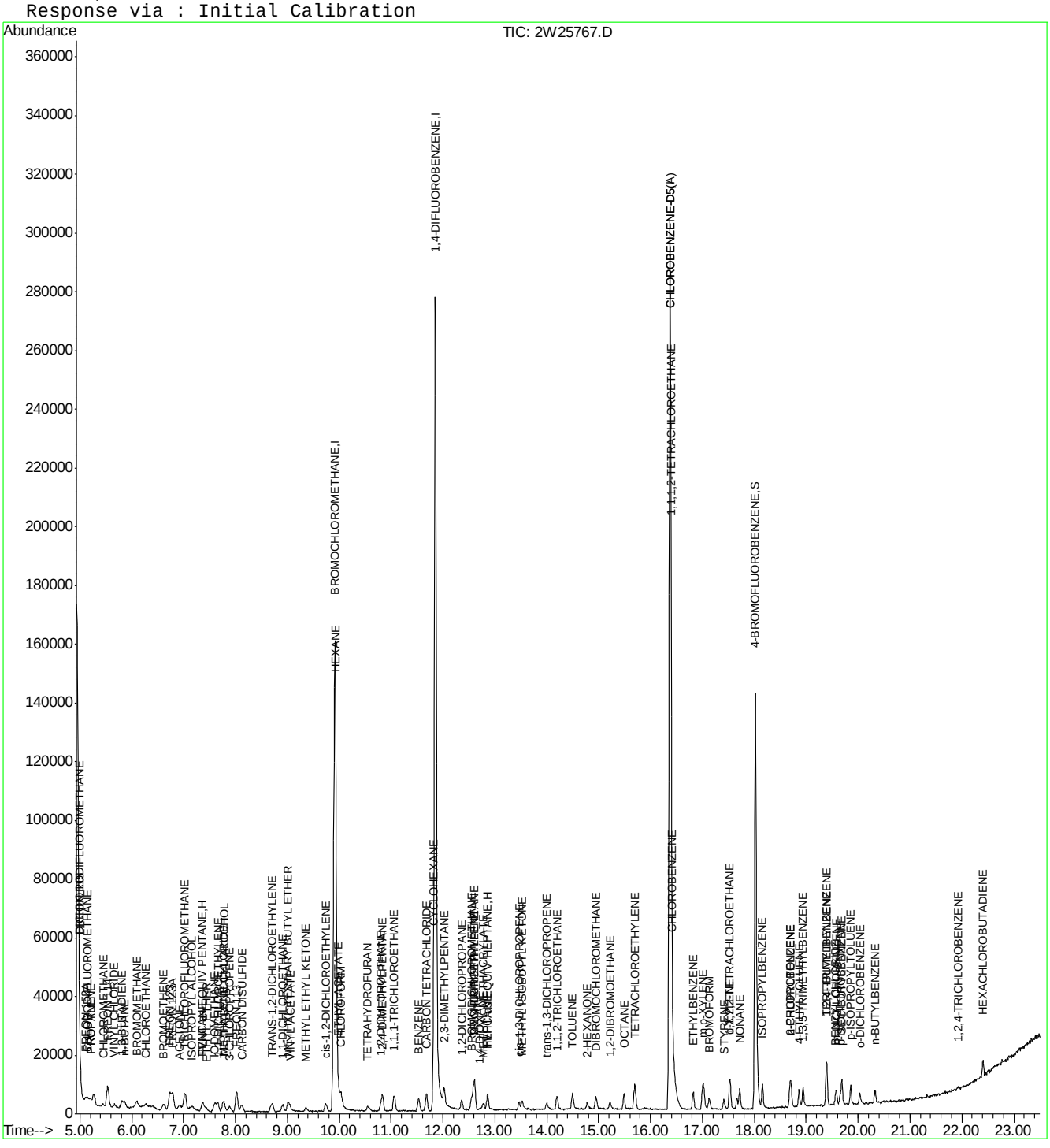
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:16 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration

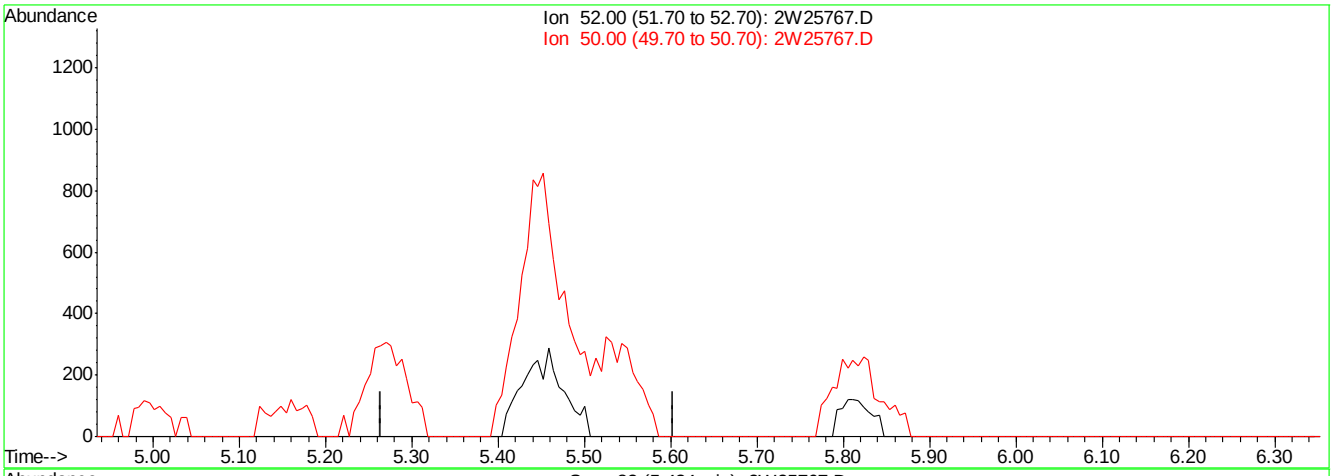


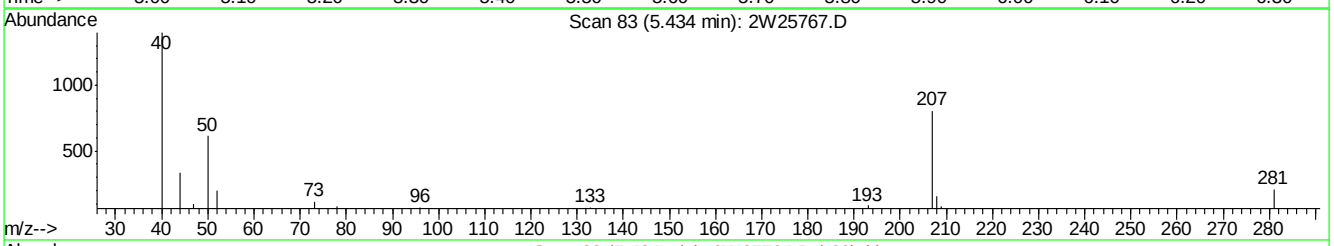
ACCUTEST Laboratories JA28238

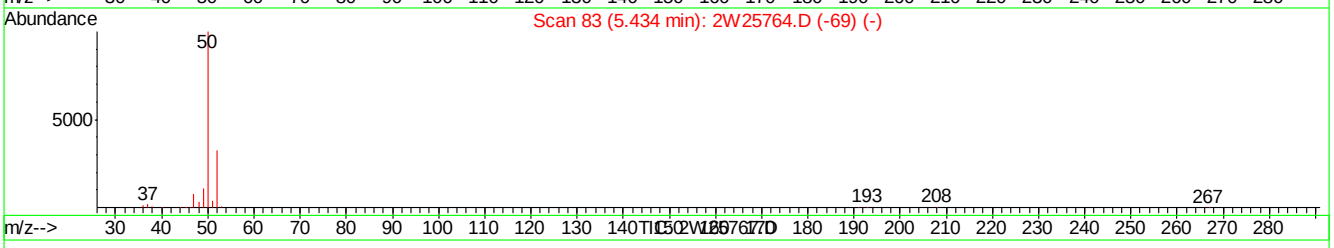
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 30 Sep 2009 11:33 pm Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 1 9:53 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Oct 01 09:50:11 2009
Response via : Multiple Level Calibration







(9) CHLOROMETHANE

5.43min 0.00PPBV

response 0

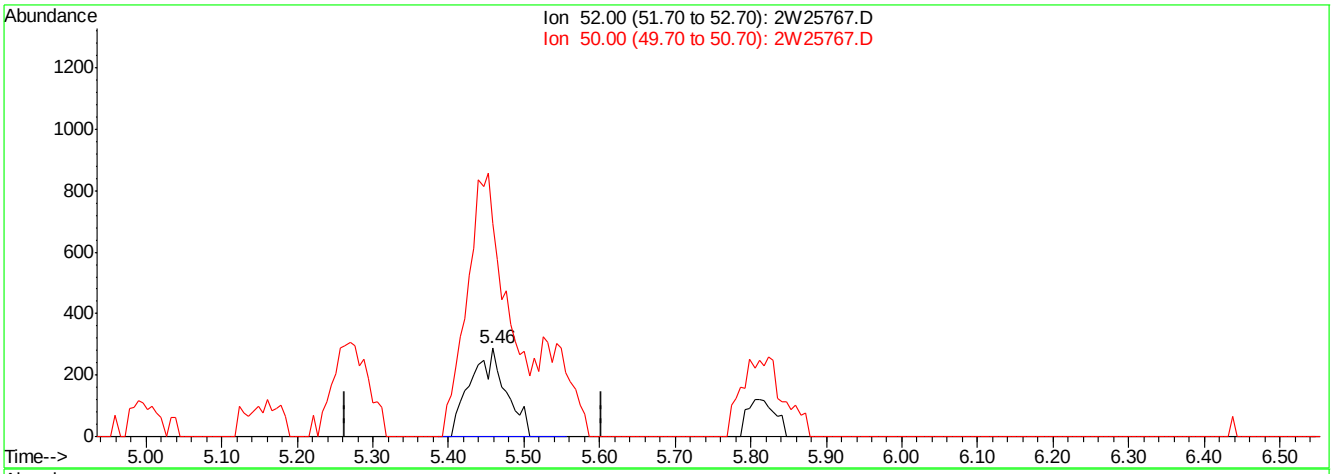
Ion	Exp%	Act%
52.00	100	0.00
50.00	304.40	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

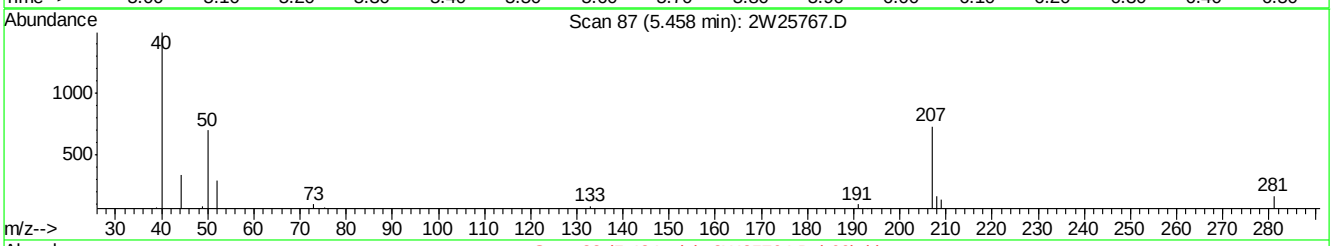
2W25767.D M2W1085.M Thu Oct 01 09:53:49 2009 MS2W

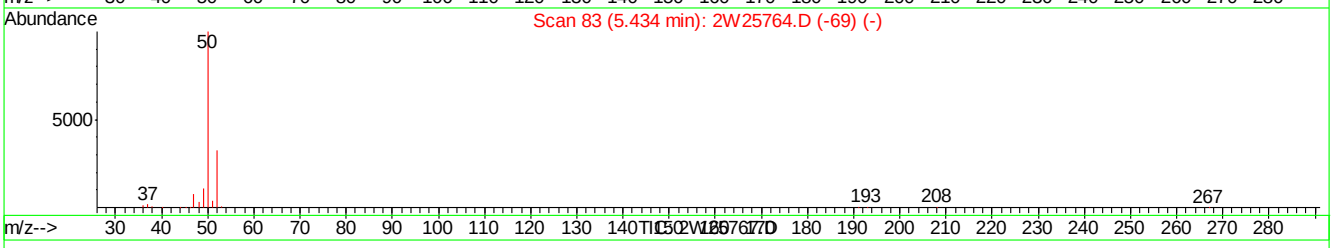
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 30 Sep 2009 11:33 pm Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 1 9:53 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Thu Oct 01 09:50:11 2009
Response via : Multiple Level Calibration







(9) CHLOROMETHANE

5.46min 0.20PPBV m

response 933

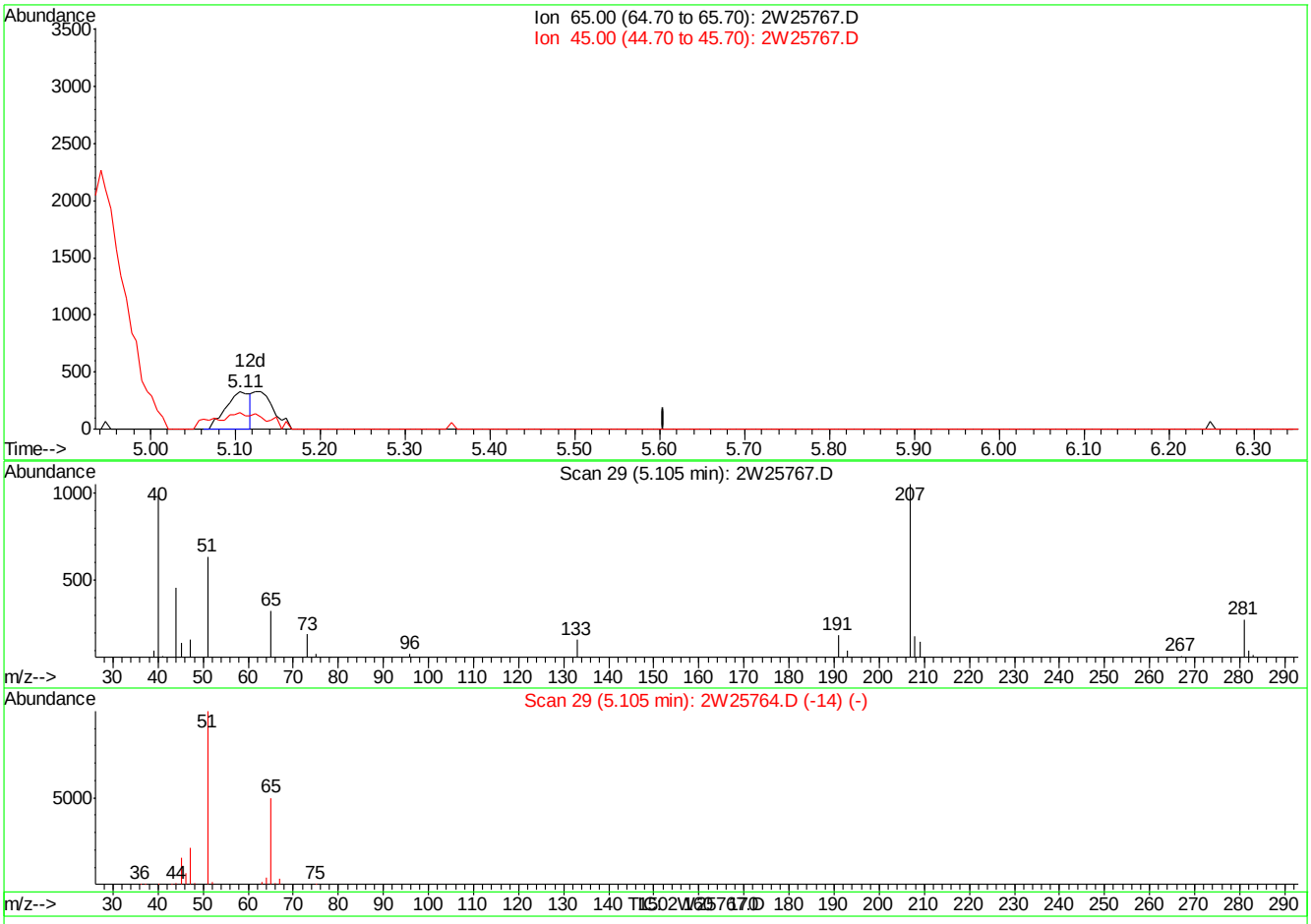
Ion	Exp%	Act%
52.00	100	100
50.00	304.40	241.46#
0.00	0.00	0.00
0.00	0.00	0.00

2W25767.D M2W1085.M Thu Oct 01 09:53:54 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:01 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration



(4) FREON 152A

5.11min 0.09PPBV

response 667

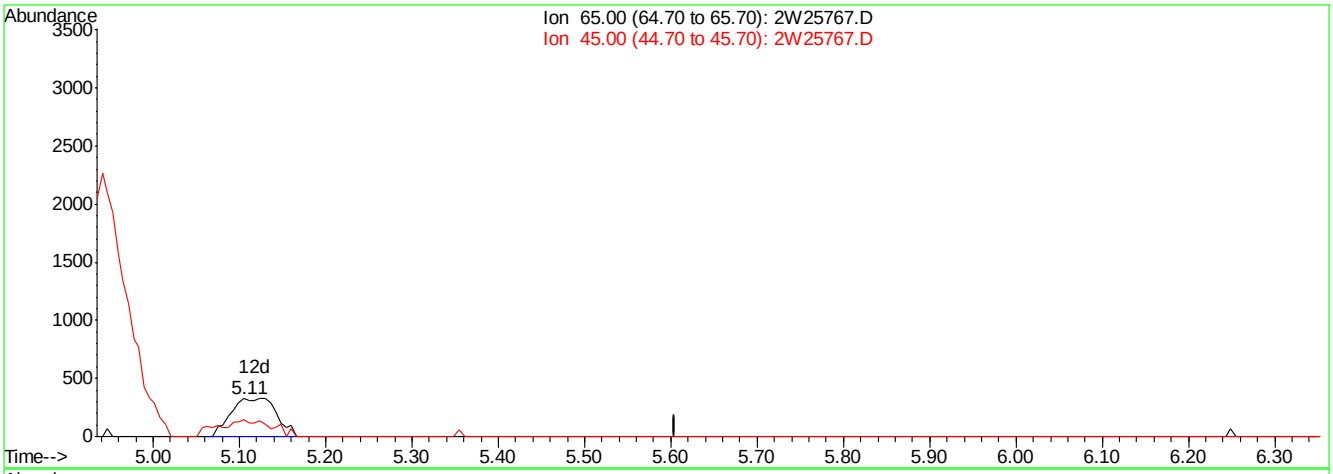
Ion	Exp%	Act%
65.00	100	100
45.00	30.30	91.45#
0.00	0.00	0.00
0.00	0.00	0.00

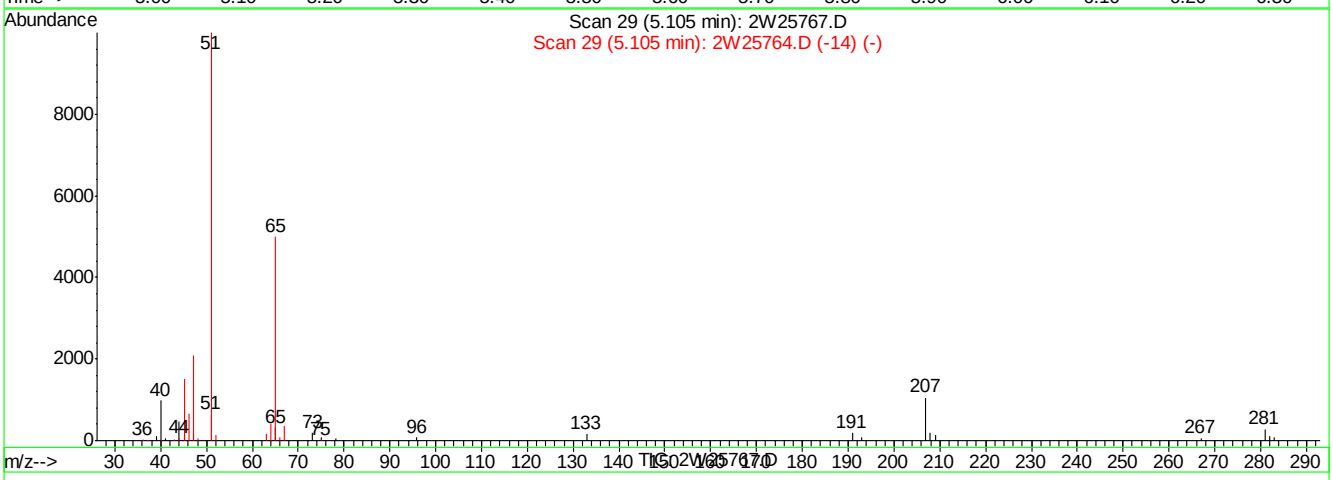
2W25767.D M2W1085.M Mon Oct 05 09:15:18 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:15 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration





(4) FREON 152A

5.11min 0.17PPBV m

response 1199

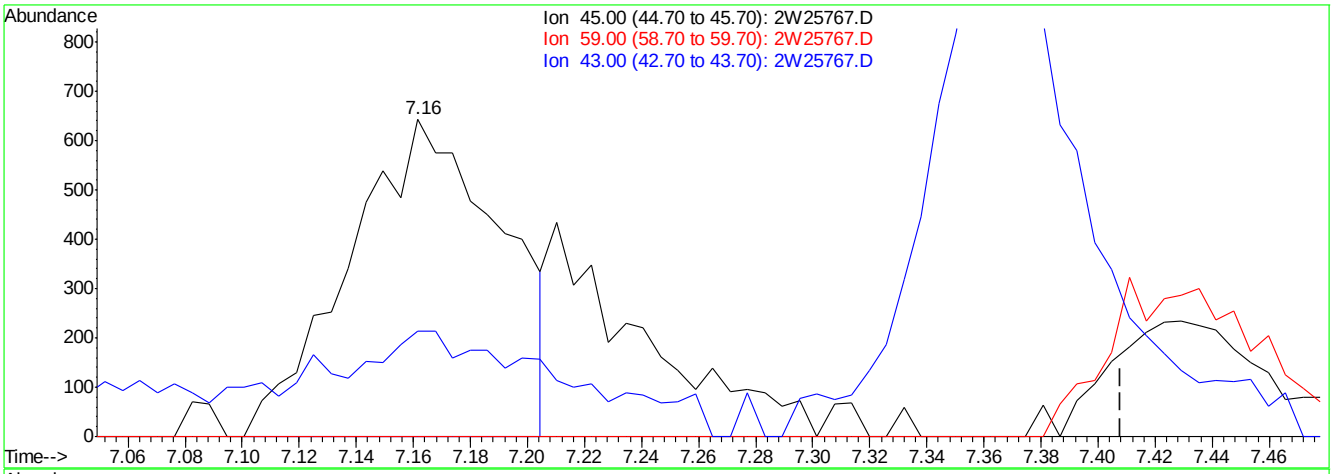
Ion	Exp%	Act%
65.00	100	100
45.00	30.30	50.88#
0.00	0.00	0.00
0.00	0.00	0.00

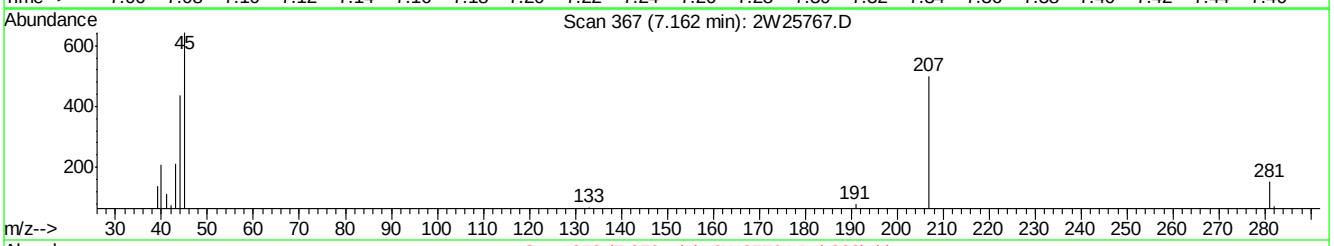
2W25767.D M2W1085.M Mon Oct 05 09:15:23 2009 MS2W

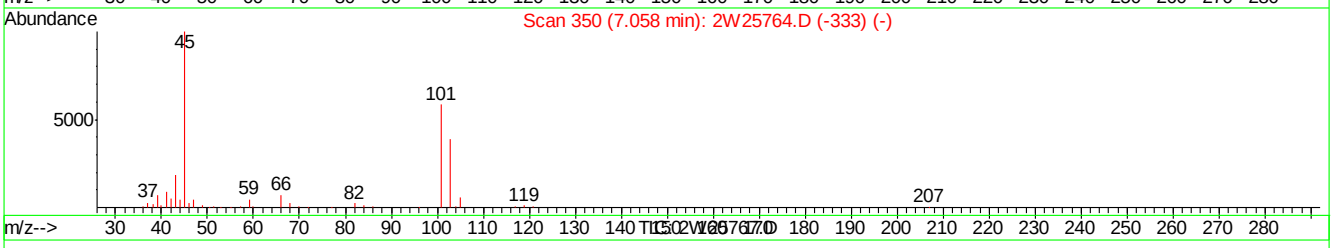
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:15 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration







(18) ISOPROPYL ALCOHOL

7.16min 0.14PPBV

response 2378

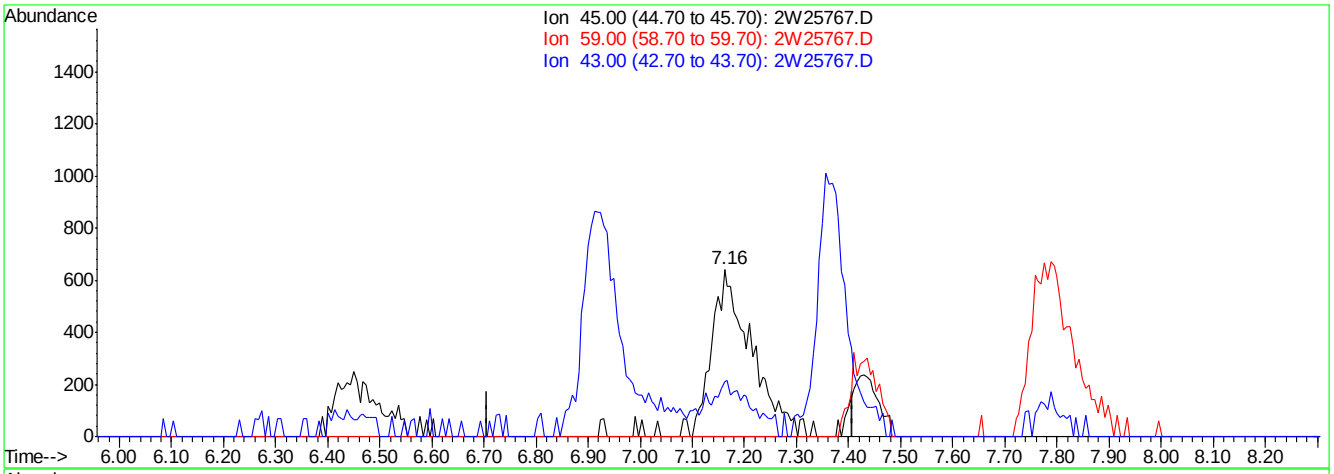
Ion	Exp%	Act%
45.00	100	100
59.00	4.70	0.00
43.00	21.30	33.13
0.00	0.00	0.00

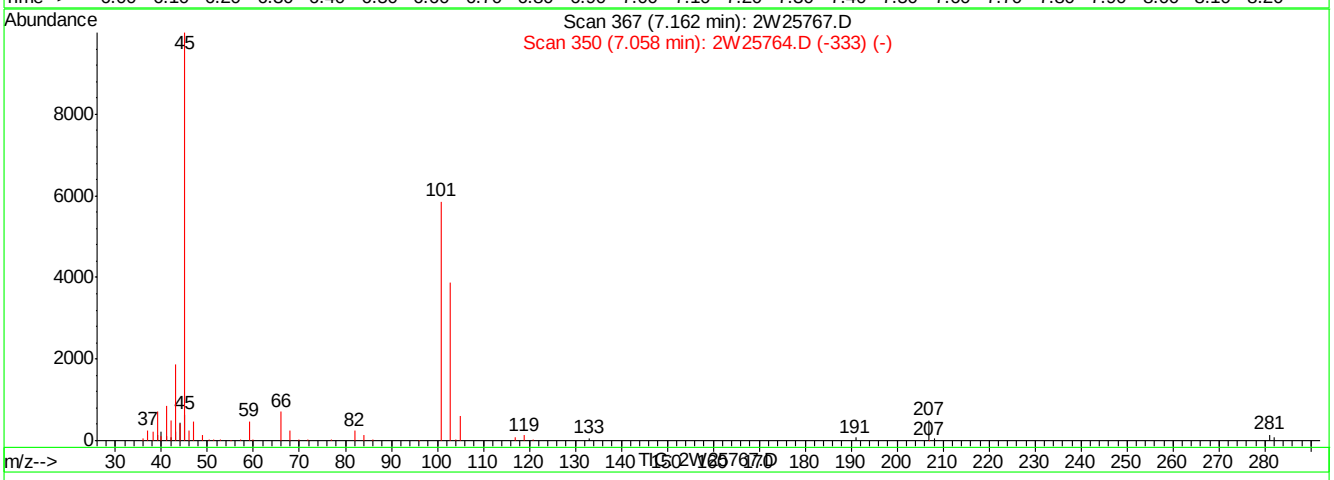
2W25767.D M2W1085.M Mon Oct 05 09:16:09 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:16 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration





(18) ISOPROPYL ALCOHOL

7.16min 0.19PPBV m

response 3351

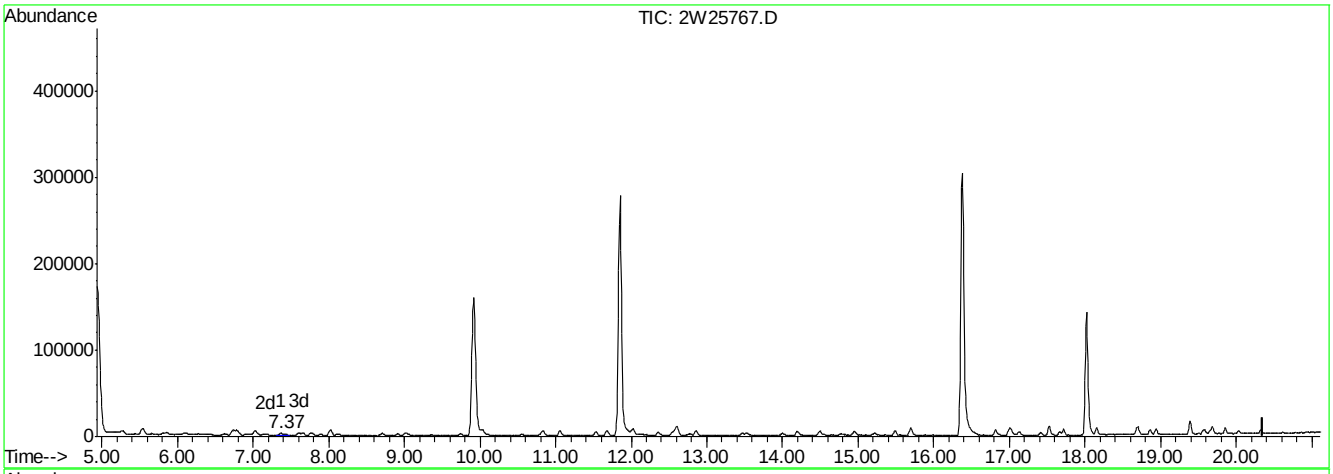
Ion	Exp%	Act%
45.00	100	100
59.00	4.70	0.00
43.00	21.30	33.13
0.00	0.00	0.00

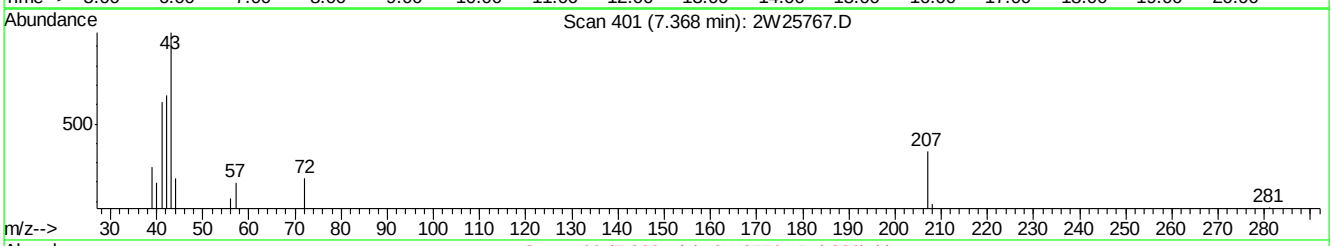
2W25767.D M2W1085.M Mon Oct 05 09:16:14 2009 MS2W

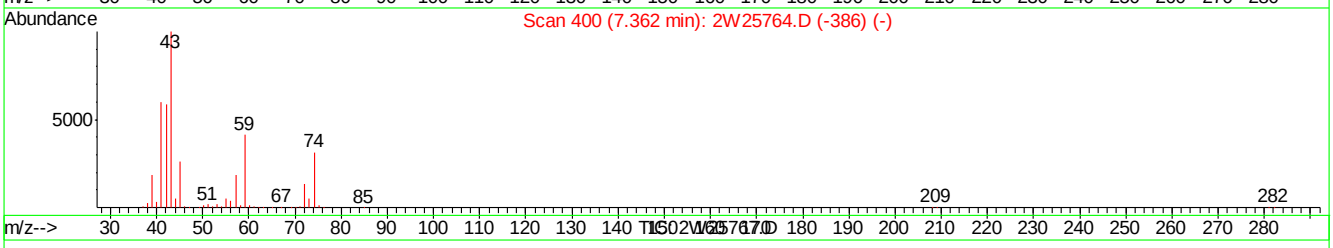
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:16 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.37min 0.21PPBV m

response 15240

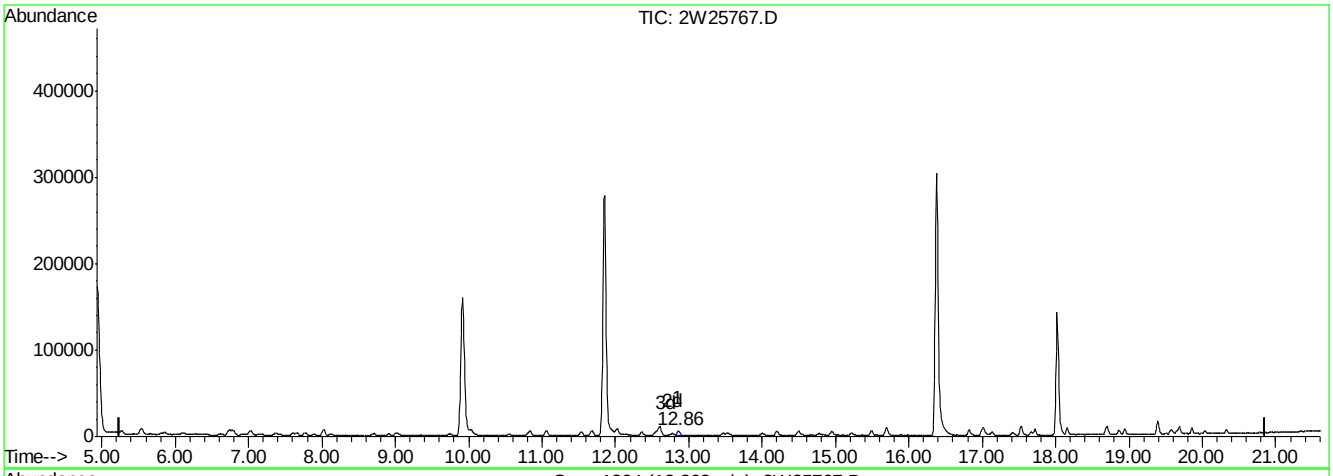
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

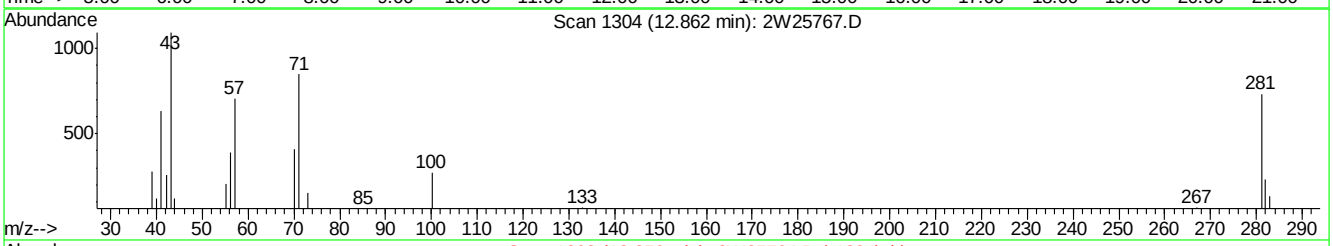
2W25767.D M2W1085.M Tue Oct 06 11:14:27 2009 MS2W

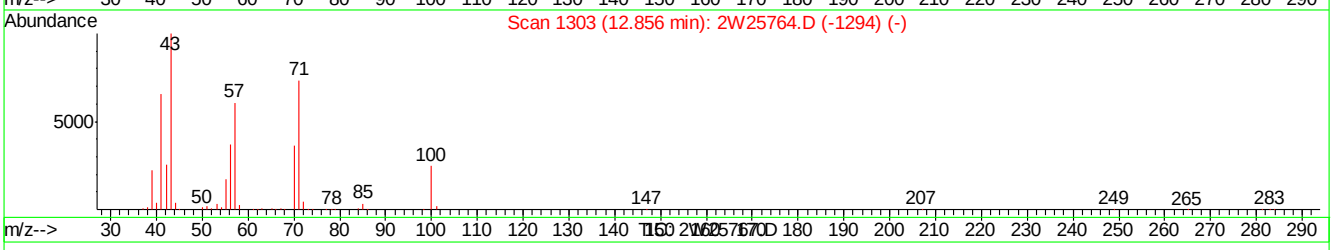
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25767.D Vial: 9
Acq On : 2 Oct 2009 9:46 am Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:16 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 0.16PPBV m

response 12482

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25767.D M2W1085.M Tue Oct 06 11:14:30 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25768.D Vial: 10
Acq On : 2 Oct 2009 10:30 am Operator: YOUMINH
Sample : IC1085-20 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:09 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	85573	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	374084	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	193281	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	193281	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	103217	4.95	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 99.00%

Target Compounds						Qvalue
2) FREON 115	4.99	119	126919	19.97	PPBV	98
3) DICHLORODIFLUOROMETHANE	4.99	85	175467	20.39	PPBV	99
4) FREON 152A	5.11	65	130011	18.84	PPBV	99
5) CHLORODIFLUOROMETHANE	5.15	67	64550	18.80	PPBV	99
6) PROPYLENE	5.20	41	150636	18.44	PPBV	99
7) PROPANE	5.21	43	52577	18.19	PPBV	100
8) FREON 114	5.53	85	634441	17.95	PPBV	99
9) CHLOROMETHANE	5.43	52	62958	18.64	PPBV	92
10) VINYL CHLORIDE	5.67	62	230694	17.98	PPBV	99
11) 1,3-BUTADIENE	5.81	54	162800	17.23	PPBV	99
12) n-BUTANE	5.85	43	294788	17.30	PPBV	100
13) BROMOMETHANE	6.08	94	244050	18.43	PPBV	100
14) CHLOROETHANE	6.26	64	140094	18.45	PPBV	100
15) FREON 123	6.72	83	579083	17.78	PPBV #	99
16) FREON 123A	6.78	117	359502	18.36	PPBV	97
17) TRICHLOROFLUOROMETHANE	7.02	101	693623	18.48	PPBV	100
18) ISOPROPYL ALCOHOL	7.07	45	335928	19.94	PPBV	99
19) ACETONE	6.83	58	110828	19.47	PPBV	99
20) PENTANE	7.36	42	185605	18.06	PPBV	97
21) TVHC as EQUIV PENTANE	7.36	TIC	1342268m	18.89	PPBV	
22) ETHYL ETHER	7.36	74	106558	19.24	PPBV	99
23) IODOMETHANE	7.60	142	622040	18.71	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.65	96	209844	18.85	PPBV	100
25) CARBON DISULFIDE	8.11	76	627203	18.93	PPBV	99
26) ETHANOL	6.35	45	63420	19.85	PPBV	100
27) BROMOETHENE	6.61	106	261820	18.50	PPBV	99
28) METHYLENE CHLORIDE	7.76	84	188387	19.11	PPBV	99
29) 3-CHLOROPROPENE	7.88	76	98435	19.34	PPBV	99
30) FREON 113	8.02	151	370302	18.60	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.70	96	245023	19.10	PPBV	100
32) TERTIARY BUTYL ALCOHOL	7.67	59	397344	19.83	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.94	73	602289	20.54	PPBV	100
34) TETRAHYDROFURAN	10.46	42	181570	21.13	PPBV	99
35) HEXANE	9.94	57	281016	18.95	PPBV	98
36) VINYL ACETATE	9.01	86	50476	19.86	PPBV	99
37) 1,1-DICHLOROETHANE	8.90	63	384378	18.89	PPBV	100
38) METHYL ETHYL KETONE	9.28	72	102073	21.74	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	9.74	96	239272	18.95	PPBV	99
40) ETHYL ACETATE	9.92	61	54730	20.82	PPBV #	91
41) CHLOROFORM	10.04	83	456717	19.07	PPBV	99

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25768.D Vial: 10
Acq On : 2 Oct 2009 10:30 am Operator: YOUMINH
Sample : IC1085-20 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:09 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.84	57	326776	18.93	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.06	97	506394	18.85	PPBV		99
44) CARBON TETRACHLORIDE	11.68	117	529016	18.71	PPBV		99
45) 1,2-DICHLOROETHANE	10.79	62	320497	19.47	PPBV		100
47) BENZENE	11.53	78	654650	18.70	PPBV		99
48) CYCLOHEXANE	11.81	84	291840	18.79	PPBV		97
49) 2,3-DIMETHYLPENTANE	12.02	71	135761	19.36	PPBV		97
50) TRICHLOROETHYLENE	12.59	95	284030	18.90	PPBV		99
51) 1,2-DICHLOROPROPANE	12.36	63	215975	19.05	PPBV		99
52) BROMODICHLOROMETHANE	12.55	83	478242	19.03	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	765921	18.44	PPBV		99
54) 1,4-DIOXANE	12.60	88	127670	20.57	PPBV		96
55) METHYL METHACRYLATE	12.75	69	200456	21.45	PPBV		99
56) HEPTANE	12.86	43	283789	19.04	PPBV		99
57) TVHC as EQUIV HEPTANE	12.86	TIC	1441539m	19.09	PPBV		
58) METHYL ISOBUTYL KETONE	13.49	43	329619	19.86	PPBV		99
59) cis-1,3-DICHLOROPROPENE	13.46	75	357592	19.14	PPBV		98
60) TOLUENE	14.49	92	460315	18.42	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.00	75	353222	19.72	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.20	83	208384	18.68	PPBV		99
64) 2-HEXANONE	14.75	58	181436	20.54	PPBV		99
65) TETRACHLOROETHYLENE	15.70	164	327770	18.02	PPBV		100
66) DIBROMOCHLOROMETHANE	14.95	129	492593	18.33	PPBV		99
67) 1,2-DIBROMOETHANE	15.22	107	381993	18.68	PPBV		100
68) OCTANE	15.49	43	341722	18.18	PPBV		98
69) 1,1,1,2-TETRACHLOROETHANE	16.41	131	330356	18.12	PPBV	#	99
70) CHLOROBENZENE	16.43	112	517389	17.83	PPBV		99
71) ETHYLBENZENE	16.83	91	882847	17.76	PPBV		99
72) m,p-XYLENE	17.02	106	678967	35.85	PPBV		96
73) o-XYLENE	17.54	106	320039	17.95	PPBV		99
74) STYRENE	17.42	104	492591	18.63	PPBV		99
75) NONANE	17.72	43	312334	18.46	PPBV		98
76) BROMOFORM	17.14	173	422785	18.91	PPBV		100
78) 1,1,2,2-TETRACHLOROETHANE	17.53	83	347748	18.21	PPBV		99
79) ISOPROPYLBENZENE	18.16	105	888002	18.10	PPBV		99
80) 2-CHLOROTOLUENE	18.69	126	206401	18.78	PPBV	#	91
81) n-PROPYLBENZENE	18.71	120	231516	19.10	PPBV		88
82) 4-ETHYLTOLUENE	18.87	105	762668	19.06	PPBV		98
83) 1,3,5-TRIMETHYLBENZENE	18.95	105	642293	19.09	PPBV		98
84) TERT-BUTYLBENZENE	19.40	134	163306	20.07	PPBV		96
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	590146	19.92	PPBV		98
86) m-DICHLOROBENZENE	19.59	146	349478	20.23	PPBV		100
87) BENZYL CHLORIDE	19.56	91	343460	23.26	PPBV		100
88) p-DICHLOROBENZENE	19.66	146	314529	20.86	PPBV		99
89) SEC-BUTYLBENZENE	19.69	134	176275	19.90	PPBV		94
90) p-ISOPROPYLTOLUENE	19.86	134	175433	21.18	PPBV		95
91) o-DICHLOROBENZENE	20.04	146	296020	20.87	PPBV		99
92) n-BUTYLBENZENE	20.33	134	123432	22.93	PPBV		97
93) HEXACHLOROBUTADIENE	22.41	225	77836	23.62	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25768.D Vial: 10
Acq On : 2 Oct 2009 10:30 am Operator: YOUMINH
Sample : IC1085-20 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:09 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	51912	27.17	PPBV	98

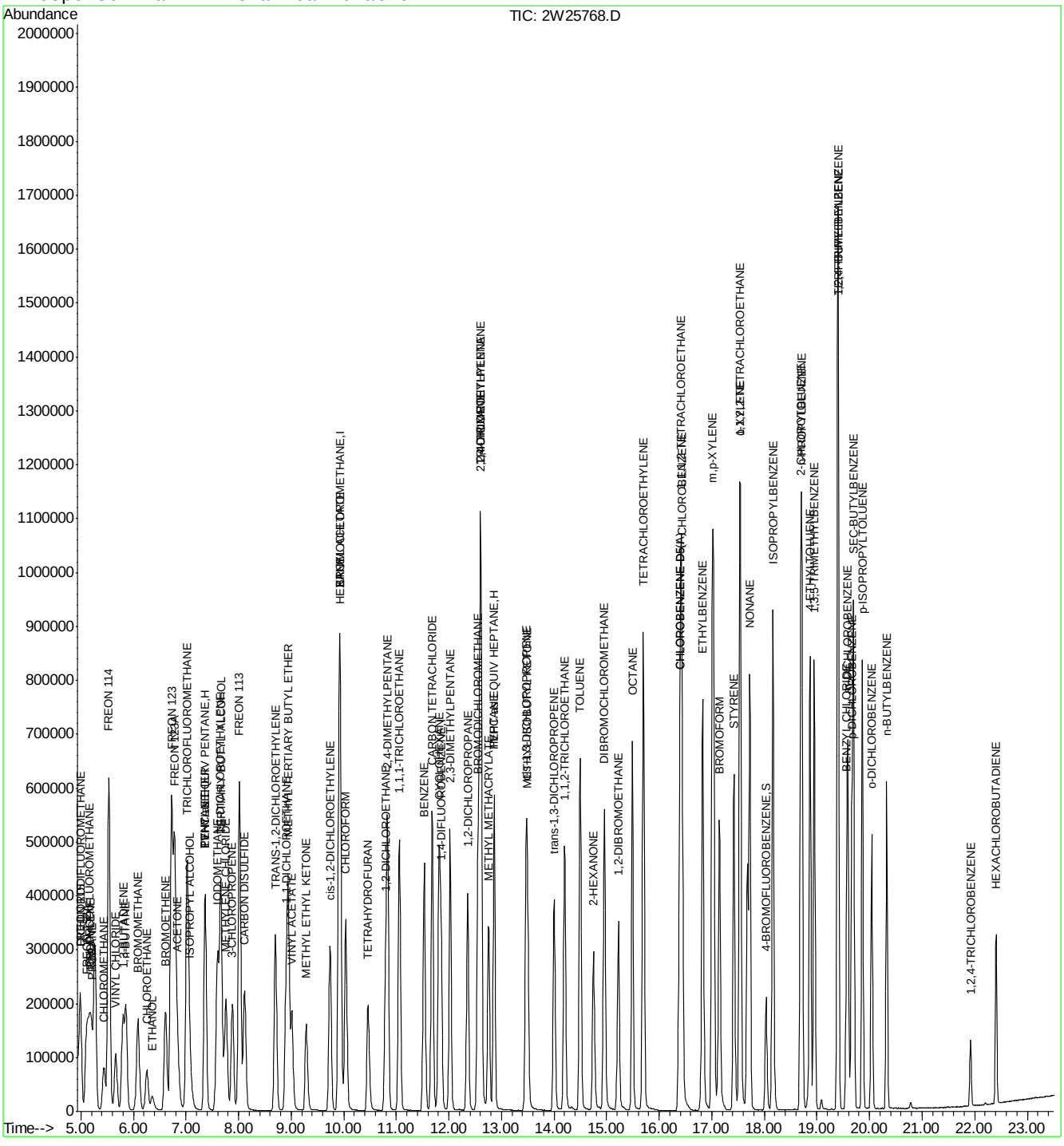
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25768.D
Acq On : 2 Oct 2009 10:30 am
Sample : IC1085-20
Misc : MS49009,V2W1085,,,,,1
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:18 2009

Vial: 10
Operator: YOUMINH
Inst : MS2W
Multiplr: 1.00
Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration

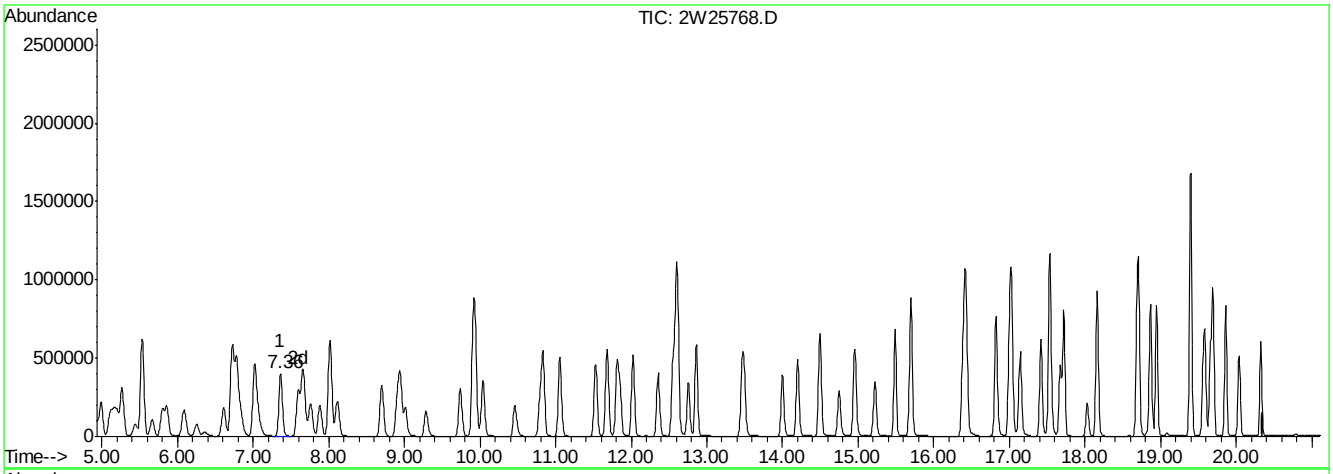


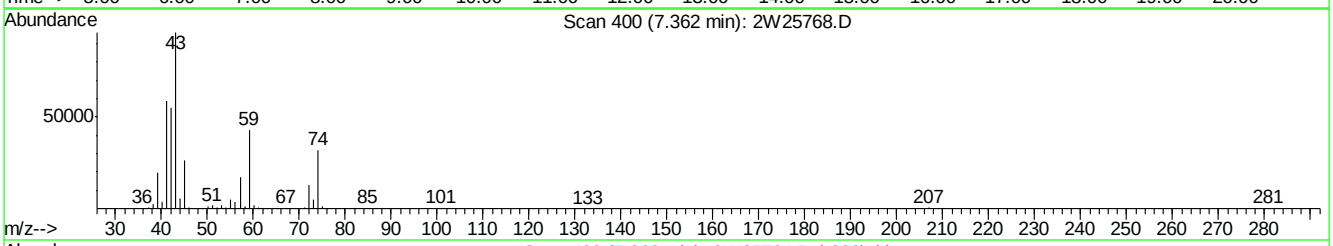
ACCUTEST Laboratories JA28238

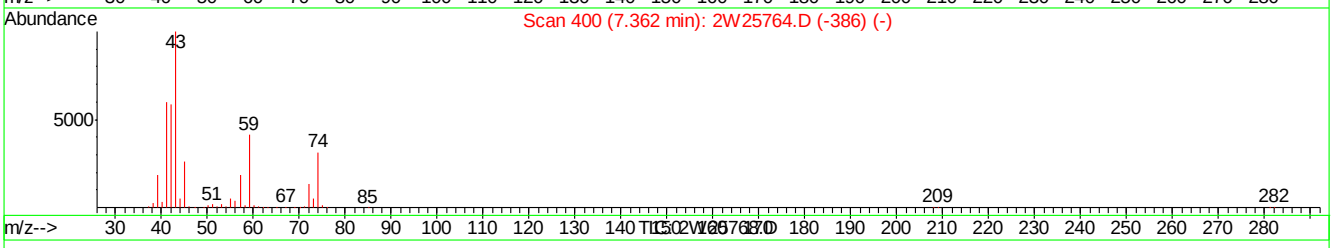
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25768.D Vial: 10
Acq On : 2 Oct 2009 10:30 am Operator: YOUMINH
Sample : IC1085-20 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:18 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.36min 18.89PPBV m

response 1342268

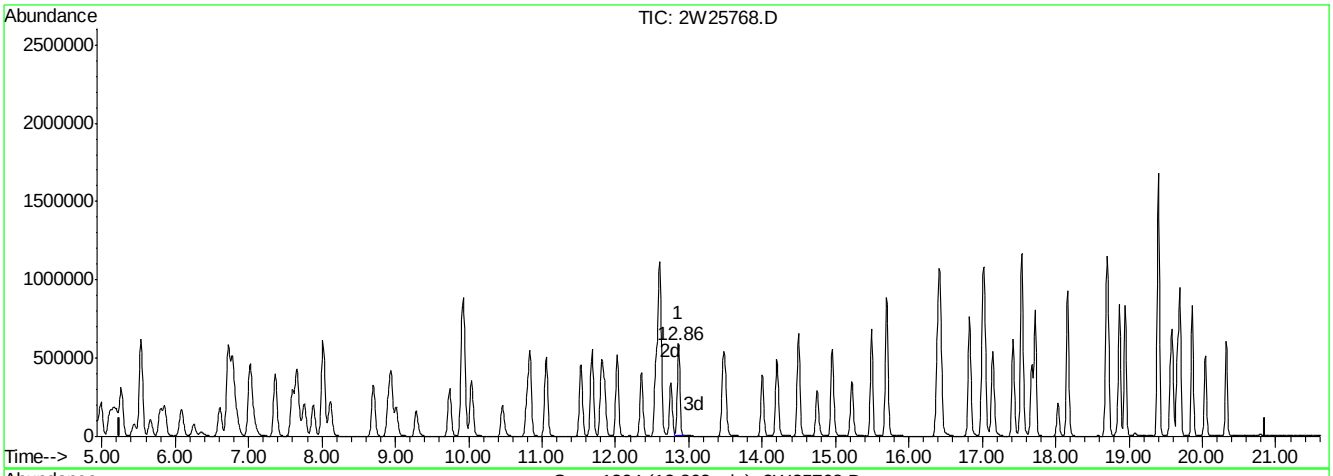
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

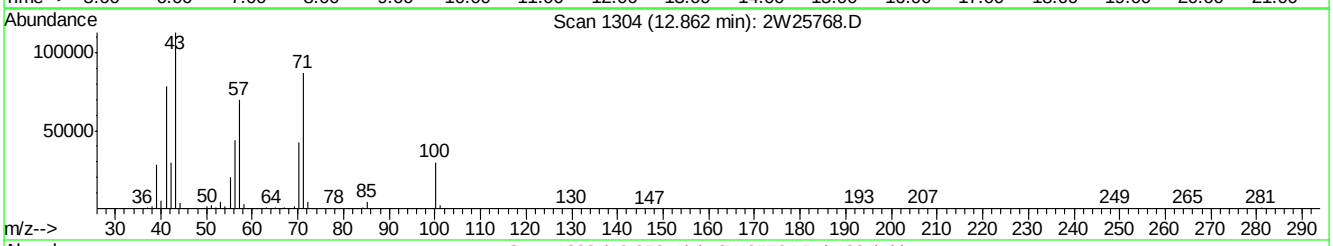
2W25768.D M2W1085.M Tue Oct 06 11:14:42 2009 MS2W

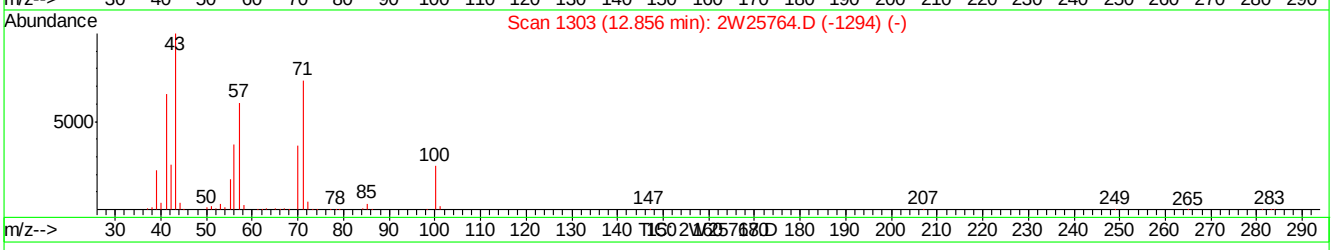
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25768.D Vial: 10
Acq On : 2 Oct 2009 10:30 am Operator: YOUMINH
Sample : IC1085-20 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:18 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 19.09PPBV m

response 1441539

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25768.D M2W1085.M Tue Oct 06 11:14:45 2009 MS2W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 10/12/09 11:38

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:15 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	85792	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	376585	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	159885	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	159783	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	70164	4.06	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 81.20%

Target Compounds						Qvalue
4) FREON 152A	5.10	65	788m	0.11	PPBV	
5) CHLORODIFLUOROMETHANE	5.15	67	344	0.10	PPBV #	41
8) FREON 114	5.54	85	3965	0.11	PPBV	98
9) CHLOROMETHANE	5.44	52	324m	0.10	PPBV	
10) VINYL CHLORIDE	5.67	62	1262	0.10	PPBV #	87
11) 1,3-BUTADIENE	5.81	54	853	0.09	PPBV #	26
13) BROMOMETHANE	6.10	94	1428m	0.11	PPBV	
14) CHLOROETHANE	6.27	64	637	0.08	PPBV #	46
15) FREON 123	6.74	83	3337	0.10	PPBV #	64
16) FREON 123A	6.79	117	2135m	0.11	PPBV	
17) TRICHLOROFLUOROMETHANE	7.02	101	4366	0.12	PPBV	98
20) PENTANE	7.36	42	1017	0.10	PPBV #	10
22) ETHYL ETHER	7.43	74	484	0.09	PPBV #	75
23) IODOMETHANE	7.59	142	3373	0.10	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.66	96	1347	0.12	PPBV	89
25) CARBON DISULFIDE	8.12	76	3481	0.10	PPBV	95
27) BROMOETHENE	6.63	106	1408	0.10	PPBV #	91
29) 3-CHLOROPROPENE	7.90	76	499	0.10	PPBV #	13
30) FREON 113	8.02	151	2055	0.10	PPBV	92
32) TERTIARY BUTYL ALCOHOL	7.78	59	2020m	0.10	PPBV	
33) METHYL TERTIARY BUTYL ETHE	9.00	73	3082	0.10	PPBV	90
34) TETRAHYDROFURAN	10.55	42	723	0.08	PPBV #	74
35) HEXANE	9.94	57	1284	0.09	PPBV	90
37) 1,1-DICHLOROETHANE	8.91	63	1914	0.09	PPBV	74
39) cis-1,2-DICHLOROETHYLENE	9.73	96	1301	0.10	PPBV	85
41) CHLOROFORM	10.03	83	2373	0.10	PPBV	94
42) 2,4-DIMETHYLPENTANE	10.83	57	1434	0.08	PPBV	96
43) 1,1,1-TRICHLOROETHANE	11.05	97	2575	0.10	PPBV	96
44) CARBON TETRACHLORIDE	11.68	117	2855	0.10	PPBV	97
45) 1,2-DICHLOROETHANE	10.79	62	1544	0.09	PPBV #	94
47) BENZENE	11.53	78	3358	0.10	PPBV	97
48) CYCLOHEXANE	11.82	84	1911	0.12	PPBV #	7
50) TRICHLOROETHYLENE	12.59	95	1533	0.10	PPBV	96
51) 1,2-DICHLOROPROPANE	12.36	63	1246	0.11	PPBV	81
52) BROMODICHLOROMETHANE	12.56	83	2166	0.09	PPBV	96
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	3833	0.09	PPBV	96
54) 1,4-DIOXANE	12.72	88	761	0.12	PPBV #	1
55) METHYL METHACRYLATE	12.78	69	779	0.08	PPBV #	84
56) HEPTANE	12.86	43	1297	0.09	PPBV	97
58) METHYL ISOBUTYL KETONE	13.53	43	1838	0.11	PPBV	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:15 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

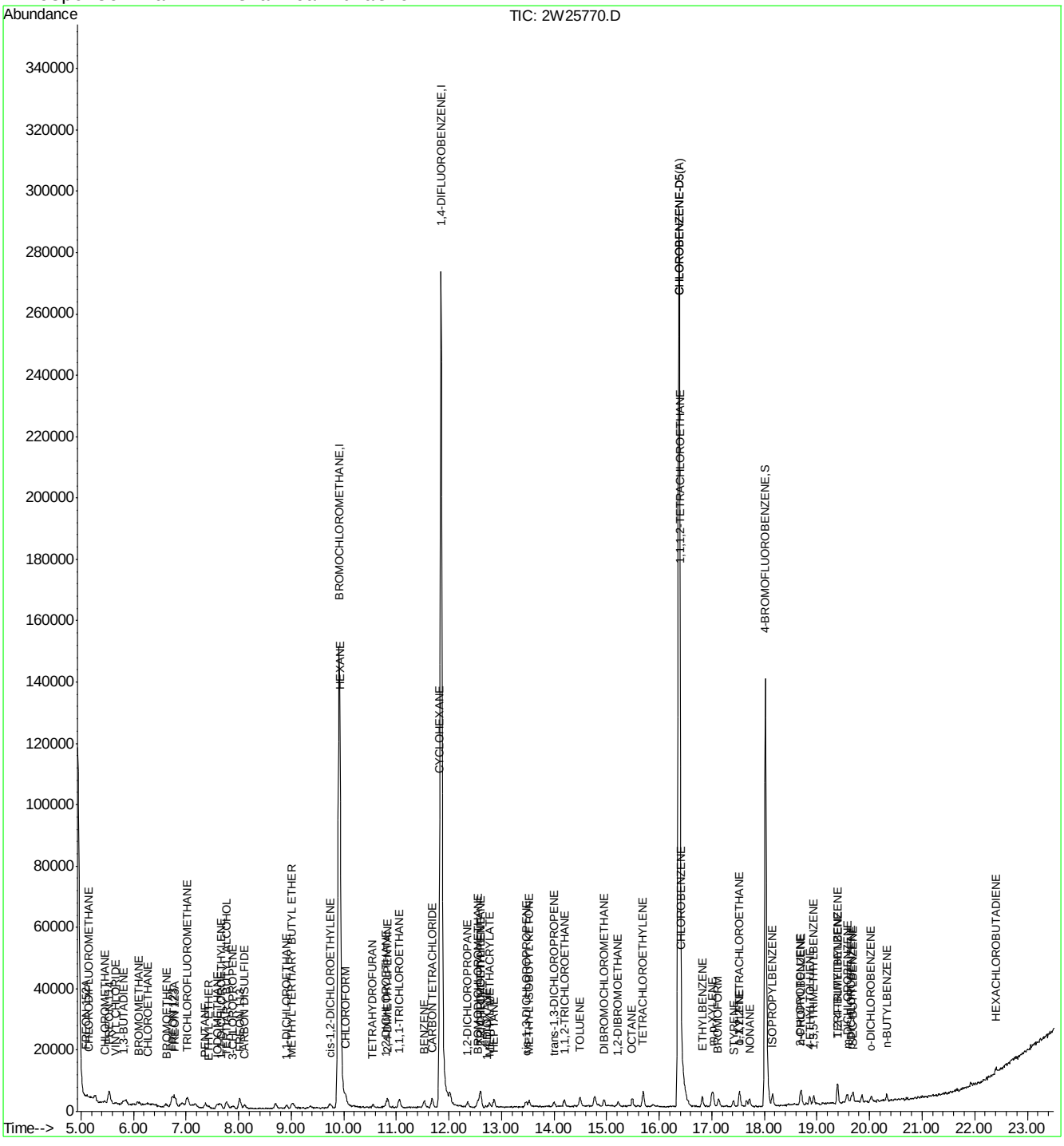
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
59)	cis-1,3-DICHLOROPROPENE	13.46	75	1523	0.08	PPBV		82
60)	TOLUENE	14.50	92	2252	0.09	PPBV		95
61)	trans-1,3-DICHLOROPROPENE	14.00	75	1476	0.08	PPBV		96
62)	1,1,2-TRICHLOROETHANE	14.19	83	964	0.09	PPBV		98
65)	TETRACHLOROETHYLENE	15.69	164	1674	0.11	PPBV		95
66)	DIBROMOCHLOROMETHANE	14.94	129	1941	0.09	PPBV		96
67)	1,2-DIBROMOETHANE	15.22	107	1710	0.10	PPBV	#	95
68)	OCTANE	15.48	43	1292	0.08	PPBV	#	84
69)	1,1,1,2-TETRACHLOROETHANE	16.40	131	1533	0.10	PPBV	#	92
70)	CHLOROBENZENE	16.43	112	2820	0.12	PPBV		95
71)	ETHYLBENZENE	16.82	91	3980	0.10	PPBV		98
72)	m,p-XYLENE	17.02	106	3157	0.20	PPBV	#	89
73)	o-XYLENE	17.53	106	1510	0.10	PPBV		92
74)	STYRENE	17.41	104	1751	0.08	PPBV		97
75)	NONANE	17.71	43	1079	0.08	PPBV	#	89
76)	BROMOFORM	17.13	173	1843	0.10	PPBV		97
78)	1,1,2,2-TETRACHLOROETHANE	17.52	83	1397	0.09	PPBV	#	91
79)	ISOPROPYLBENZENE	18.15	105	4081	0.10	PPBV		95
80)	2-CHLOROTOLUENE	18.68	126	866	0.10	PPBV	#	93
81)	n-PROPYLBENZENE	18.71	120	817	0.08	PPBV	#	59
82)	4-ETHYLTOLUENE	18.86	105	2915	0.09	PPBV	#	94
83)	1,3,5-TRIMETHYLBENZENE	18.94	105	2497	0.09	PPBV		98
84)	TERT-BUTYLBENZENE	19.38	134	580	0.09	PPBV		77
85)	1,2,4-TRIMETHYLBENZENE	19.39	105	2170	0.09	PPBV		94
86)	m-DICHLOROBENZENE	19.58	146	1559	0.11	PPBV	#	77
88)	p-DICHLOROBENZENE	19.66	146	1509	0.12	PPBV	#	82
89)	SEC-BUTYLBENZENE	19.68	134	632	0.09	PPBV		86
91)	o-DICHLOROBENZENE	20.03	146	1261	0.11	PPBV	#	74
92)	n-BUTYLBENZENE	20.32	134	336	0.08	PPBV	#	60
93)	HEXACHLOROBUTADIENE	22.40	225	497	0.18	PPBV		86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:21 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration

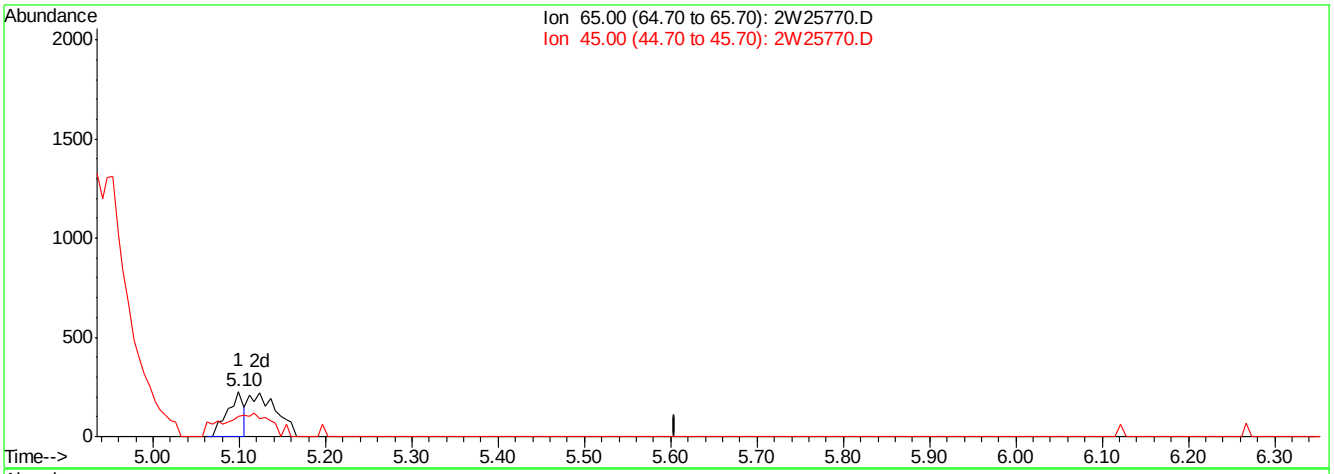


ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:18 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration



(4) FREON 152A

5.10min 0.04PPBV

response 300

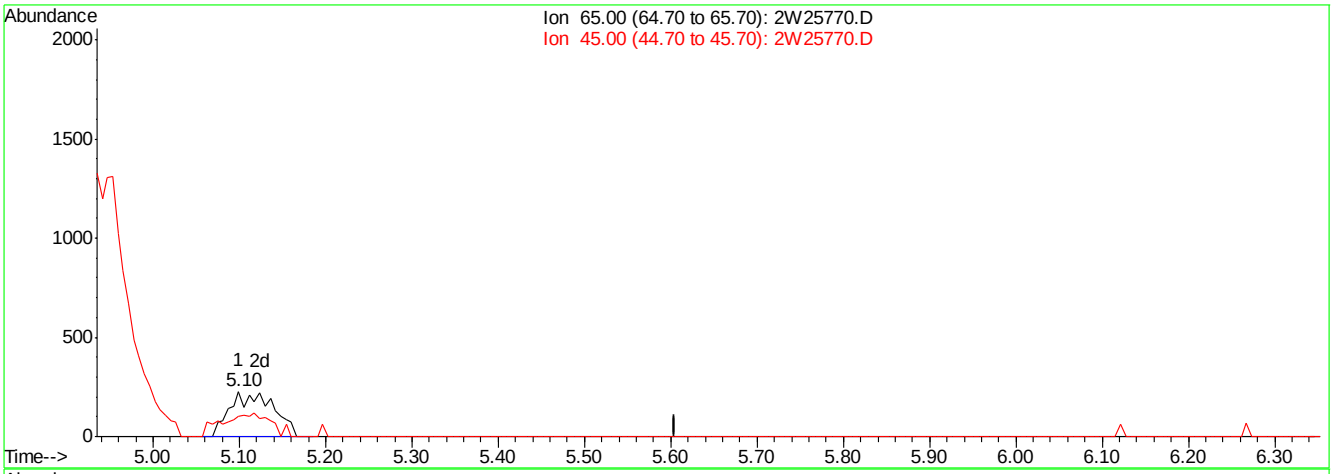
Ion	Exp%	Act%
65.00	100	100
45.00	30.30	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

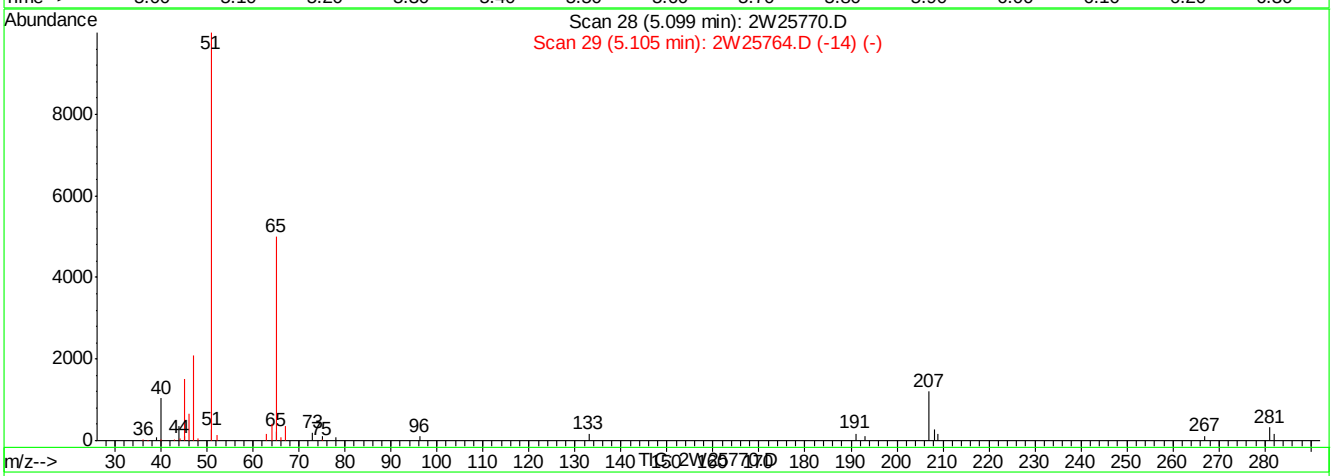
2W25770.D M2W1085.M Mon Oct 05 09:18:15 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:18 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration





(4) FREON 152A

5.10min 0.11PPBV m

response 788

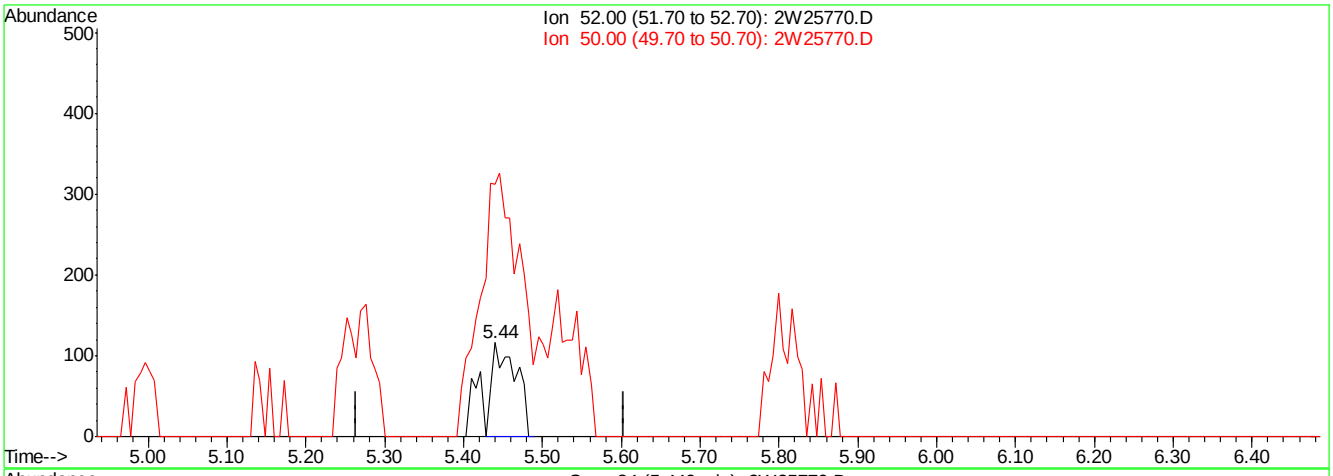
Ion	Exp%	Act%
65.00	100	100
45.00	30.30	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

2W25770.D M2W1085.M Mon Oct 05 09:18:21 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:18 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration



(9) CHLOROMETHANE

5.44min 0.07PPBV

response 247

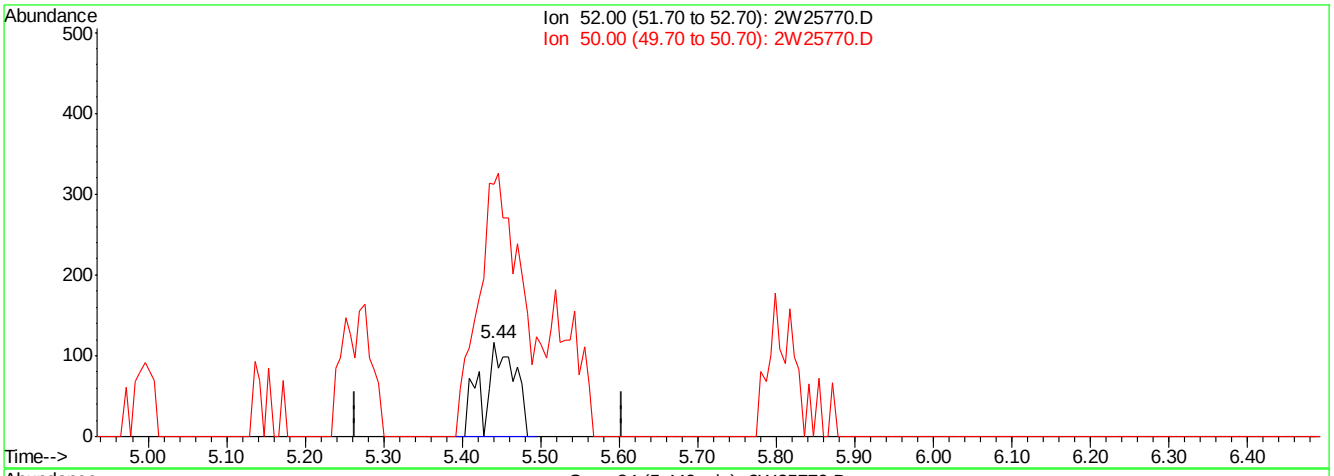
Ion	Exp%	Act%
52.00	100	100
50.00	276.70	146.55#
0.00	0.00	0.00
0.00	0.00	0.00

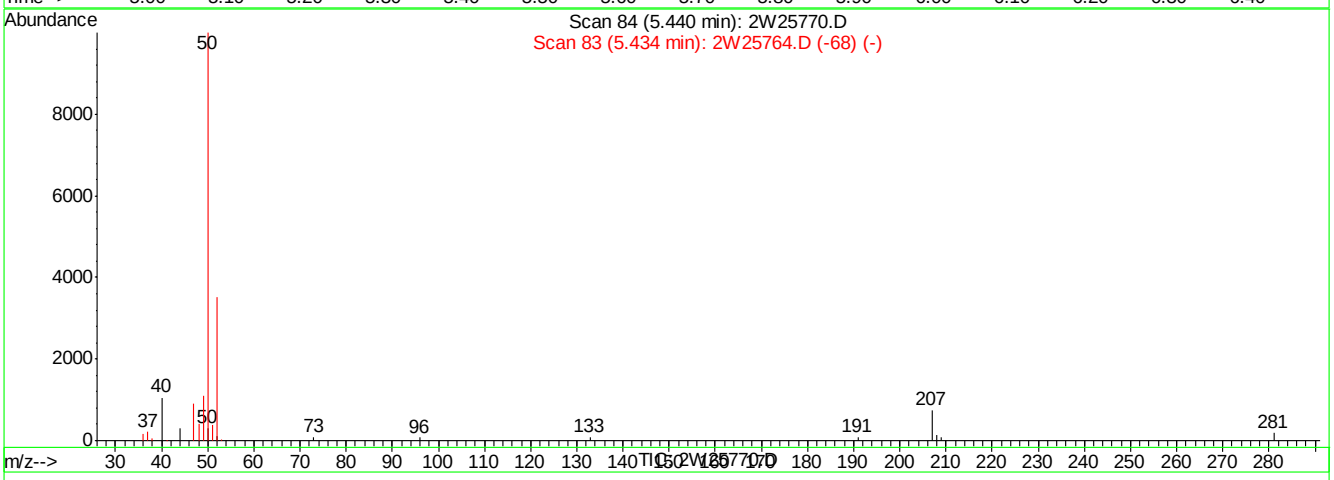
2W25770.D M2W1085.M Mon Oct 05 09:19:00 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration





(9) CHLOROMETHANE

5.44min 0.10PPBV m

response 324

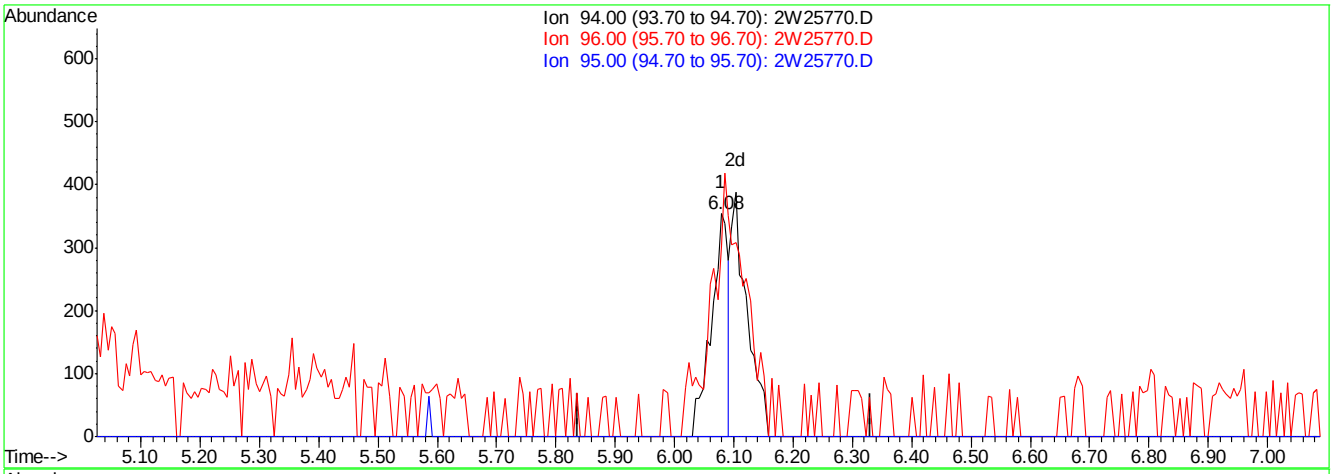
Ion	Exp%	Act%
52.00	100	100
50.00	276.70	268.97
0.00	0.00	0.00
0.00	0.00	0.00

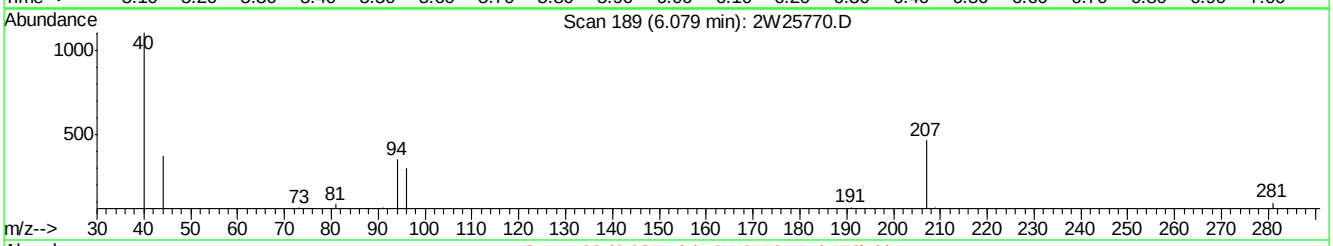
2W25770.D M2W1085.M Mon Oct 05 09:19:05 2009 MS2W

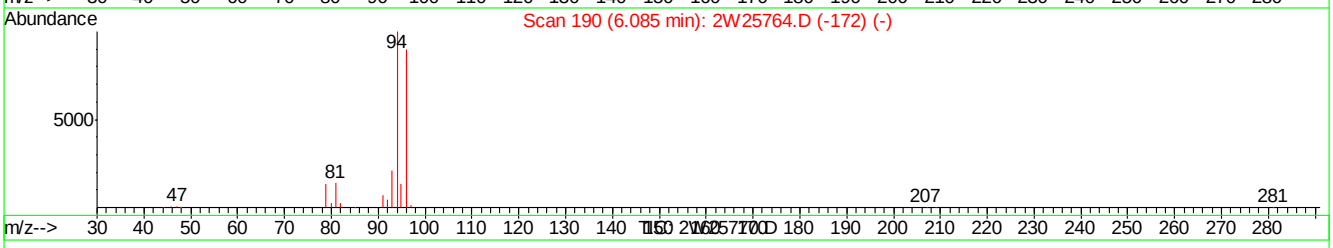
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration







(13) BROMOMETHANE

6.08min 0.05PPBV

response 711

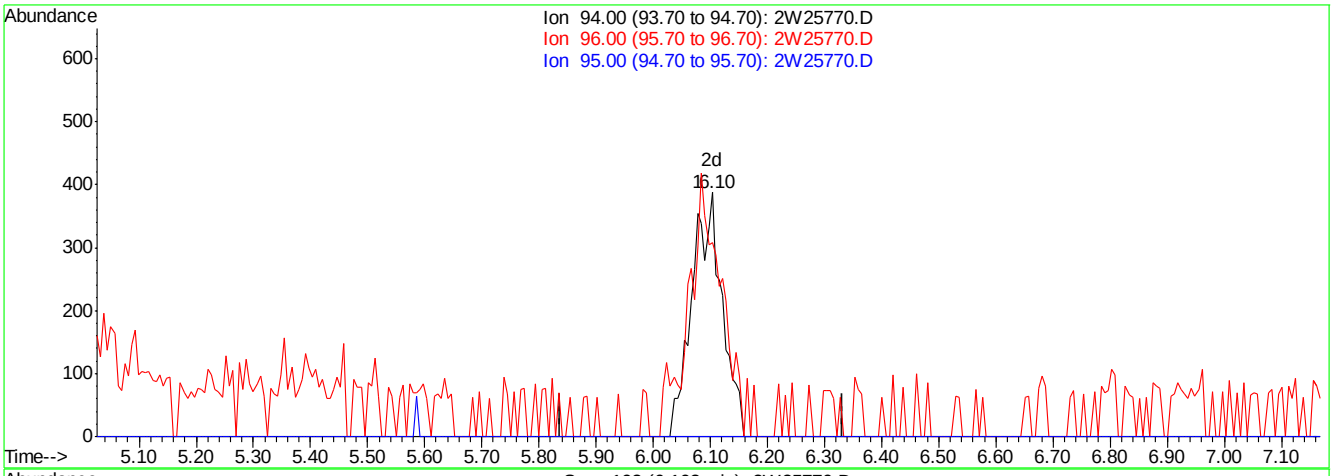
Ion	Exp%	Act%
94.00	100	100
96.00	94.30	209.00#
95.00	14.00	0.00
0.00	0.00	0.00

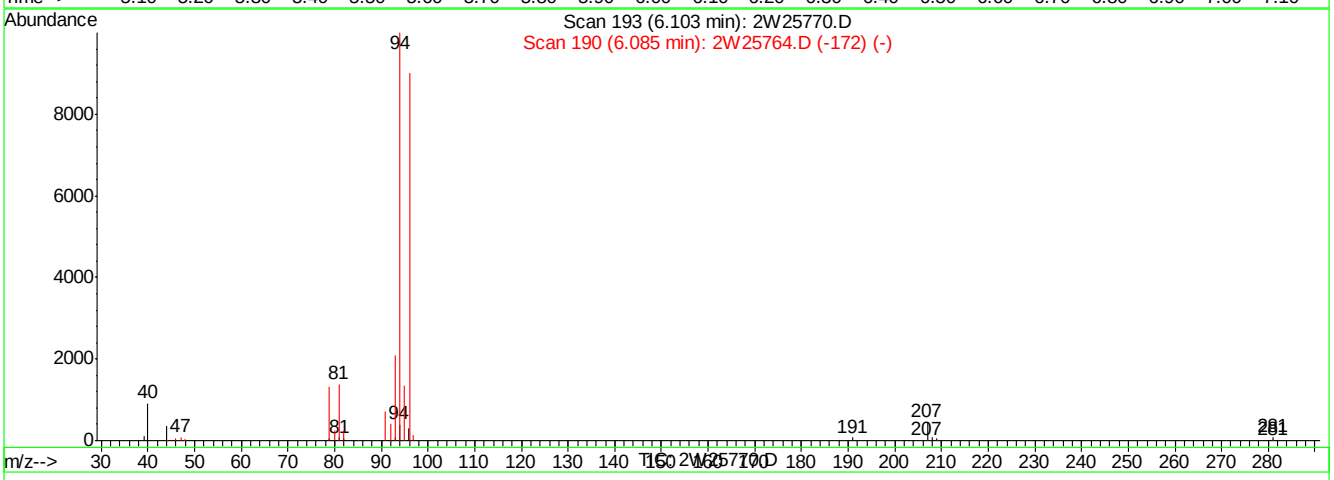
2W25770.D M2W1085.M Mon Oct 05 09:19:17 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration





(13) BROMOMETHANE

6.10min 0.11PPBV m

response 1428

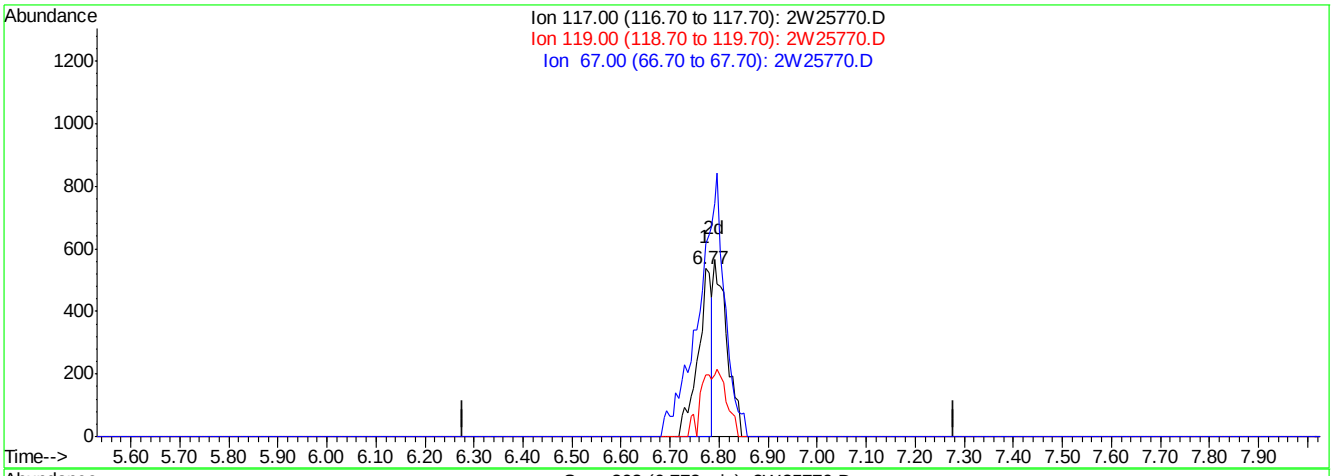
Ion	Exp%	Act%
94.00	100	100
96.00	94.30	104.06
95.00	14.00	0.00
0.00	0.00	0.00

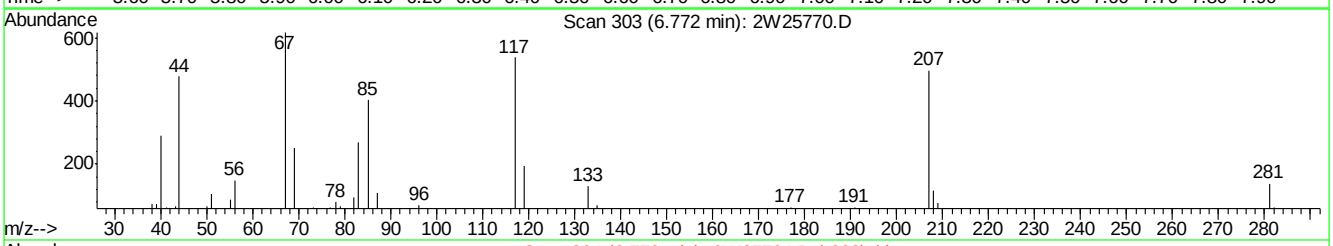
2W25770.D M2W1085.M Mon Oct 05 09:19:22 2009 MS2W

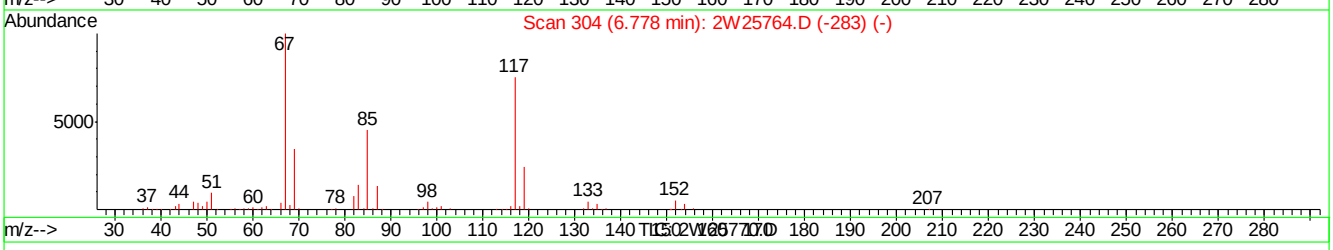
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration







(16) FREON 123A

6.77min 0.05PPBV

response 1058

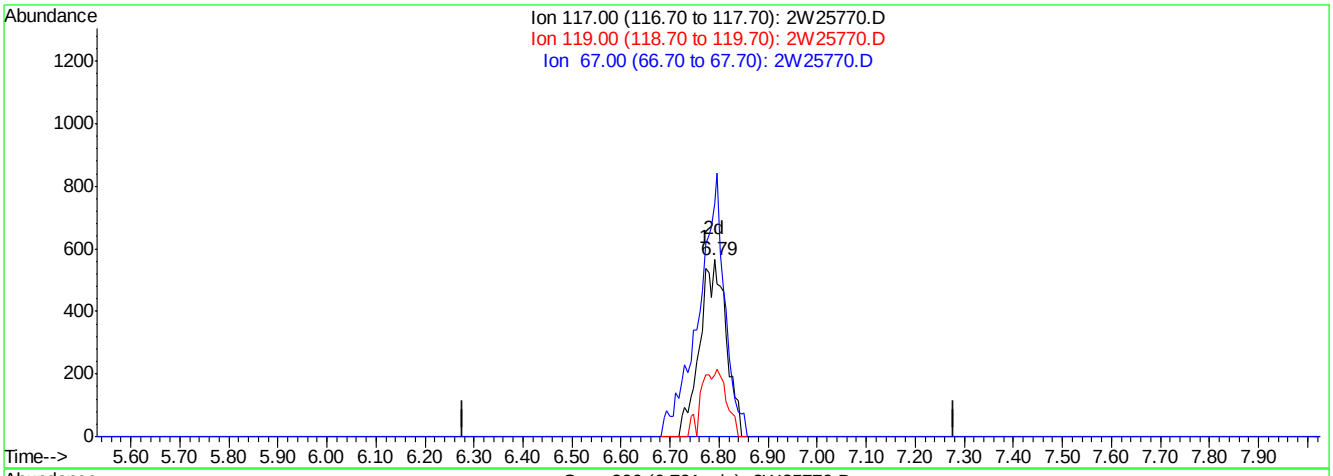
Ion	Exp%	Act%
117.00	100	100
119.00	32.40	35.07
67.00	147.50	0.00#
0.00	0.00	0.00

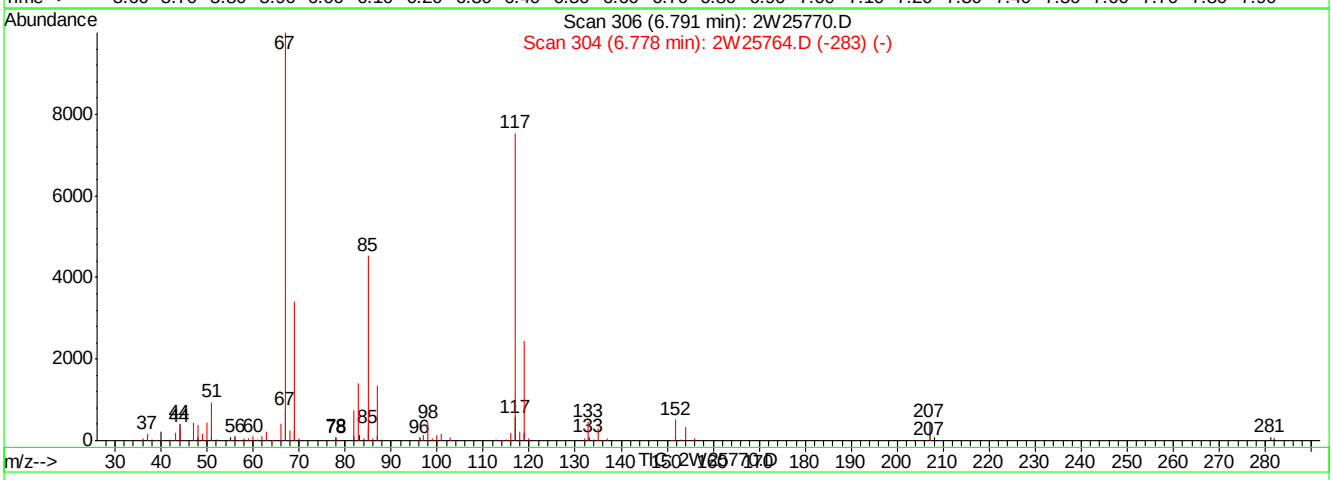
2W25770.D M2W1085.M Mon Oct 05 09:19:27 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration





(16) FREON 123A

6.79min 0.11PPBV m

response 2135

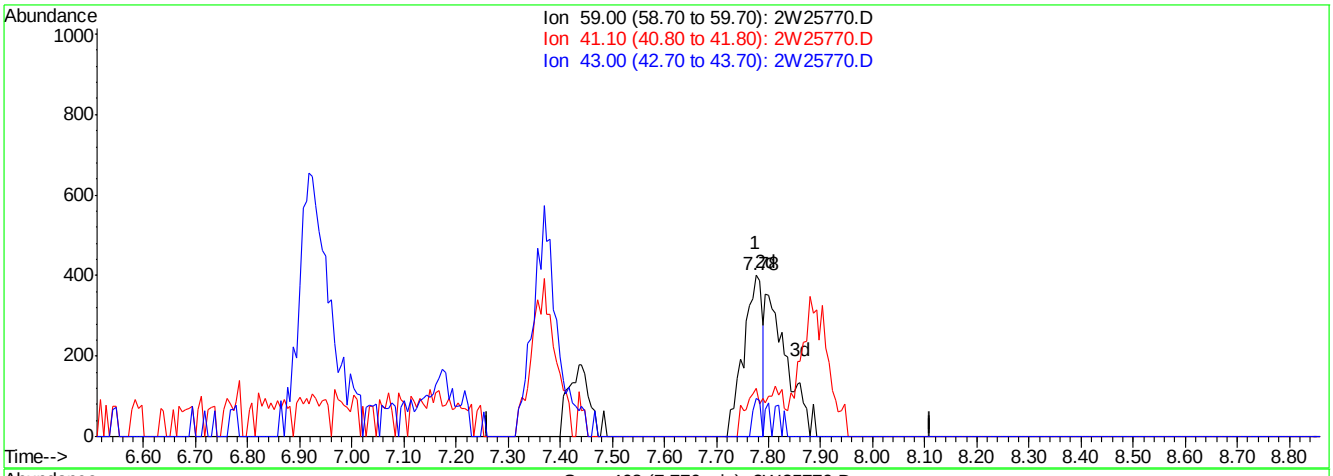
Ion	Exp%	Act%
117.00	100	100
119.00	32.40	17.38#
67.00	147.50	0.00#
0.00	0.00	0.00

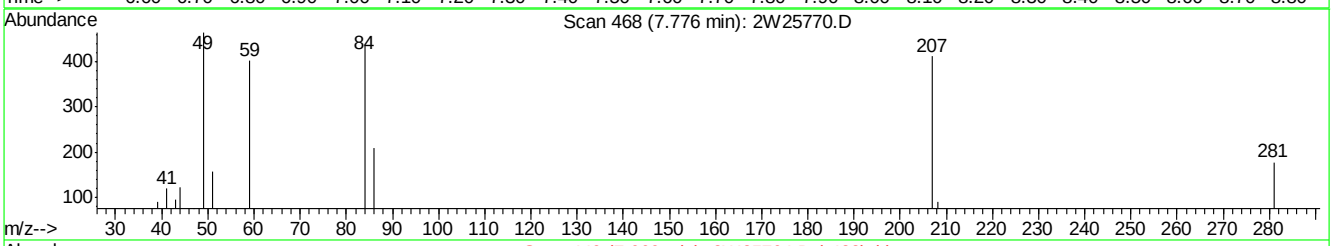
2W25770.D M2W1085.M Mon Oct 05 09:19:32 2009 MS2W

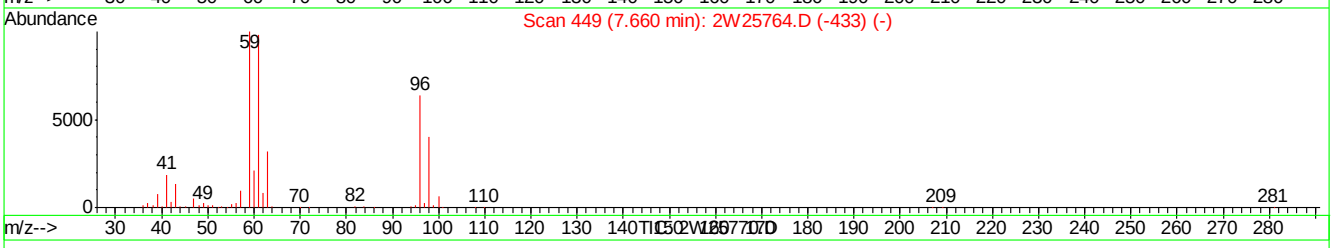
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:20 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration







(32) TERTIARY BUTYL ALCOHOL

7.78min 0.05PPBV

response 974

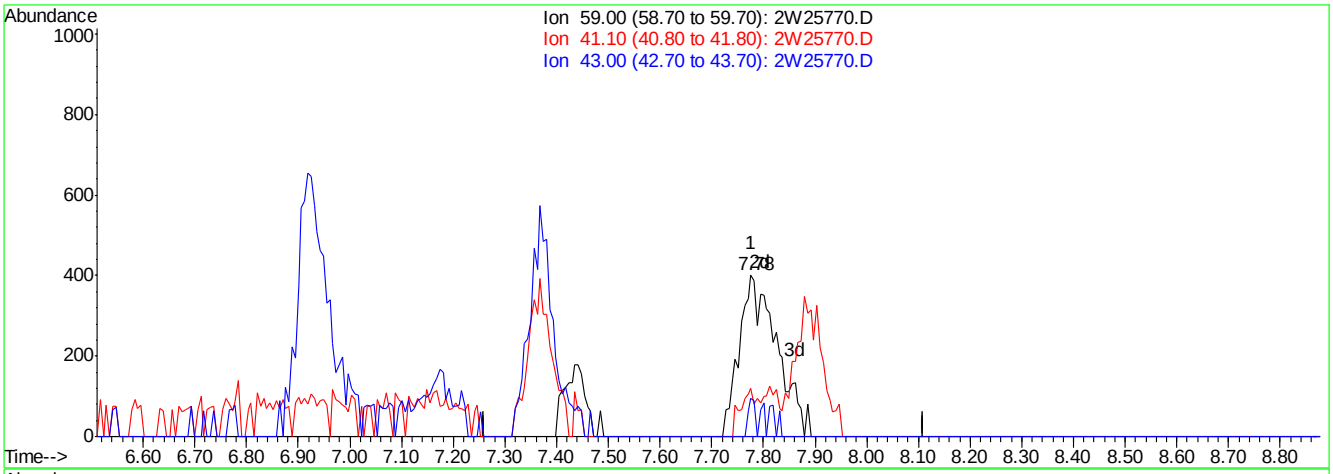
Ion	Exp%	Act%
59.00	100	100
41.10	19.40	29.77
43.00	12.90	0.00
0.00	0.00	0.00

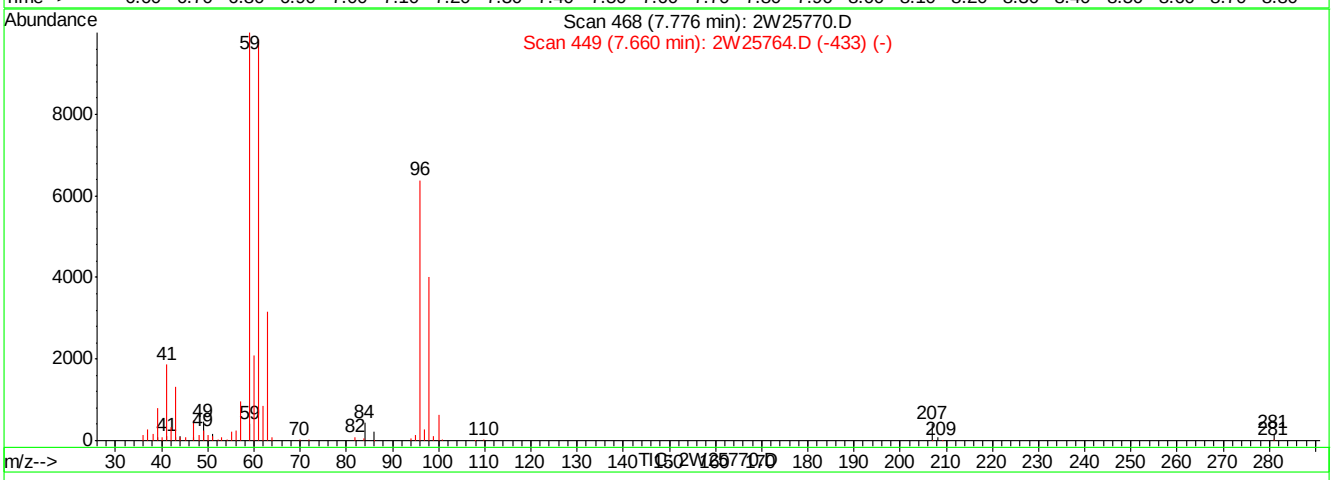
2W25770.D M2W1085.M Mon Oct 05 09:20:09 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25770.D Vial: 12
Acq On : 2 Oct 2009 11:57 am Operator: YOUMINH
Sample : IC1085-0.1 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:20 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Multiple Level Calibration





(32) TERTIARY BUTYL ALCOHOL

7.78min 0.10PPBV m

response 2020

Ion	Exp%	Act%
59.00	100	100
41.10	19.40	14.36
43.00	12.90	0.00
0.00	0.00	0.00

2W25770.D M2W1085.M Mon Oct 05 09:20:15 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25771.D Vial: 12
Acq On : 2 Oct 2009 12:40 pm Operator: YOUMINH
Sample : IC1085-0.04 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:17 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	85725	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	367765	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	156098	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	155981	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	67890	4.03	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 80.60%

Target Compounds						Qvalue
4) FREON 152A	5.11	65	235	0.03	PPBV	67
8) FREON 114	5.54	85	1680	0.05	PPBV	98
10) VINYL CHLORIDE	5.67	62	607	0.05	PPBV #	49
13) BROMOMETHANE	6.10	94	547	0.04	PPBV #	61
15) FREON 123	6.74	83	1386	0.04	PPBV #	65
16) FREON 123A	6.78	117	882	0.04	PPBV #	84
17) TRICHLOROFLUOROMETHANE	7.02	101	1934	0.05	PPBV	97
19) ACETONE	6.97	58	143	0.03	PPBV	98
23) IODOMETHANE	7.60	142	1422	0.04	PPBV	94
24) 1,1-DICHLOROETHYLENE	7.65	96	509	0.05	PPBV #	81
25) CARBON DISULFIDE	8.12	76	1589	0.05	PPBV #	87
28) METHYLENE CHLORIDE	7.77	84	975	0.10	PPBV #	25
30) FREON 113	8.03	151	954	0.05	PPBV	96
31) TRANS-1,2-DICHLOROETHYLENE	8.71	96	783	0.06	PPBV #	69
33) METHYL TERTIARY BUTYL ETHE	9.04	73	1242	0.04	PPBV #	74
35) HEXANE	9.94	57	665	0.04	PPBV	92
37) 1,1-DICHLOROETHANE	8.91	63	736	0.04	PPBV #	74
39) cis-1,2-DICHLOROETHYLENE	9.73	96	679	0.05	PPBV #	66
41) CHLOROFORM	10.04	83	1078	0.04	PPBV	85
42) 2,4-DIMETHYLPENTANE	10.85	57	608	0.04	PPBV #	88
43) 1,1,1-TRICHLOROETHANE	11.06	97	1167	0.04	PPBV	98
44) CARBON TETRACHLORIDE	11.68	117	1235	0.04	PPBV	96
45) 1,2-DICHLOROETHANE	10.80	62	637	0.04	PPBV #	49
47) BENZENE	11.52	78	1635	0.05	PPBV #	85
50) TRICHLOROETHYLENE	12.58	95	637	0.04	PPBV	89
52) BROMODICHLOROMETHANE	12.54	83	930	0.04	PPBV #	96
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	1637	0.04	PPBV #	92
56) HEPTANE	12.85	43	490	0.03	PPBV	91
58) METHYL ISOBUTYL KETONE	13.55	43	550	0.03	PPBV #	66
59) cis-1,3-DICHLOROPROPENE	13.48	75	664	0.04	PPBV	89
60) TOLUENE	14.50	92	859	0.03	PPBV #	74
61) trans-1,3-DICHLOROPROPENE	14.01	75	580	0.03	PPBV #	72
62) 1,1,2-TRICHLOROETHANE	14.21	83	373	0.03	PPBV	88
65) TETRACHLOROETHYLENE	15.69	164	702	0.05	PPBV	93
66) DIBROMOCHLOROMETHANE	14.95	129	773	0.04	PPBV	98
67) 1,2-DIBROMOETHANE	15.23	107	679	0.04	PPBV #	92
68) OCTANE	15.48	43	458	0.03	PPBV	89
69) 1,1,1,2-TETRACHLOROETHANE	16.40	131	579	0.04	PPBV #	53
70) CHLOROBENZENE	16.43	112	1209	0.05	PPBV #	47
71) ETHYLBENZENE	16.82	91	1613	0.04	PPBV #	89

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25771.D Vial: 12
Acq On : 2 Oct 2009 12:40 pm Operator: YOUMINH
Sample : IC1085-0.04 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:17 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

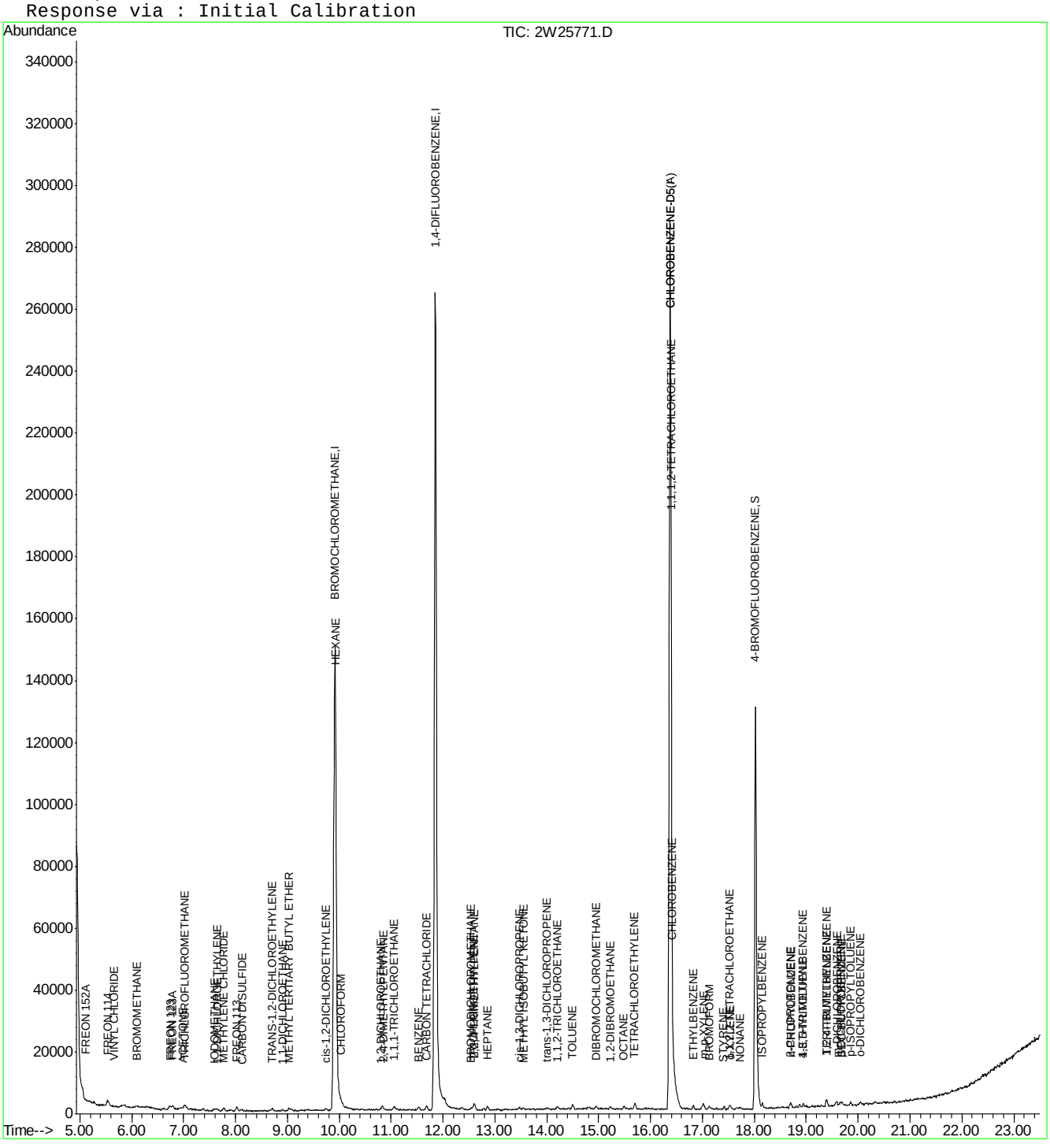
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
72)	m,p-XYLENE	17.02	106	1283	0.08	PPBV		84
73)	o-XYLENE	17.55	106	557	0.04	PPBV	#	80
74)	STYRENE	17.41	104	573	0.03	PPBV		96
75)	NONANE	17.71	43	391	0.03	PPBV	#	51
76)	BROMOFORM	17.13	173	812	0.04	PPBV	#	81
78)	1,1,2,2-TETRACHLOROETHANE	17.52	83	540	0.04	PPBV	#	91
79)	ISOPROPYLBENZENE	18.15	105	1571	0.04	PPBV		93
80)	2-CHLOROTOLUENE	18.69	126	280	0.03	PPBV	#	53
81)	n-PROPYLBENZENE	18.71	120	255	0.03	PPBV	#	6
82)	4-ETHYLTOLUENE	18.95	105	854	0.03	PPBV		69
83)	1,3,5-TRIMETHYLBENZENE	18.95	105	954	0.04	PPBV	#	92
84)	TERT-BUTYLBENZENE	19.38	134	210	0.03	PPBV		75
85)	1,2,4-TRIMETHYLBENZENE	19.40	105	781	0.03	PPBV		89
86)	m-DICHLOROBENZENE	19.60	146	639	0.05	PPBV	#	69
88)	p-DICHLOROBENZENE	19.66	146	571	0.05	PPBV	#	51
89)	SEC-BUTYLBENZENE	19.69	134	164	0.02	PPBV	#	20
90)	p-ISOPROPYLTOLUENE	19.86	134	130	0.02	PPBV	#	25
91)	o-DICHLOROBENZENE	20.04	146	511	0.04	PPBV	#	56

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25771.D Vial: 12
Acq On : 2 Oct 2009 12:40 pm Operator: YOUMINH
Sample : IC1085-0.04 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:26 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration



ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25772.D Vial: 14
Acq On : 2 Oct 2009 1:23 pm Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:33:39 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

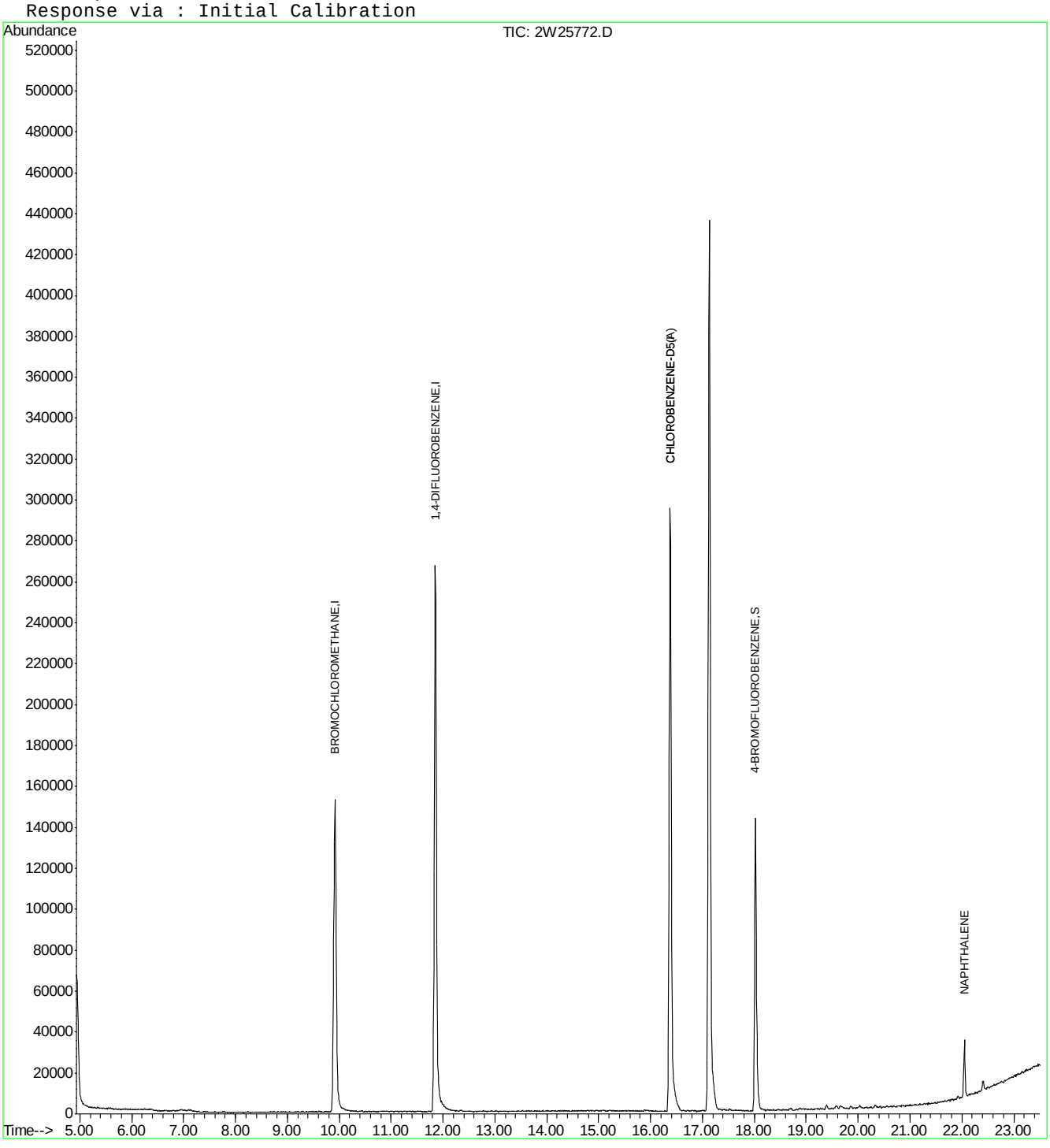
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	85465	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	365978	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	159757	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	159656	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.02	95	71636	4.57	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 91.40%			
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	29183	3.94	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25772.D Vial: 14
Acq On : 2 Oct 2009 1:23 pm Operator: YOUMINH
Sample : IC1085-5.0 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:06 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25773.D Vial: 14
Acq On : 2 Oct 2009 2:07 pm Operator: YOUMINH
Sample : IC1085-10 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:33:45 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	85655	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	361235	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	165050	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	164945	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	82039	5.06	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 101.20%

Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	52903	6.91	PPBV	100

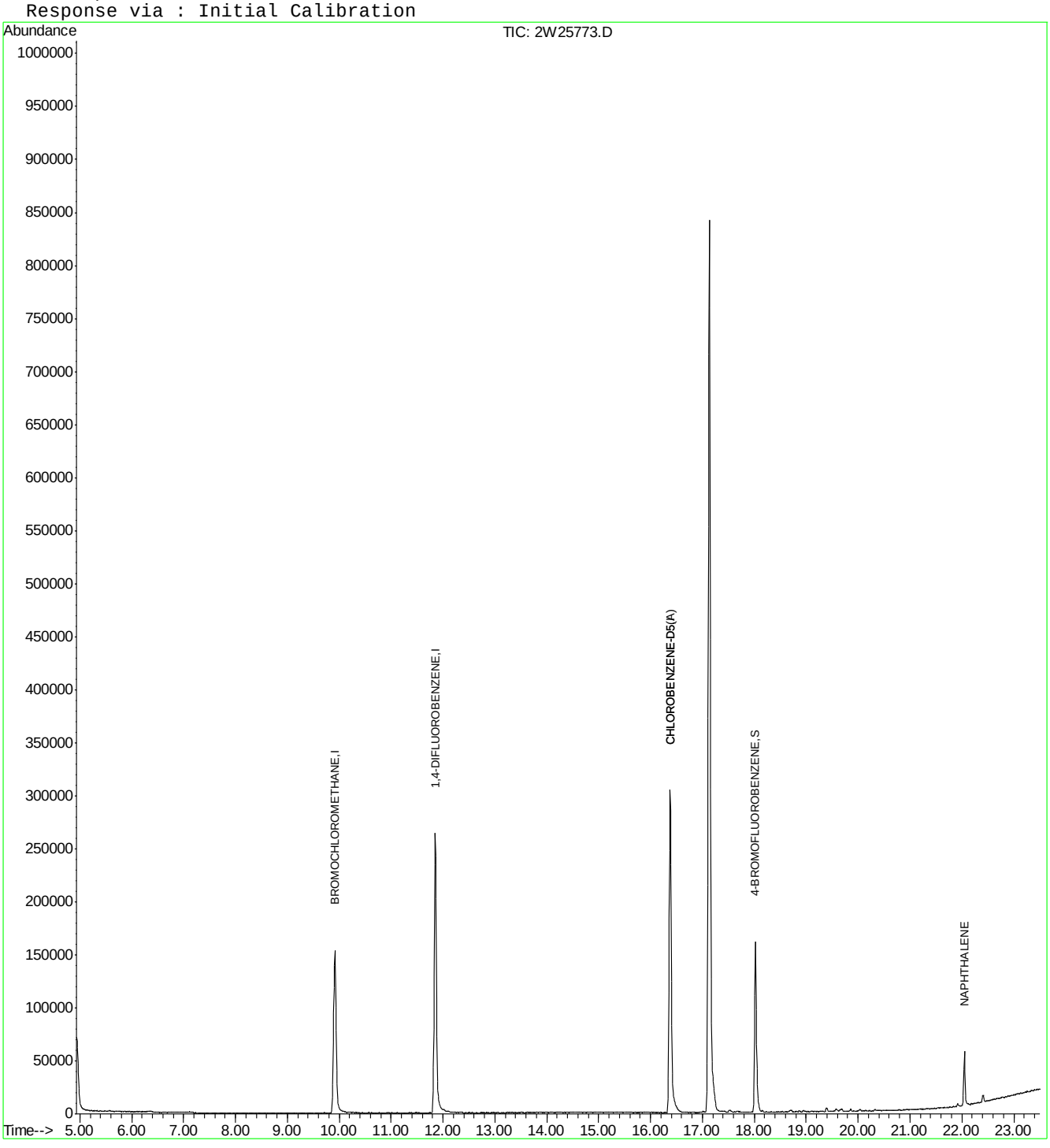
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25773.D Vial: 14
Acq On : 2 Oct 2009 2:07 pm Operator: YOUMINH
Sample : IC1085-10 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:06 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25774.D Vial: 10
Acq On : 2 Oct 2009 2:51 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:25 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	78922	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.86	114	338920	10.00	PPBV	0.02
63) CHLOROBENZENE-D5	16.40	82	190728	10.00	PPBV	0.02
95) CHLOROBENZENE-D5(A)	16.40	82	190728	10.00	PPBV	0.02

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.04	95	96242	4.67	PPBV	0.02

Spiked Amount 5.000 Range 65 - 128 Recovery = 93.40%

Target Compounds						Qvalue
2) FREON 115	4.99	119	202748	34.59	PPBV	97
3) DICHLORODIFLUOROMETHANE	4.99	85	281519	35.46	PPBV	99
4) FREON 152A	5.11	65	227468	35.75	PPBV	99
5) CHLORODIFLUOROMETHANE	5.15	67	117050	36.97	PPBV	98
6) PROPYLENE	5.20	41	255205	33.87	PPBV	98
7) PROPANE	5.22	43	89442	33.55	PPBV #	1
8) FREON 114	5.53	85	1069692	32.82	PPBV	96
9) CHLOROMETHANE	5.44	52	109991	35.32	PPBV	91
10) VINYL CHLORIDE	5.66	62	392739	33.19	PPBV	99
11) 1,3-BUTADIENE	5.80	54	284763	32.68	PPBV	99
12) n-BUTANE	5.86	43	465814	29.65	PPBV	99
13) BROMOMETHANE	6.08	94	437582	35.83	PPBV	99
14) CHLOROETHANE	6.26	64	253495	36.20	PPBV	100
15) FREON 123	6.73	83	1004141	33.43	PPBV #	96
16) FREON 123A	6.78	117	654776	36.26	PPBV	95
17) TRICHLOROFLUOROMETHANE	7.02	101	1231353	35.57	PPBV	98
18) ISOPROPYL ALCOHOL	7.08	45	508269	32.71	PPBV	99
19) ACETONE	6.84	58	205750	39.19	PPBV	100
20) PENTANE	7.36	42	324147	34.20	PPBV	95
21) TVHC as EQUIV PENTANE	7.36	TIC	2388273m	36.45	PPBV	
22) ETHYL ETHER	7.36	74	194633	38.10	PPBV	99
23) IODOMETHANE	7.60	142	1096897	35.77	PPBV	95
24) 1,1-DICHLOROETHYLENE	7.66	96	374102	36.43	PPBV	99
25) CARBON DISULFIDE	8.12	76	1105536	36.19	PPBV	98
26) ETHANOL	6.36	45	119437	40.53	PPBV	100
27) BROMOETHENE	6.61	106	470324	36.03	PPBV	99
28) METHYLENE CHLORIDE	7.76	84	336979	37.07	PPBV	100
29) 3-CHLOROPROPENE	7.89	76	178863	38.11	PPBV	99
30) FREON 113	8.02	151	661339	36.01	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	8.71	96	434101	36.68	PPBV	99
32) TERTIARY BUTYL ALCOHOL	7.69	59	173768	9.40	PPBV	96
33) METHYL TERTIARY BUTYL ETHE	8.95	73	1099227	40.65	PPBV	99
34) TETRAHYDROFURAN	10.46	42	328796	41.48	PPBV	98
35) HEXANE	9.94	57	490807	35.89	PPBV	96
36) VINYL ACETATE	9.02	86	95307	40.66	PPBV	97
37) 1,1-DICHLOROETHANE	8.91	63	678436	36.15	PPBV	98
38) METHYL ETHYL KETONE	9.30	72	191546	44.23	PPBV	98
39) cis-1,2-DICHLOROETHYLENE	9.75	96	420555	36.11	PPBV	98
40) ETHYL ACETATE	9.94	61	99876	41.19	PPBV #	81
41) CHLOROFORM	10.05	83	810419	36.69	PPBV	98

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25774.D Vial: 10
Acq On : 2 Oct 2009 2:51 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:25 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.84	57	560758	35.23	PPBV		98
43)	1,1,1-TRICHLOROETHANE	11.07	97	898454	36.26	PPBV		98
44)	CARBON TETRACHLORIDE	11.69	117	924678	35.46	PPBV		98
45)	1,2-DICHLOROETHANE	10.80	62	583159	38.42	PPBV		99
47)	BENZENE	11.54	78	1116832	35.21	PPBV		98
48)	CYCLOHEXANE	11.82	84	511452	36.34	PPBV		95
49)	2,3-DIMETHYLPENTANE	12.03	71	239676	37.72	PPBV		95
50)	TRICHLOROETHYLENE	12.60	95	501570	36.84	PPBV		99
51)	1,2-DICHLOROPROPANE	12.37	63	368542	35.89	PPBV		96
52)	BROMODICHLOROMETHANE	12.56	83	839702	36.87	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.62	57	1263468	33.57	PPBV		97
54)	1,4-DIOXANE	12.62	88	231390	41.15	PPBV	#	72
55)	METHYL METHACRYLATE	12.77	69	367050	43.35	PPBV		99
56)	HEPTANE	12.87	43	495895	36.72	PPBV		98
57)	TVHC as EQUIV HEPTANE	12.87	TIC	2604660m	38.06	PPBV		
58)	METHYL ISOBUTYL KETONE	13.51	43	580399	38.59	PPBV		98
59)	cis-1,3-DICHLOROPROPENE	13.48	75	618825	36.57	PPBV		95
60)	TOLUENE	14.50	92	787753	34.80	PPBV		96
61)	trans-1,3-DICHLOROPROPENE	14.01	75	624466	38.48	PPBV		97
62)	1,1,2-TRICHLOROETHANE	14.21	83	351418	34.77	PPBV		99
64)	2-HEXANONE	14.77	58	303749	34.84	PPBV		99
65)	TETRACHLOROETHYLENE	15.71	164	578334	32.22	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.97	129	872265	32.89	PPBV		99
67)	1,2-DIBROMOETHANE	15.23	107	666954	33.06	PPBV		99
68)	OCTANE	15.50	43	584266	31.50	PPBV		95
69)	1,1,1,2-TETRACHLOROETHANE	16.42	131	595050	33.08	PPBV	#	99
70)	CHLOROBENZENE	16.45	112	888726	31.04	PPBV		97
71)	ETHYLBENZENE	16.83	91	1480225	30.18	PPBV		96
72)	m,p-XYLENE	17.04	106	1197146	64.05	PPBV		87
73)	o-XYLENE	17.55	106	576861	32.79	PPBV		94
74)	STYRENE	17.43	104	865699	33.17	PPBV		97
75)	NONANE	17.73	43	537675	32.20	PPBV		95
76)	BROMOFORM	17.16	173	773761	35.07	PPBV		98
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	596312	31.64	PPBV		97
79)	ISOPROPYLBENZENE	18.17	105	1526078	31.52	PPBV		95
80)	2-CHLOROTOLUENE	18.70	126	385942	35.58	PPBV	#	73
81)	n-PROPYLBENZENE	18.72	120	439451	36.74	PPBV		67
82)	4-ETHYLTOLUENE	18.87	105	1288991	32.64	PPBV		95
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	1130781	34.06	PPBV		96
84)	TERT-BUTYLBENZENE	19.41	134	321793	40.07	PPBV		84
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	1073124	36.71	PPBV		96
86)	m-DICHLOROBENZENE	19.60	146	647594	37.99	PPBV		98
87)	BENZYL CHLORIDE	19.57	91	652103	44.76	PPBV		99
88)	p-DICHLOROBENZENE	19.67	146	592322	39.81	PPBV		97
89)	SEC-BUTYLBENZENE	19.70	134	333819	38.20	PPBV		81
90)	p-ISOPROPYLTOLUENE	19.87	134	325009	39.77	PPBV		88
91)	o-DICHLOROBENZENE	20.05	146	540979	38.65	PPBV		97
92)	n-BUTYLBENZENE	20.33	134	232769	43.82	PPBV		90
93)	HEXACHLOROBUTADIENE	22.41	225	127086	39.08	PPBV		99

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25774.D Vial: 10
Acq On : 2 Oct 2009 2:51 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:01:25 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:59:56 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	99122	52.57 PPBV	99

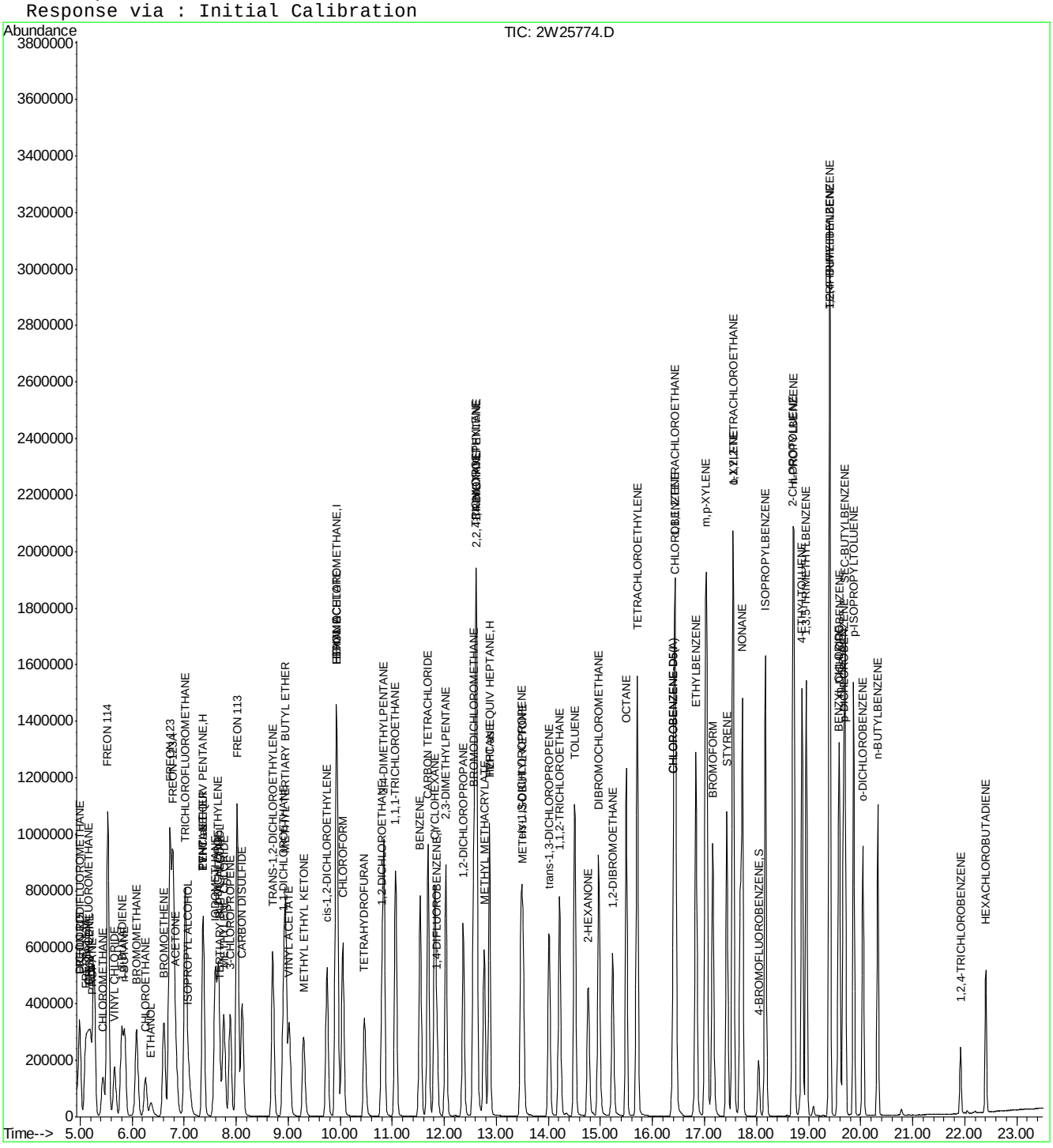
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25774.D Vial: 10
Acq On : 2 Oct 2009 2:51 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:24 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration

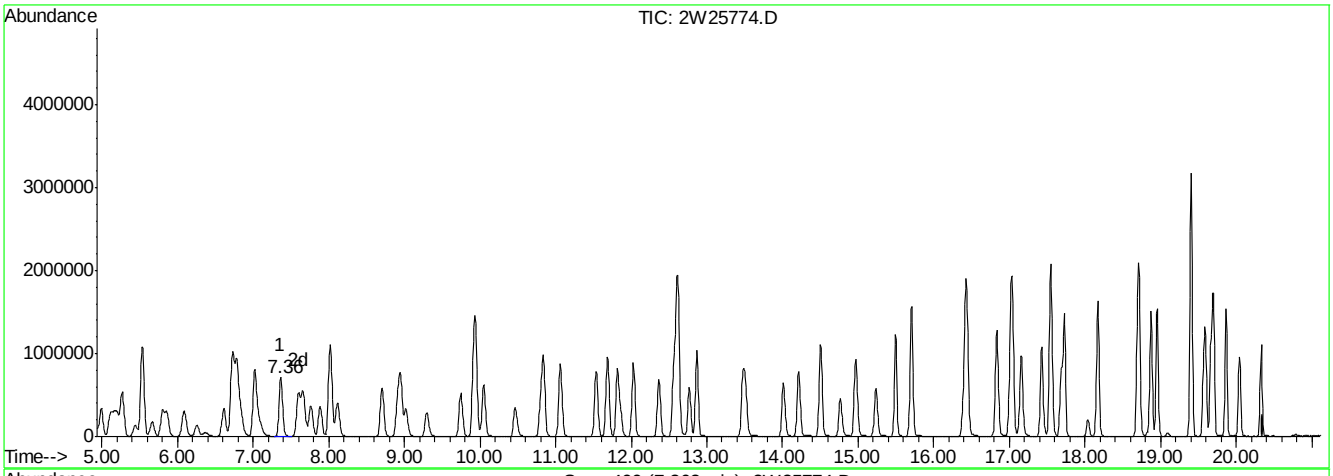


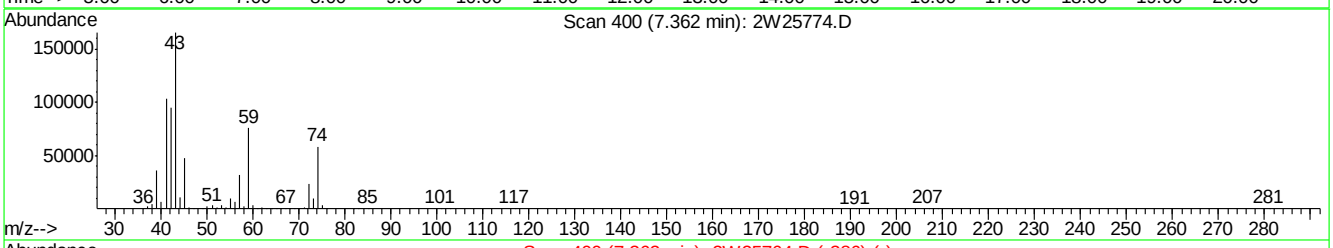
ACCUTEST Laboratories JA28238

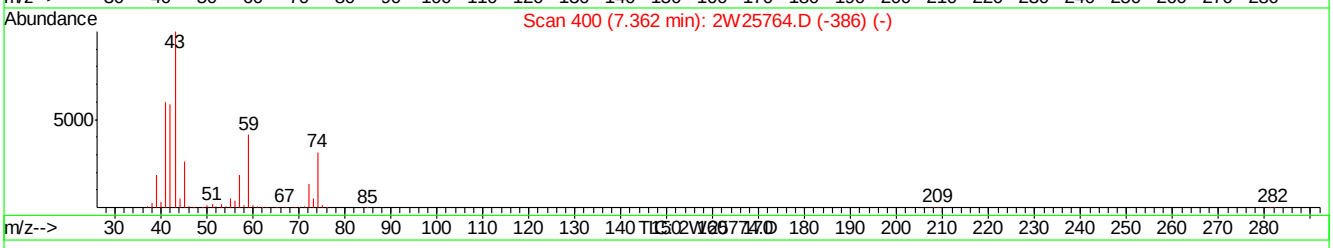
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25774.D Vial: 10
Acq On : 2 Oct 2009 2:51 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:24 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.36min 36.45PPBV m

response 2388273

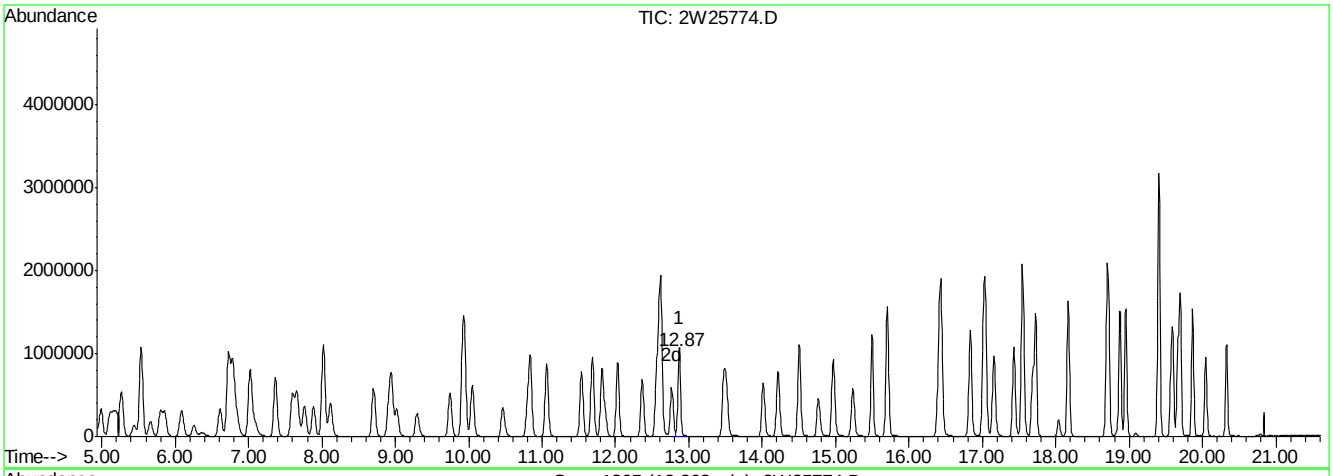
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.04#
0.00	0.00	0.04#
0.00	0.00	0.00

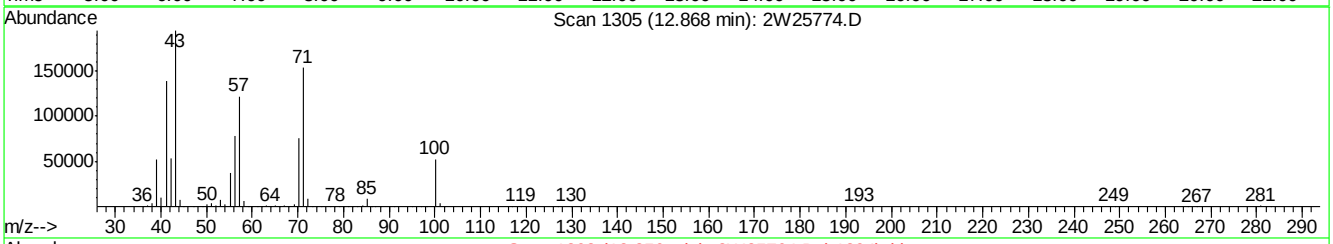
2W25774.D M2W1085.M Tue Oct 06 11:15:00 2009 MS2W

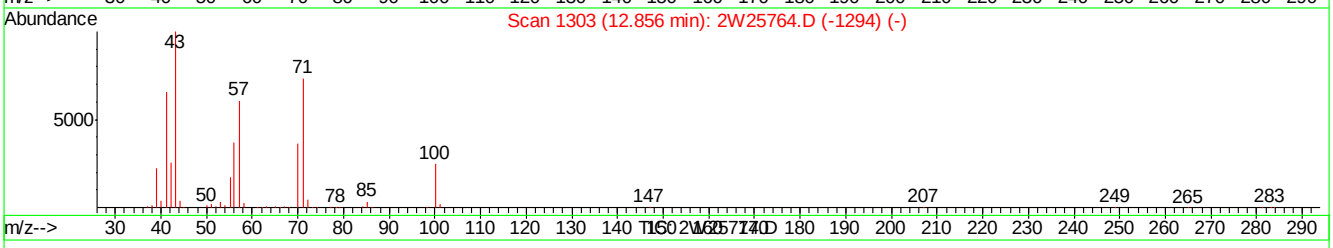
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25774.D Vial: 10
Acq On : 2 Oct 2009 2:51 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 5 9:24 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.87min 38.06PPBV m

response 2604660

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.04#
0.00	0.00	0.03#
0.00	0.00	0.00

2W25774.D M2W1085.M Tue Oct 06 11:15:03 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25775.D Vial: 15
Acq On : 2 Oct 2009 3:34 pm Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:33:50 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	77614	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	336727	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	140640	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	140564	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	61028	4.42	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 88.40%

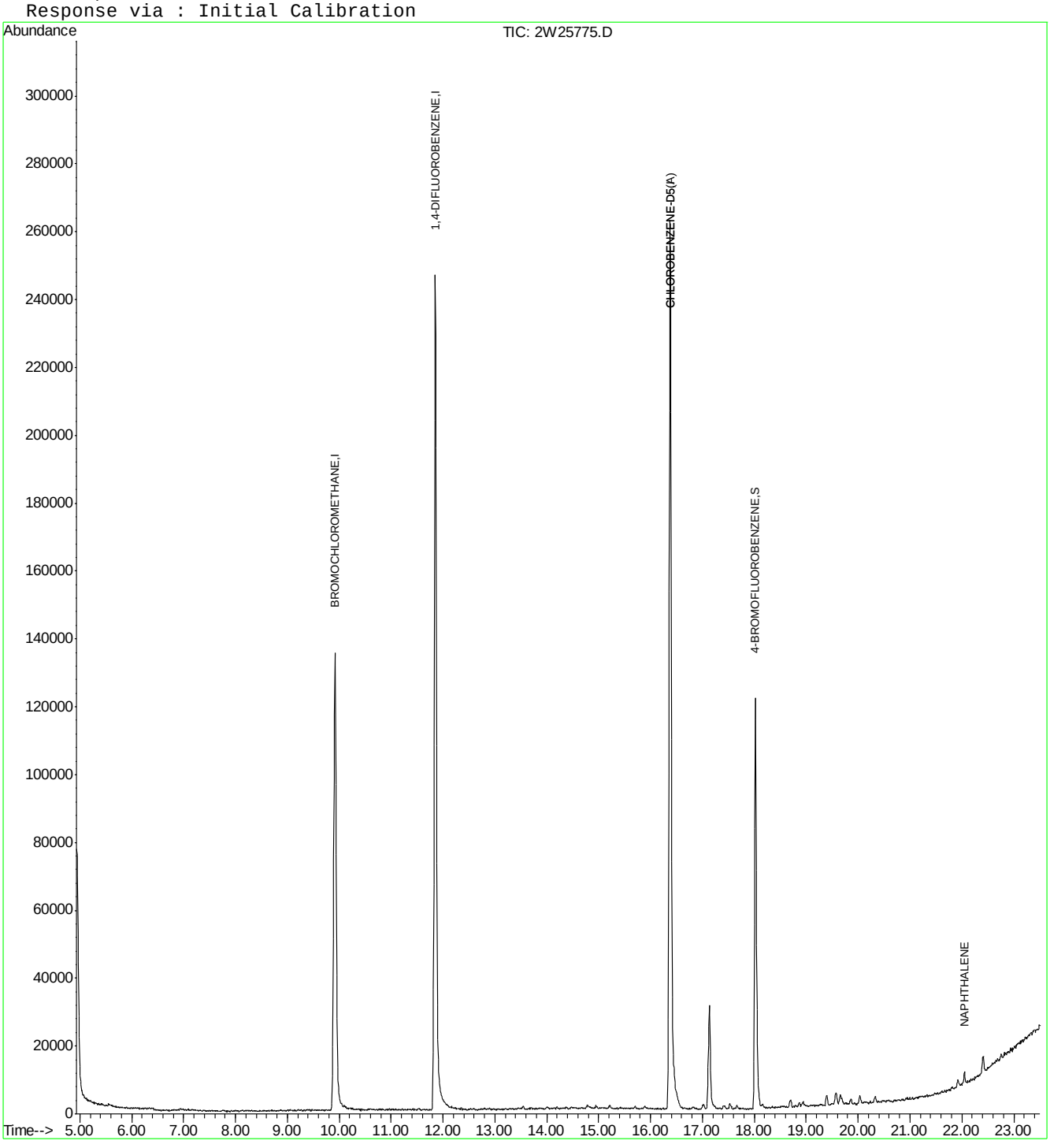
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	3981	0.61	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25775.D Vial: 15
Acq On : 2 Oct 2009 3:34 pm Operator: YOUMINH
Sample : IC1085-0.5 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:06 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25776.D Vial: 15
Acq On : 2 Oct 2009 4:17 pm Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:33:54 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	79275	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	341896	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	145279	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	145058	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	64843	4.55	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 91.00%

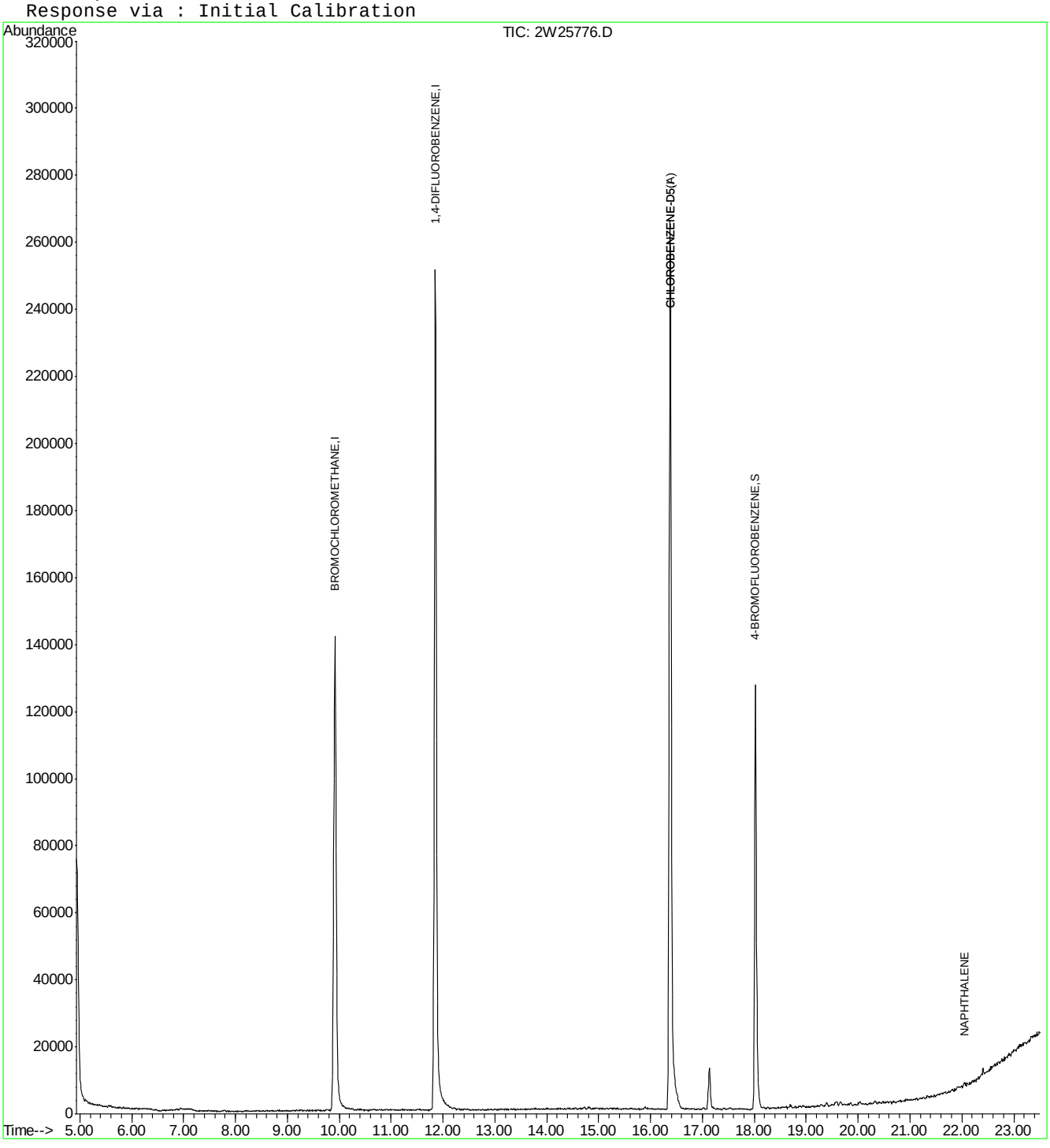
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	1841	0.27	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25776.D Vial: 15
Acq On : 2 Oct 2009 4:17 pm Operator: YOUMINH
Sample : IC1085-0.2 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:07 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25777.D Vial: 14
Acq On : 2 Oct 2009 5:44 pm Operator: YOUMINH
Sample : IC1085-20 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:34:00 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	71957	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	314904	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	144471	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	144365	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	75029	5.29	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 105.80%

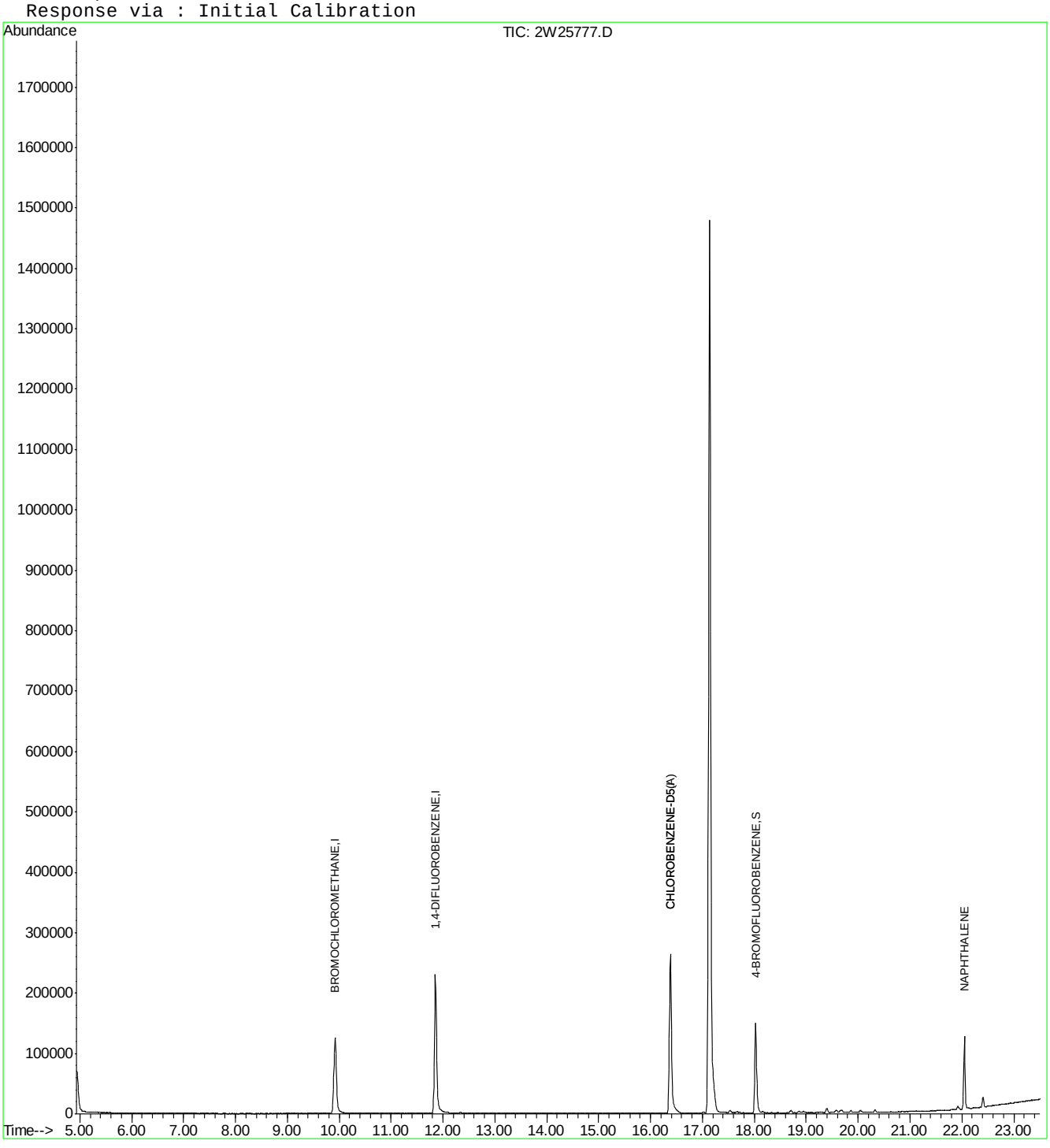
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	124685	18.62	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25777.D Vial: 14
Acq On : 2 Oct 2009 5:44 pm Operator: YOUMINH
Sample : IC1085-20 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:07 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration



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Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25778.D Vial: 14
Acq On : 2 Oct 2009 6:27 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 05 09:34:03 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.92	128	77994	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	339210	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	154814	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	154814	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.02	95	81601	5.37	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 107.40%

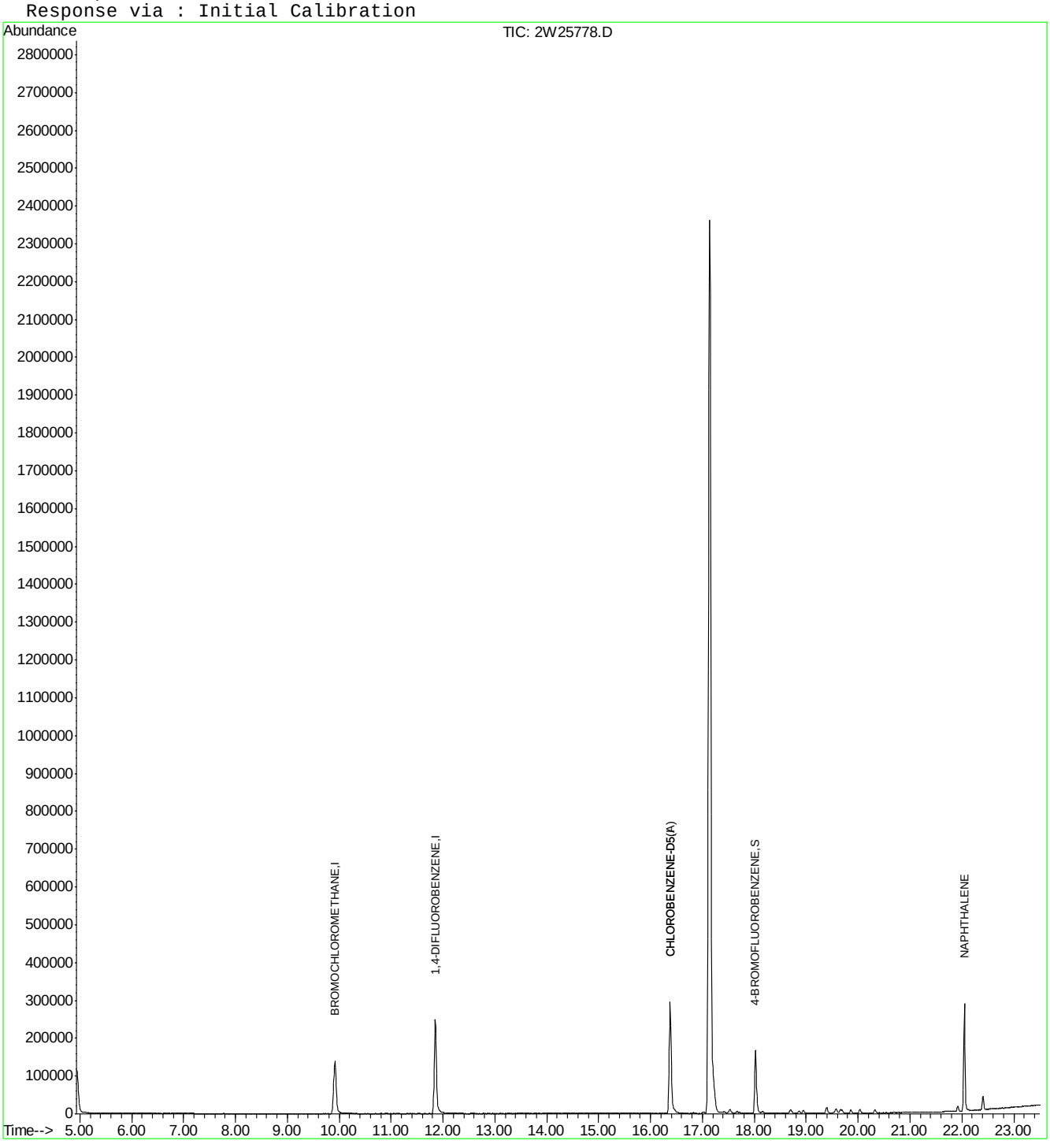
Target Compounds						Qvalue
96) NAPHTHALENE	22.05	128	287637	40.05	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25778.D Vial: 14
Acq On : 2 Oct 2009 6:27 pm Operator: YOUMINH
Sample : IC1085-40 Inst : MS2W
Misc : MS49009,V2W1085,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:06 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Initial Calibration



ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25783.D Vial: 10
Acq On : 5 Oct 2009 7:11 am Operator: YOUMINH
Sample : CC1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:15:55 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	70641	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	292890	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	138205	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	138205	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	70088	5.17	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 103.40%

Target Compounds						Qvalue
2) FREON 115	4.99	119	50111	8.60	PPBV	97
3) DICHLORODIFLUOROMETHANE	4.99	85	69108	8.97	PPBV	98
4) FREON 152A	5.12	65	56454	10.33	PPBV	95
5) CHLORODIFLUOROMETHANE	5.15	67	32209	11.24	PPBV	100
6) PROPYLENE	5.20	41	62516	8.79	PPBV	97
7) PROPANE	5.22	43	21975	8.50	PPBV #	1
8) FREON 114	5.53	85	303910	10.22	PPBV	99
9) CHLOROMETHANE	5.43	52	25560	9.47	PPBV	96
10) VINYL CHLORIDE	5.67	62	98111	9.50	PPBV	99
11) 1,3-BUTADIENE	5.80	54	71245	10.02	PPBV	94
12) n-BUTANE	5.86	43	126032	9.46	PPBV	99
13) BROMOMETHANE	6.08	94	110142	10.19	PPBV	100
14) CHLOROETHANE	6.26	64	59065	10.29	PPBV	99
15) FREON 123	6.72	83	269591	10.26	PPBV #	98
16) FREON 123A	6.78	117	172716	10.50	PPBV	93
17) TRICHLOROFLUOROMETHANE	7.02	101	351807	10.67	PPBV	100
18) ISOPROPYL ALCOHOL	7.06	45	131808	9.54	PPBV	98
19) ACETONE	6.84	58	41459	8.93	PPBV #	89
20) PENTANE	7.36	42	75713	9.08	PPBV	93
21) TVHC as EQUIV PENTANE	7.37	TIC	543901m	9.40	PPBV	
22) ETHYL ETHER	7.37	74	40616	9.58	PPBV	99
23) IODOMETHANE	7.60	142	280317	10.36	PPBV	92
24) 1,1-DICHLOROETHYLENE	7.65	96	90069	9.34	PPBV	96
25) CARBON DISULFIDE	8.11	76	259177	9.25	PPBV	97
26) ETHANOL	6.36	45	23525	8.18	PPBV	97
27) BROMOETHENE	6.61	106	120134	10.66	PPBV	99
28) METHYLENE CHLORIDE	7.76	84	77578	9.03	PPBV	97
29) 3-CHLOROPROPENE	7.88	76	39185	9.82	PPBV	93
30) FREON 113	8.02	151	169470	9.98	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.70	96	101493	9.81	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.66	59	169800	10.35	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	8.94	73	239613	9.86	PPBV	98
34) TETRAHYDROFURAN	10.47	42	59704	9.01	PPBV	95
35) HEXANE	9.94	57	109529	9.25	PPBV	92
36) VINYL ACETATE	9.02	86	18075	9.69	PPBV	99
37) 1,1-DICHLOROETHANE	8.91	63	160305	9.91	PPBV	99
38) METHYL ETHYL KETONE	9.28	72	36037	9.78	PPBV	98
39) cis-1,2-DICHLOROETHYLENE	9.74	96	99210	9.29	PPBV	99
40) ETHYL ACETATE	9.92	61	19406	9.29	PPBV #	89
41) CHLOROFORM	10.03	83	203016	10.33	PPBV	100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25783.D Vial: 10
Acq On : 5 Oct 2009 7:11 am Operator: YOUMINH
Sample : CC1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:15:55 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.83	57	128784	9.85	PPBV		98
43)	1,1,1-TRICHLOROETHANE	11.06	97	238603	10.88	PPBV		99
44)	CARBON TETRACHLORIDE	11.68	117	259758	11.20	PPBV		99
45)	1,2-DICHLOROETHANE	10.79	62	143513	11.05	PPBV		99
47)	BENZENE	11.52	78	261626	9.70	PPBV		100
48)	CYCLOHEXANE	11.81	84	117787	9.37	PPBV		97
49)	2,3-DIMETHYLPENTANE	12.02	71	50739	9.78	PPBV		99
50)	TRICHLOROETHYLENE	12.59	95	120271	10.29	PPBV		100
51)	1,2-DICHLOROPROPANE	12.35	63	79044	9.04	PPBV		91
52)	BROMODICHLOROMETHANE	12.55	83	209813	11.38	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.61	57	304661	9.81	PPBV		99
54)	1,4-DIOXANE	12.60	88	49636	10.29	PPBV	#	76
55)	METHYL METHACRYLATE	12.75	69	68497	10.27	PPBV		97
56)	HEPTANE	12.86	43	106485	9.93	PPBV		98
57)	TVHC as EQUIV HEPTANE	12.86	TIC	572282m	10.15	PPBV		
58)	METHYL ISOBUTYL KETONE	13.49	43	127301	10.38	PPBV		97
59)	cis-1,3-DICHLOROPROPENE	13.46	75	139871	10.72	PPBV		94
60)	TOLUENE	14.49	92	176232	9.97	PPBV		97
61)	trans-1,3-DICHLOROPROPENE	13.99	75	137751	11.10	PPBV		97
62)	1,1,2-TRICHLOROETHANE	14.19	83	78978	9.85	PPBV		99
64)	2-HEXANONE	14.74	58	61425	10.18	PPBV		96
65)	TETRACHLOROETHYLENE	15.70	164	135586	10.09	PPBV		98
66)	DIBROMOCHLOROMETHANE	14.95	129	208900	11.95	PPBV		100
67)	1,2-DIBROMOETHANE	15.22	107	143973	10.45	PPBV		99
68)	OCTANE	15.48	43	121974	9.61	PPBV		96
69)	1,1,1,2-TETRACHLOROETHANE	16.40	131	136088	10.68	PPBV	#	100
70)	CHLOROBENZENE	16.43	112	202880	9.56	PPBV		100
71)	ETHYLBENZENE	16.82	91	340636	10.18	PPBV		99
72)	m,p-XYLENE	17.01	106	251442	19.31	PPBV		93
73)	o-XYLENE	17.53	106	115659	9.43	PPBV		94
74)	STYRENE	17.41	104	171242	10.95	PPBV		97
75)	NONANE	17.72	43	101954	9.26	PPBV		99
76)	BROMOFORM	17.13	173	166122	11.05	PPBV		100
78)	1,1,2,2-TETRACHLOROETHANE	17.53	83	117686	8.78	PPBV		98
79)	ISOPROPYLBENZENE	18.15	105	323770	9.47	PPBV		98
80)	2-CHLOROTOLUENE	18.68	126	71722	9.66	PPBV		99
81)	n-PROPYLBENZENE	18.70	120	76584	9.87	PPBV		93
82)	4-ETHYLTOLUENE	18.86	105	258219	10.27	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.94	105	225063	9.71	PPBV		97
84)	TERT-BUTYLBENZENE	19.39	134	51423	8.85	PPBV		88
85)	1,2,4-TRIMETHYLBENZENE	19.40	105	199240	9.92	PPBV		98
86)	m-DICHLOROBENZENE	19.58	146	113831	9.20	PPBV		99
87)	BENZYL CHLORIDE	19.55	91	105448	10.04	PPBV		99
88)	p-DICHLOROBENZENE	19.65	146	99754	8.87	PPBV		98
89)	SEC-BUTYLBENZENE	19.69	134	56809	9.52	PPBV		98
90)	p-ISOPROPYLTOLUENE	19.86	134	54999	9.26	PPBV		93
91)	o-DICHLOROBENZENE	20.03	146	95292	9.23	PPBV		99
92)	n-BUTYLBENZENE	20.33	134	36677	9.65	PPBV		98
93)	HEXACHLOROBUTADIENE	22.41	225	29418	7.61	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25783.D Vial: 10
Acq On : 5 Oct 2009 7:11 am Operator: YOUMINH
Sample : CC1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:15:55 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

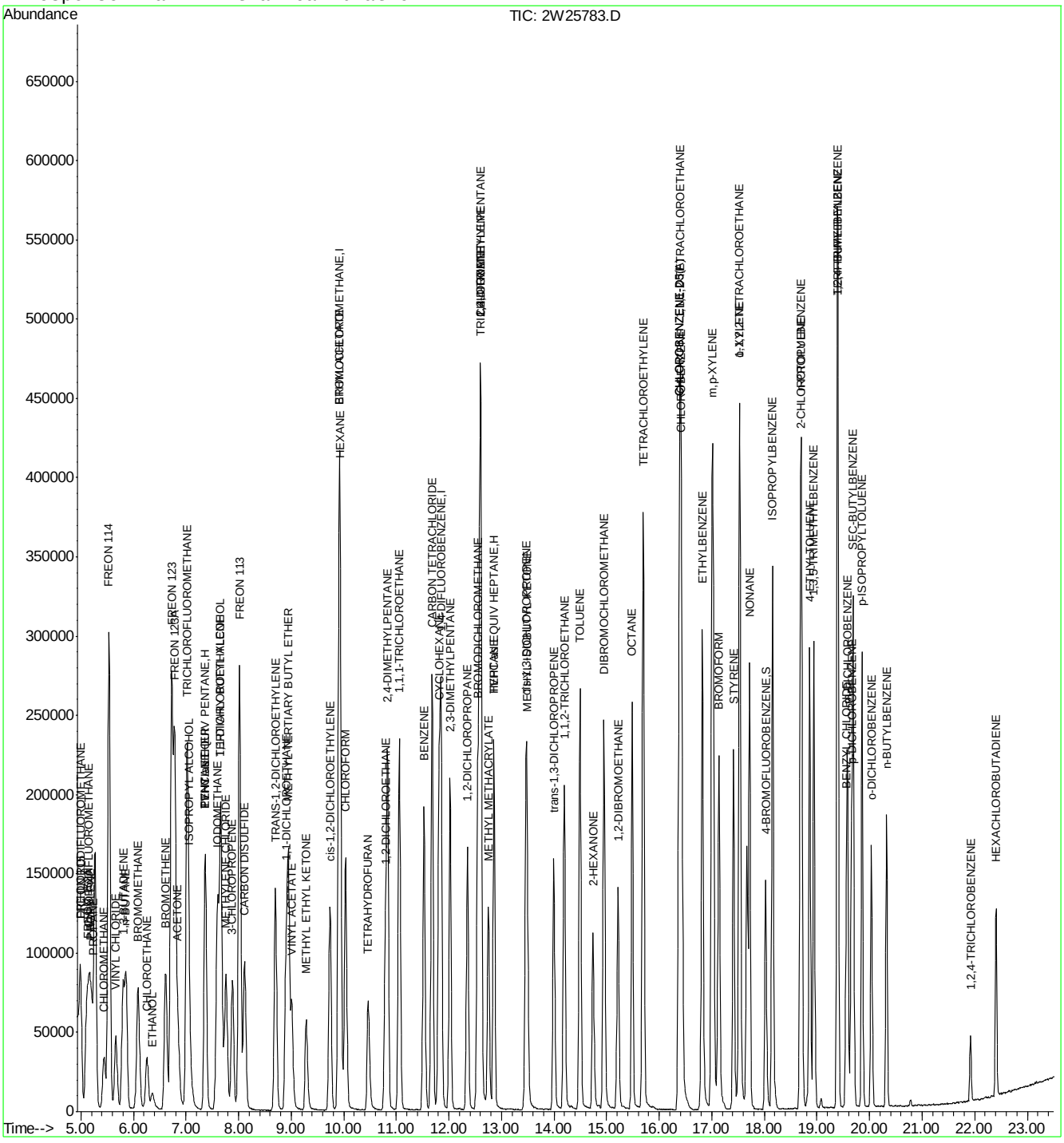
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	16757	9.42	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25783.D Vial: 10
Acq On : 5 Oct 2009 7:11 am Operator: YOUMINH
Sample : CC1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:26 2009 Quant Results File: M2W1085.RES

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration



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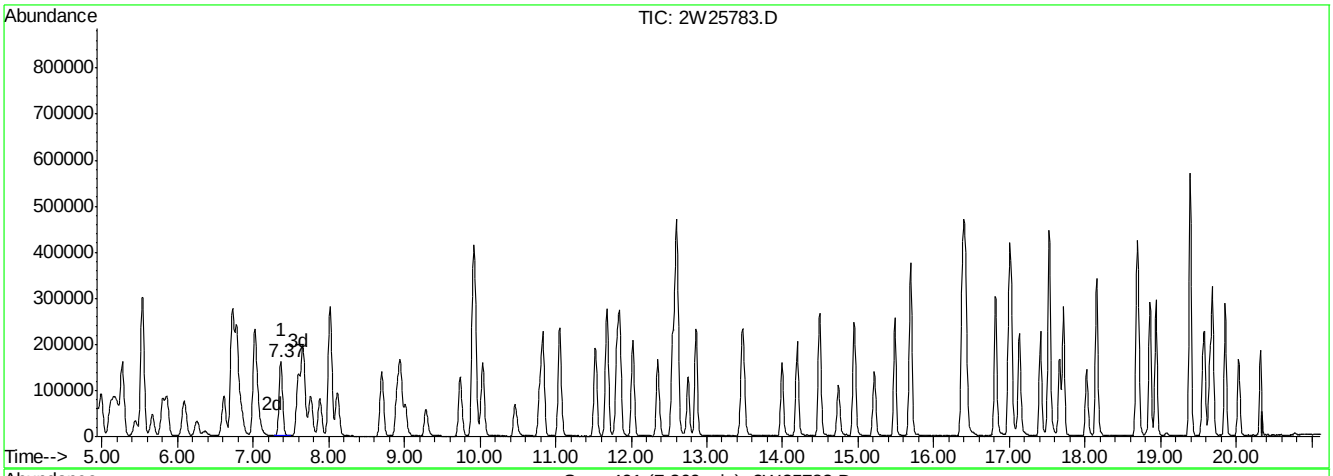
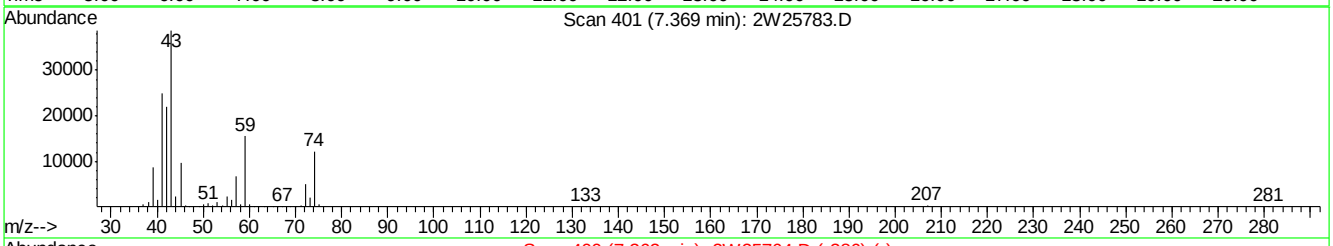
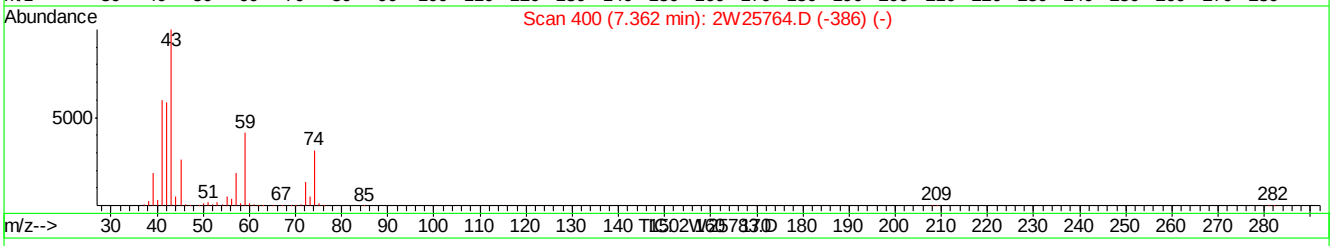
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25783.D Vial: 10
Acq On : 5 Oct 2009 7:11 am Operator: YOUMINH
Sample : CC1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:26 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.37min 9.40PPBV m

response 543901

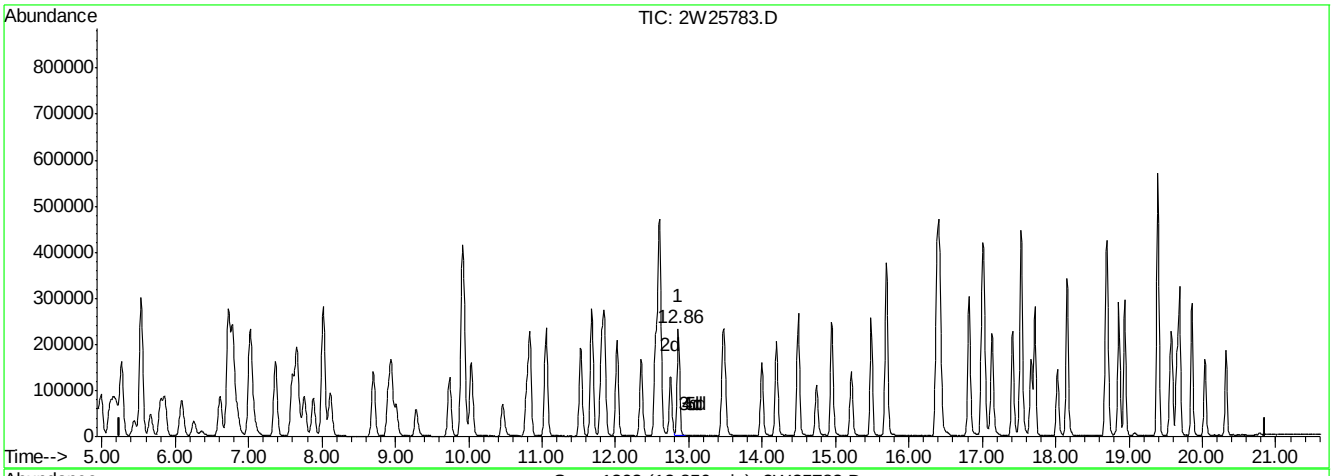
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

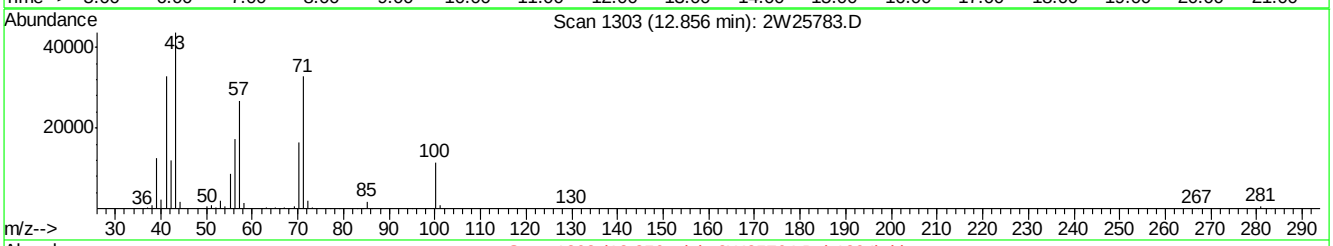
2W25783.D M2W1085.M Tue Oct 06 11:55:52 2009 MS2W

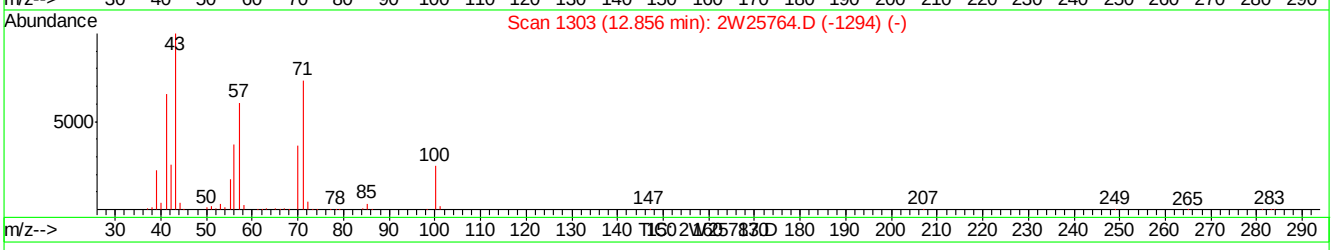
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25783.D Vial: 10
Acq On : 5 Oct 2009 7:11 am Operator: YOUMINH
Sample : CC1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:26 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 10.15PPBV m

response 572282

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25783.D M2W1085.M Tue Oct 06 11:55:56 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:12:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.91	128	65111	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.85	114	277959	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.38	82	145677	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.38	82	145622	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.03	95	82545	5.77	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 115.40%

Target Compounds						Qvalue
2) FREON 115	5.00	119	54973	10.24	PPBV	97
3) DICHLORODIFLUOROMETHANE	5.00	85	72742	10.24	PPBV	97
4) FREON 152A	5.11	65	52139	10.35	PPBV	91
5) CHLORODIFLUOROMETHANE	5.16	67	31485	11.92	PPBV	99
6) PROPYLENE	5.20	41	58012	8.84	PPBV	95
7) PROPANE	5.23	43	20151	8.46	PPBV #	1
8) FREON 114	5.54	85	278483	10.16	PPBV	97
9) CHLOROMETHANE	5.45	52	22028	8.86	PPBV #	69
10) VINYL CHLORIDE	5.67	62	84853	8.91	PPBV	100
11) 1,3-BUTADIENE	5.81	54	58338	8.90	PPBV	92
12) n-BUTANE	5.86	43	101328	8.25	PPBV	99
13) BROMOMETHANE	6.09	94	96164	9.65	PPBV	100
14) CHLOROETHANE	6.26	64	47562	8.99	PPBV	97
15) FREON 123	6.73	83	225296	9.30	PPBV #	96
16) FREON 123A	6.78	117	154939	10.22	PPBV	87
17) TRICHLOROFLUOROMETHANE	7.02	101	328861	10.82	PPBV	100
18) ISOPROPYL ALCOHOL	7.07	45	112234	8.82	PPBV	97
19) ACETONE	6.85	58	32271	7.54	PPBV #	78
20) PENTANE	7.36	42	62123	8.08	PPBV	86
21) TVHC as EQUIV PENTANE	7.37	TIC	464499m	8.71	PPBV	
22) ETHYL ETHER	7.37	74	36332	9.30	PPBV	99
23) IODOMETHANE	7.60	142	254921	10.22	PPBV	90
24) 1,1-DICHLOROETHYLENE	7.66	96	79288	8.92	PPBV	94
25) CARBON DISULFIDE	8.12	76	225906	8.75	PPBV	96
26) ETHANOL	6.37	45	19822	7.48	PPBV	97
27) BROMOETHENE	6.61	106	104124	10.02	PPBV #	98
28) METHYLENE CHLORIDE	7.76	84	68443	8.64	PPBV	96
29) 3-CHLOROPROPENE	7.89	76	34620	9.41	PPBV #	90
30) FREON 113	8.02	151	157915	10.09	PPBV	96
31) TRANS-1,2-DICHLOROETHYLENE	8.70	96	90774	9.52	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.67	59	153373	10.14	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.95	73	225607	10.07	PPBV	97
34) TETRAHYDROFURAN	10.47	42	54297	8.89	PPBV	94
35) HEXANE	9.94	57	98054	8.98	PPBV	90
36) VINYL ACETATE	9.02	86	17047	9.92	PPBV	100
37) 1,1-DICHLOROETHANE	8.91	63	144169	9.67	PPBV	99
38) METHYL ETHYL KETONE	9.28	72	32175	9.47	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	9.74	96	89978	9.14	PPBV	97
40) ETHYL ACETATE	9.92	61	16917	8.79	PPBV #	80
41) CHLOROFORM	10.03	83	190823	10.53	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:12:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.84	57	115396	9.57	PPBV		98
43) 1,1,1-TRICHLOROETHANE	11.06	97	234158	11.58	PPBV		99
44) CARBON TETRACHLORIDE	11.68	117	252324	11.80	PPBV		99
45) 1,2-DICHLOROETHANE	10.79	62	141227	11.79	PPBV		99
47) BENZENE	11.53	78	241102	9.42	PPBV		99
48) CYCLOHEXANE	11.81	84	109520	9.18	PPBV		96
49) 2,3-DIMETHYLPENTANE	12.02	71	47402	9.63	PPBV		99
50) TRICHLOROETHYLENE	12.59	95	114557	10.33	PPBV		99
51) 1,2-DICHLOROPROPANE	12.35	63	76432	9.21	PPBV		89
52) BROMODICHLOROMETHANE	12.55	83	204660	11.70	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.61	57	281029	9.54	PPBV		98
54) 1,4-DIOXANE	12.61	88	46681	10.20	PPBV	#	52
55) METHYL METHACRYLATE	12.75	69	65402	10.33	PPBV		96
56) HEPTANE	12.86	43	98714	9.70	PPBV		98
57) TVHC as EQUIV HEPTANE	12.86	TIC	536303m	10.02	PPBV		
58) METHYL ISOBUTYL KETONE	13.49	43	119748	10.29	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.46	75	140199	11.33	PPBV		93
60) TOLUENE	14.49	92	181434	10.82	PPBV		99
61) trans-1,3-DICHLOROPROPENE	13.99	75	141112	11.98	PPBV		96
62) 1,1,2-TRICHLOROETHANE	14.19	83	79992	10.51	PPBV		96
64) 2-HEXANONE	14.74	58	60532	9.51	PPBV		96
65) TETRACHLOROETHYLENE	15.70	164	142898	10.09	PPBV		99
66) DIBROMOCHLOROMETHANE	14.95	129	220323	11.95	PPBV		100
67) 1,2-DIBROMOETHANE	15.22	107	153148	10.55	PPBV		100
68) OCTANE	15.48	43	124089	9.28	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.40	131	146175	10.88	PPBV	#	99
70) CHLOROBENZENE	16.43	112	219437	9.81	PPBV		99
71) ETHYLBENZENE	16.82	91	368339	10.44	PPBV		99
72) m,p-XYLENE	17.02	106	273228	19.90	PPBV		96
73) o-XYLENE	17.53	106	132430	10.24	PPBV		95
74) STYRENE	17.41	104	195830	11.88	PPBV		98
75) NONANE	17.72	43	116989	10.08	PPBV		98
76) BROMOFORM	17.13	173	185212	11.69	PPBV		100
78) 1,1,2,2-TETRACHLOROETHANE	17.53	83	133629	9.46	PPBV		98
79) ISOPROPYLBENZENE	18.15	105	379893	10.54	PPBV		98
80) 2-CHLOROTOLUENE	18.68	126	86619	11.07	PPBV		98
81) n-PROPYLBENZENE	18.71	120	93194	11.39	PPBV		97
82) 4-ETHYLTOLUENE	18.86	105	311386	11.75	PPBV		99
83) 1,3,5-TRIMETHYLBENZENE	18.94	105	267964	10.97	PPBV		98
84) TERT-BUTYLBENZENE	19.39	134	62377	10.19	PPBV		92
85) 1,2,4-TRIMETHYLBENZENE	19.40	105	238145	11.25	PPBV		98
86) m-DICHLOROBENZENE	19.58	146	141910	10.88	PPBV		99
87) BENZYL CHLORIDE	19.55	91	126706	11.44	PPBV		99
88) p-DICHLOROBENZENE	19.66	146	125881	10.62	PPBV		99
89) SEC-BUTYLBENZENE	19.69	134	69635	11.07	PPBV		99
90) p-ISOPROPYLTOLUENE	19.86	134	67098	10.72	PPBV		95
91) o-DICHLOROBENZENE	20.03	146	119111	10.95	PPBV		100
92) n-BUTYLBENZENE	20.33	134	45164	11.27	PPBV		98
93) HEXACHLOROBUTADIENE	22.41	225	35670	8.76	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 06 11:12:06 2009 Quant Results File: M2W1085.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.92	180	21787	11.62	PPBV	98

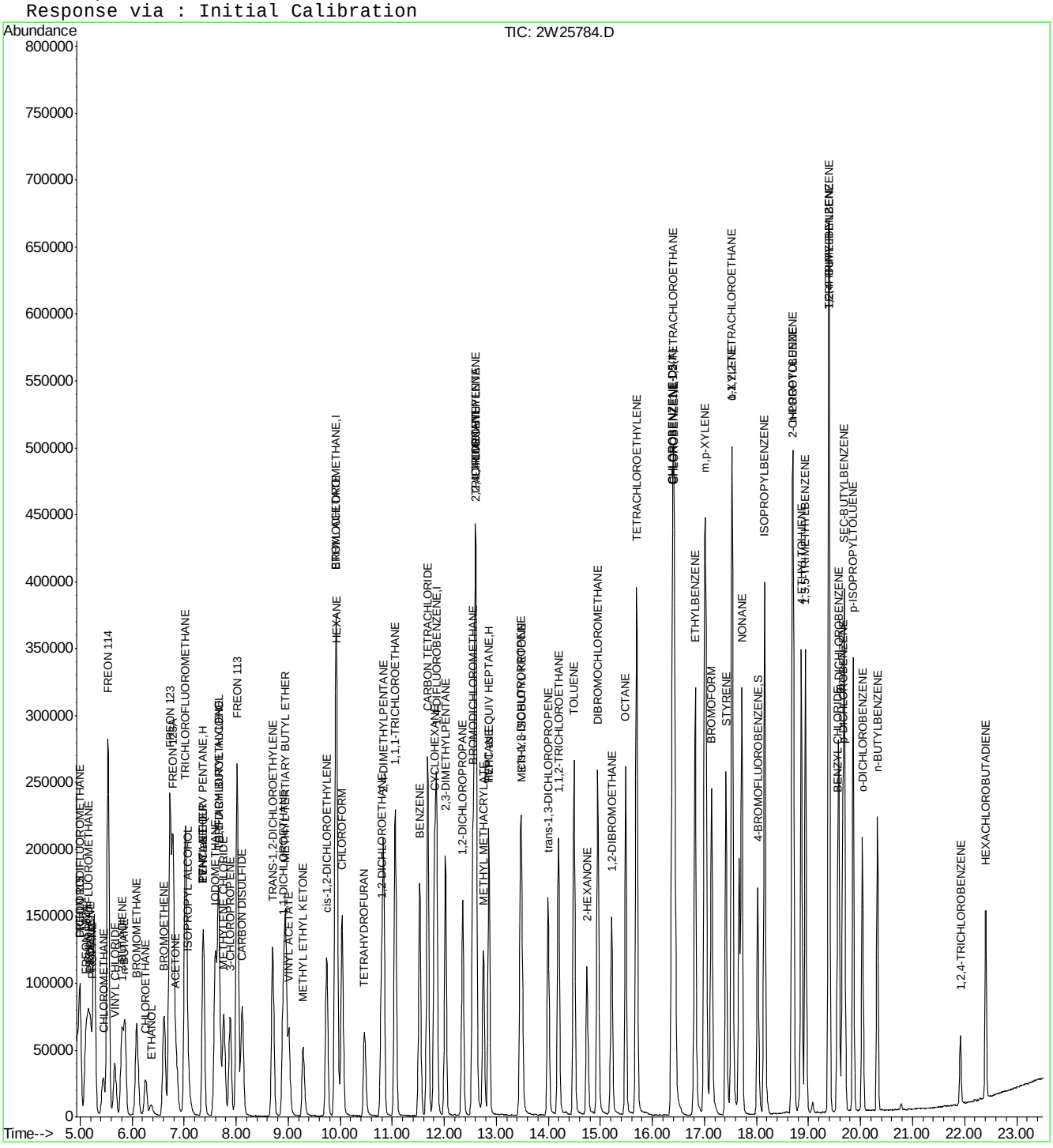
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:12 2009 Quant Results File: M2W1085.RES

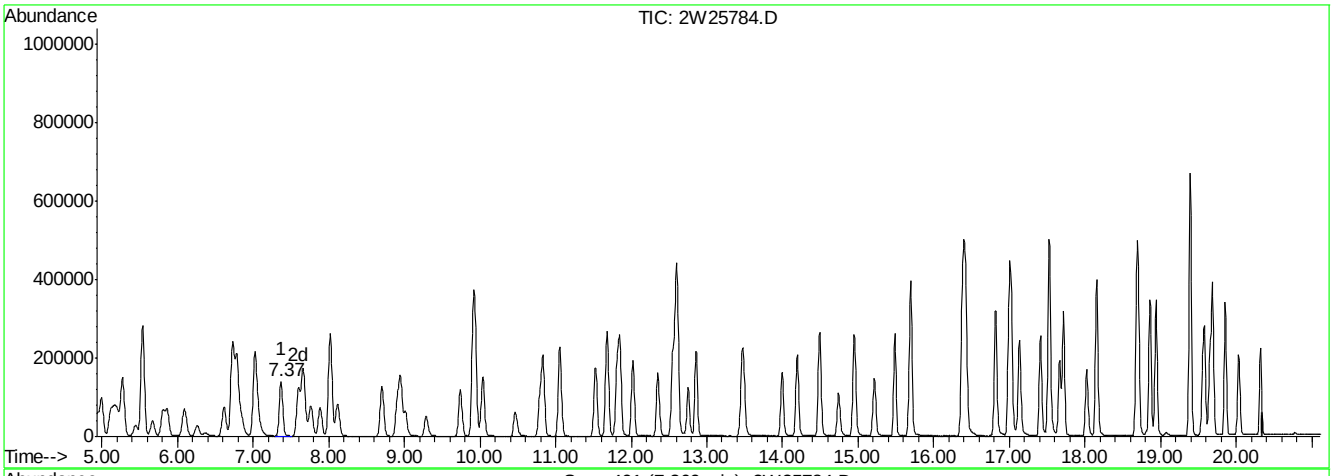
Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Tue Oct 06 11:11:53 2009
Response via : Initial Calibration

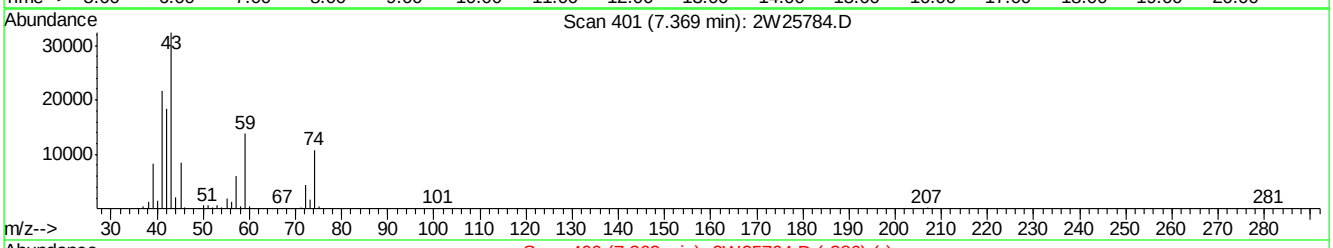


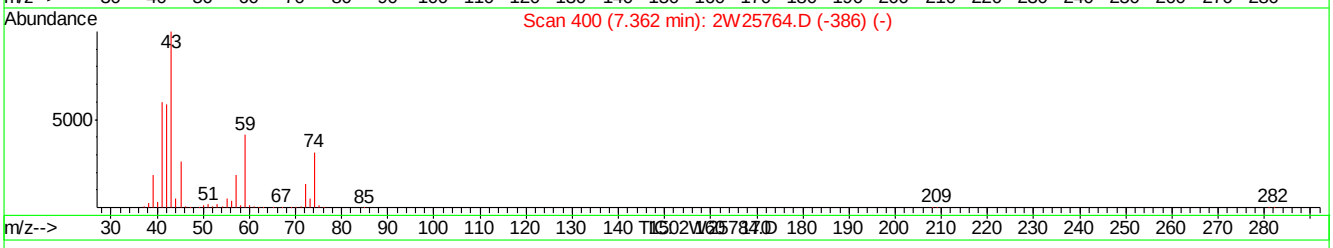
Quantitation Report (Qedit)

```
Data File : C:\MSDCHEM\1\DATA\2W25784.D                    Vial: 3
Acq On    :  5 Oct 2009   8:40 am                     Operator: YOUMINH
Sample    : ICV1085-10                                Inst    : MS2W
Misc      : MS49009,V2W1086,,,,,1                     Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct  6 11:09 2009              Quant Results File: temp.res

Method       : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title        : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update  : Mon Oct 05 09:33:25 2009
Response via : Multiple Level Calibration
```







(21) TVHC as EQUIV PENTANE (H)

7.37min 8.71PPBV m

response 464487

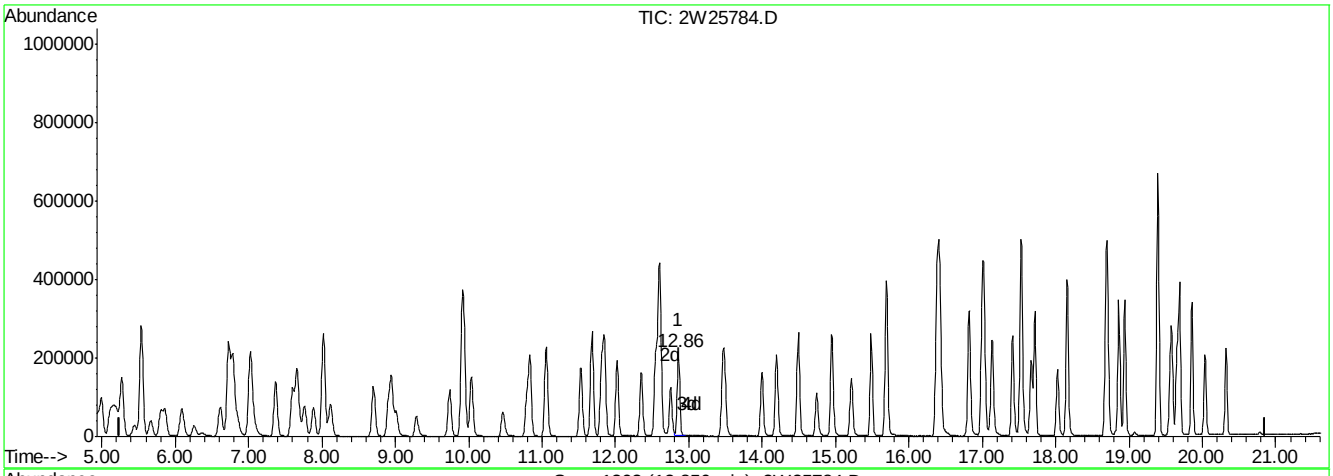
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

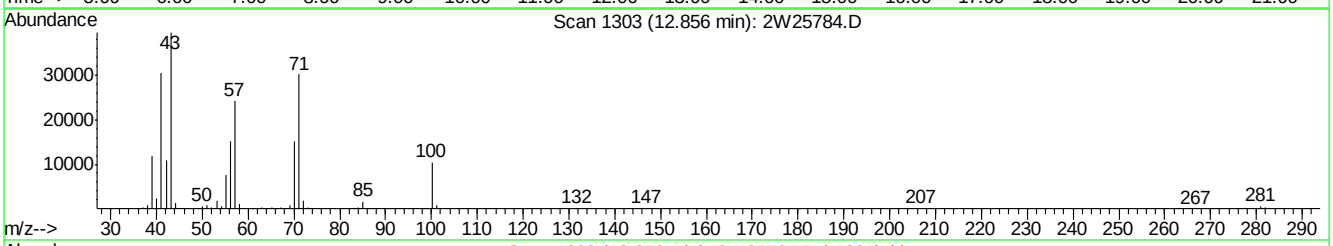
2W25784.D M2W1085.M Tue Oct 06 11:10:02 2009 MS2W

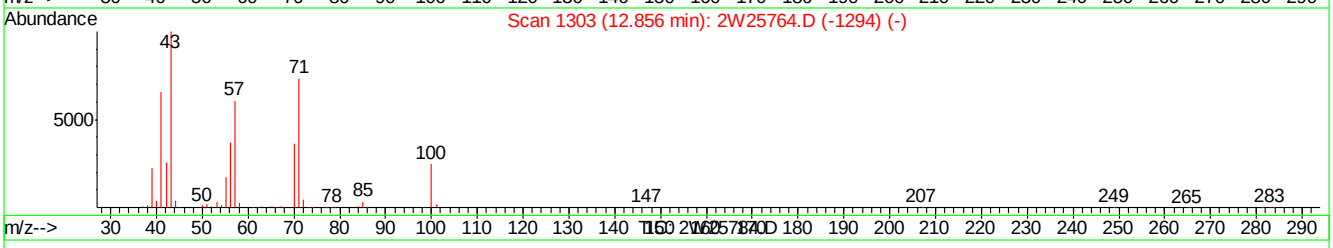
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25784.D Vial: 3
Acq On : 5 Oct 2009 8:40 am Operator: YOUMINH
Sample : ICV1085-10 Inst : MS2W
Misc : MS49009,V2W1086,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Oct 6 11:09 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1085.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 09:33:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.86min 10.01PPBV m

response 535851

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25784.D M2W1085.M Tue Oct 06 11:10:06 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:36:22 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	76719	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.47	114	347493	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.72	82	164995	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.72	82	164995	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.36	95	95007	5.00	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 100.00%			
Target Compounds						Qvalue
2) FREON 115	4.07	85	221329	10.00	PPBV	100
3) FREON 152A	4.16	65	69900	10.00	PPBV	100
4) CHLORODIFLUOROMETHANE	4.19	67	33525	10.00	PPBV	100
5) DICHLORODIFLUOROMETHANE	4.26	85	313198	10.00	PPBV	100
6) PROPANE	4.22	43	37635	10.00	PPBV	100
7) PROPYLENE	4.21	41	106452	10.00	PPBV	100
8) FREON 114	4.44	85	318558	10.00	PPBV	100
9) CHLOROMETHANE	4.38	50	96771	10.00	PPBV	100
10) VINYL CHLORIDE	4.53	62	111173	10.00	PPBV	100
11) 1,3-BUTADIENE	4.62	54	78969	10.00	PPBV	100
12) n-BUTANE	4.64	43	159995	10.00	PPBV	100
13) BROMOMETHANE	4.82	94	107995	10.00	PPBV	100
14) CHLOROETHANE	4.93	64	57401	10.00	PPBV	100
15) FREON 123	5.26	83	241893	10.00	PPBV	100
16) FREON 123A	5.30	117	153846	10.00	PPBV	100
17) TRICHLOROFLUOROMETHANE	5.46	101	304227	10.00	PPBV	100
18) ISOPROPYL ALCOHOL	5.53	45	136533	10.00	PPBV	100
19) ACETONE	5.35	58	41175	10.00	PPBV	100
20) PENTANE	5.67	42	97687	10.00	PPBV	100
21) TVHC as EQUIV PENTANE	5.67	TIC	642427m	10.00	PPBV	
22) ETHYL ETHER	5.70	74	42038	10.00	PPBV	100
23) IODOMETHANE	5.88	142	298912	10.00	PPBV	100
24) 1,1-DICHLOROETHYLENE	5.93	96	94529	10.00	PPBV	100
25) CARBON DISULFIDE	6.26	76	283040	10.00	PPBV	100
26) ETHANOL	5.04	45	28200	10.00	PPBV	100
27) BROMOETHENE	5.18	106	106089	10.00	PPBV	100
28) METHYLENE CHLORIDE	6.04	84	84296	10.00	PPBV	100
29) 3-CHLOROPROPENE	6.10	76	42196	10.00	PPBV	100
30) FREON 113	6.19	151	184152	10.00	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	101383	10.00	PPBV	100
32) TERTIARY BUTYL ALCOHOL	5.95	59	186242	10.00	PPBV	100
33) METHYL TERTIARY BUTYL ETHE	6.89	73	253976	10.00	PPBV	100
34) TETRAHYDROFURAN	8.20	72	38927	10.00	PPBV	100
35) HEXANE	7.67	57	136915	10.00	PPBV	100
36) VINYL ACETATE	7.00	86	19286	10.00	PPBV	100
37) 1,1-DICHLOROETHANE	6.90	63	177896	10.00	PPBV	100
38) METHYL ETHYL KETONE	7.21	72	37773	10.00	PPBV	100
39) cis-1,2-DICHLOROETHYLENE	7.63	96	100455	10.00	PPBV	100
40) DIISOPROPYL ETHER	7.68	45	245083	10.00	PPBV	100
41) ETHYL ACETATE	7.76	61	22393	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:36:22 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.86	83	214724	10.00	PPBV	100
43)	2,4-DIMETHYLPENTANE	8.43	57	155660	10.00	PPBV	100
44)	1,1,1-TRICHLOROETHANE	8.71	97	235001	10.00	PPBV	100
45)	CARBON TETRACHLORIDE	9.28	117	256555	10.00	PPBV	100
46)	1,2-DICHLOROETHANE	8.49	62	146111	10.00	PPBV	100
48)	BENZENE	9.15	78	283054	10.00	PPBV	100
49)	CYCLOHEXANE	9.32	56	138412	10.00	PPBV	100
50)	2,3-DIMETHYLPENTANE	9.50	71	60113	10.00	PPBV	100
51)	TRICHLOROETHYLENE	10.11	95	134954	10.00	PPBV	100
52)	1,2-DICHLOROPROPANE	9.87	63	98832	10.00	PPBV	100
53)	BROMODICHLOROMETHANE	10.09	83	224942	10.00	PPBV	100
54)	2,2,4-TRIMETHYLPENTANE	10.03	57	413418	10.00	PPBV	100
55)	1,4-DIOXANE	10.14	88	56590	10.00	PPBV	100
56)	HEPTANE	10.28	43	158088	10.00	PPBV	100
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1097372m	10.00	PPBV	
58)	METHYL METHACRYLATE	10.30	69	80698	10.00	PPBV	100
59)	METHYL ISOBUTYL KETONE	10.92	43	164035	10.00	PPBV	100
60)	cis-1,3-DICHLOROPROPENE	10.95	75	158867	10.00	PPBV	100
61)	TOLUENE	11.89	92	203732	10.00	PPBV	100
62)	trans-1,3-DICHLOROPROPENE	11.46	75	153283	10.00	PPBV	100
63)	1,1,2-TRICHLOROETHANE	11.63	83	95463	10.00	PPBV	100
65)	2-HEXANONE	12.12	43	154088	10.00	PPBV	100
66)	TETRACHLOROETHYLENE	13.03	164	171454	10.00	PPBV	100
67)	DIBROMOCHLOROMETHANE	12.35	129	233092	10.00	PPBV	100
68)	1,2-DIBROMOETHANE	12.55	107	175864	10.00	PPBV	100
69)	OCTANE	12.79	43	208351	10.00	PPBV	100
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	167703	10.00	PPBV	100
71)	CHLOROBENZENE	13.76	112	268602	10.00	PPBV	100
72)	ETHYLBENZENE	14.12	91	420348	10.00	PPBV	100
73)	m,p-XYLENE	14.31	106	325015	20.00	PPBV	100
74)	o-XYLENE	14.83	106	156757	10.00	PPBV	100
75)	STYRENE	14.72	104	217290	10.00	PPBV	100
76)	NONANE	14.99	43	201568	10.00	PPBV	100
77)	BROMOFORM	14.44	173	216646	10.00	PPBV	100
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	185005	10.00	PPBV	100
80)	1,2,3-TRICHLOROPROPANE	14.98	75	147889	10.00	PPBV	100
81)	ISOPROPYLBENZENE	15.47	105	450720	10.00	PPBV	100
82)	2-CHLOROTOLUENE	16.04	126	106326	10.00	PPBV	100
83)	n-PROPYLBENZENE	16.06	120	116361	10.00	PPBV	100
84)	4-ETHYLTOLUENE	16.23	105	385204	10.00	PPBV	100
85)	1,3,5-TRIMETHYLBENZENE	16.32	105	323630	10.00	PPBV	100
86)	tert-BUTYLBENZENE	16.79	134	83684	10.00	PPBV	100
87)	1,2,4-TRIMETHYLBENZENE	16.81	105	296168	10.00	PPBV	100
88)	m-DICHLOROBENZENE	17.01	146	190133	10.00	PPBV	100
89)	BENZYL CHLORIDE	17.01	91	182480	10.00	PPBV	100
90)	p-DICHLOROBENZENE	17.10	146	175162	10.00	PPBV	100
91)	sec-BUTYLBENZENE	17.11	134	96470	10.00	PPBV	100
92)	p-ISOPROPYLTOLUENE	17.30	134	93213	10.00	PPBV	100
93)	o-DICHLOROBENZENE	17.51	146	164781	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:36:22 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

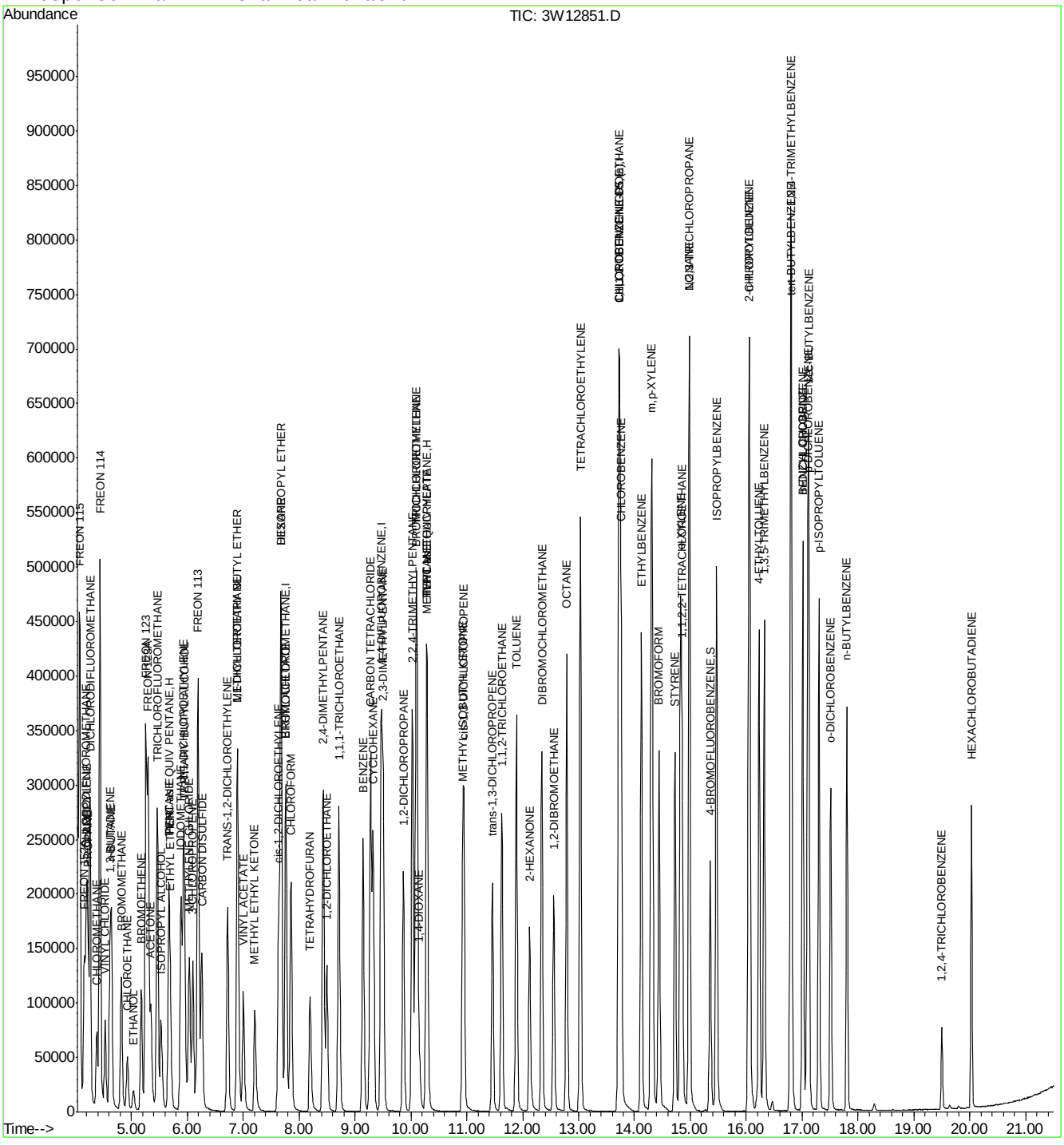
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	68833	10.00	PPBV	100
95)	HEXACHLOROBUTADIENE	20.03	225	61835	10.00	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.50	180	29859	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:36 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

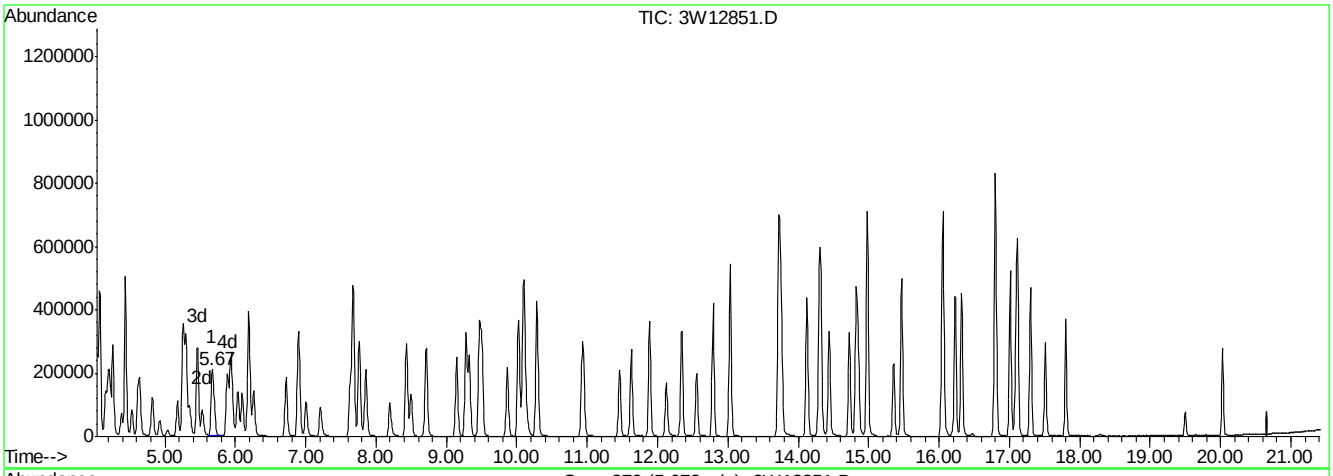


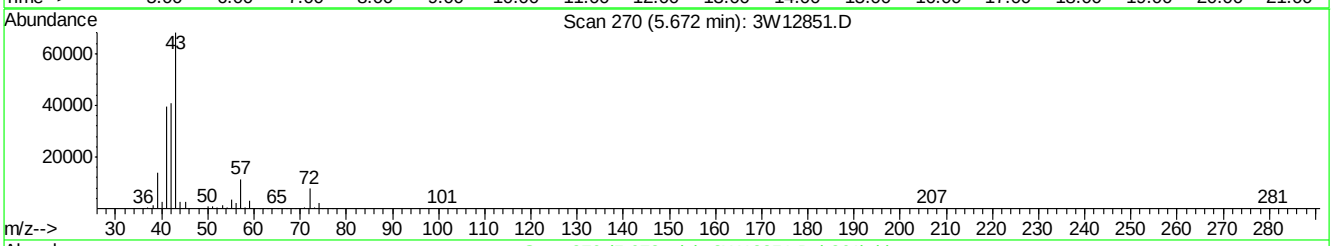
ACCUTEST Laboratories JA28238

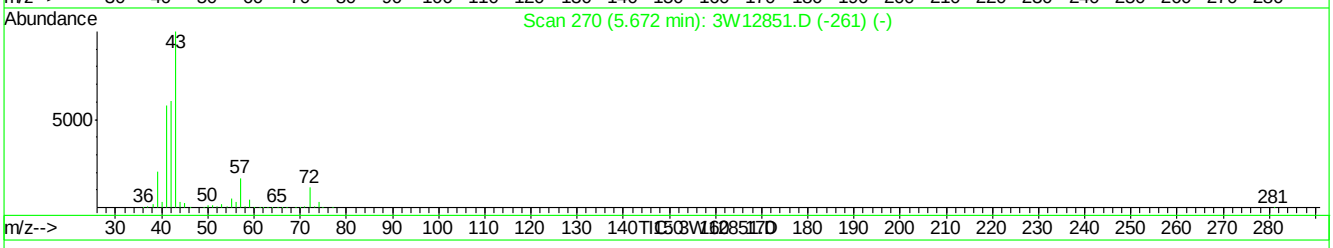
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:36 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 10.00PPBV m

response 642427

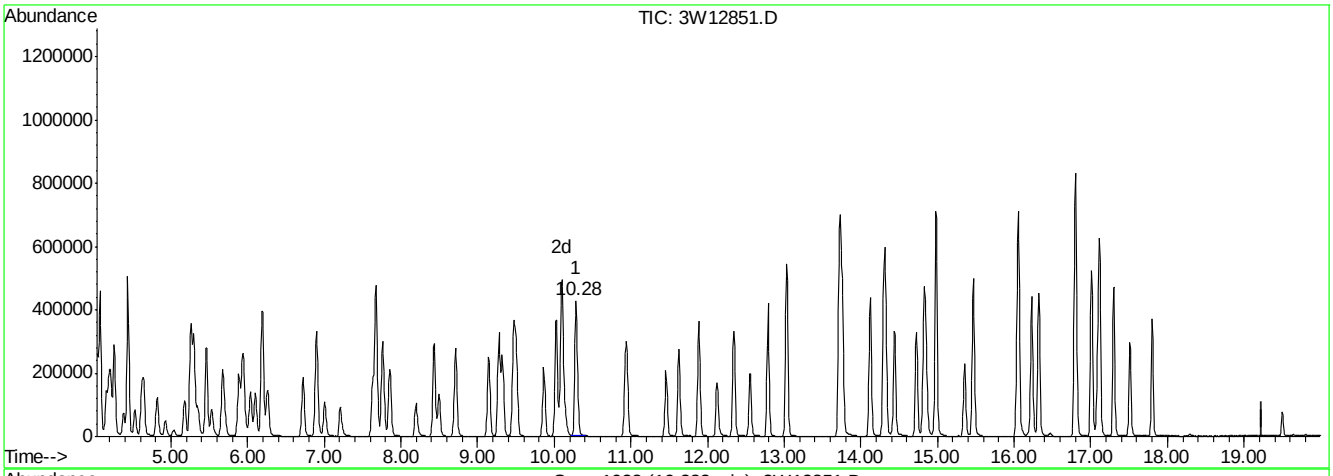
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.06#
0.00	0.00	0.05#
0.00	0.00	0.00

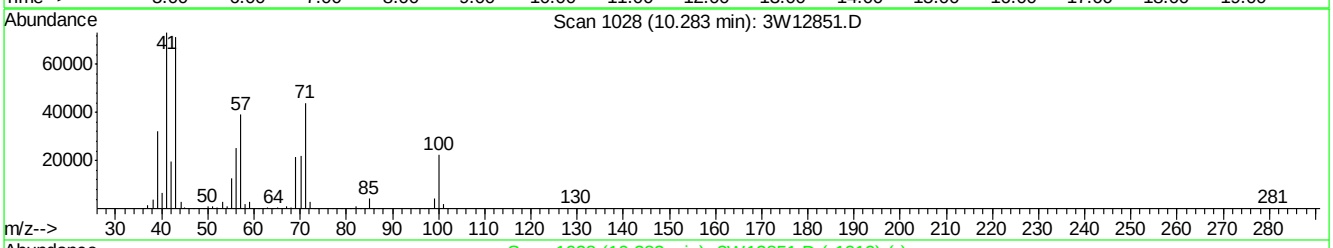
3W12851.D M3W523.M Tue Oct 06 12:25:32 2009 MS3W

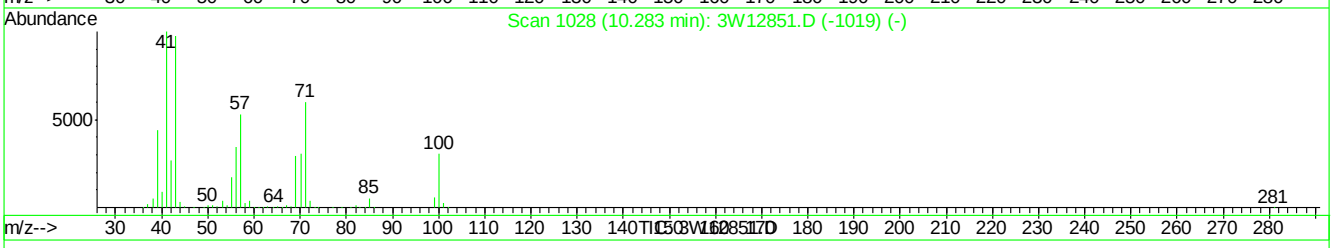
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:36 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.28min 10.00PPBV m

response 1097372

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.03#
0.00	0.00	0.03#
0.00	0.00	0.00

3W12851.D M3W523.M Tue Oct 06 12:25:35 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:30 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	78237	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	349998	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	141719	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	141719	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	72931	4.47	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 89.40%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	11295	0.50	PPBV	99
3) FREON 152A	4.16	65	3556	0.50	PPBV	93
4) CHLORODIFLUOROMETHANE	4.19	67	1740	0.51	PPBV	98
5) DICHLORODIFLUOROMETHANE	4.26	85	15497	0.49	PPBV	96
6) PROPANE	4.22	43	1960	0.51	PPBV	100
7) PROPYLENE	4.21	41	5507	0.51	PPBV	93
8) FREON 114	4.44	85	16759	0.52	PPBV	99
9) CHLOROMETHANE	4.38	50	5111	0.52	PPBV	90
10) VINYL CHLORIDE	4.53	62	5732	0.51	PPBV	98
11) 1,3-BUTADIENE	4.62	54	4050	0.50	PPBV	96
12) n-BUTANE	4.64	43	9330	0.57	PPBV	98
13) BROMOMETHANE	4.82	94	5734	0.52	PPBV	96
14) CHLOROETHANE	4.92	64	3009	0.51	PPBV	97
15) FREON 123	5.25	83	13336	0.54	PPBV	99
16) FREON 123A	5.29	117	8455	0.54	PPBV	100
17) TRICHLOROFLUOROMETHANE	5.46	101	15856	0.51	PPBV	99
18) ISOPROPYL ALCOHOL	5.54	45	7488	0.54	PPBV	96
19) ACETONE	5.36	58	2251	0.54	PPBV	100
20) PENTANE	5.67	42	5447	0.55	PPBV	98
21) TVHC as EQUIV PENTANE	5.67	TIC	25570m	0.39	PPBV	
22) ETHYL ETHER	5.71	74	2285	0.53	PPBV	100
23) IODOMETHANE	5.88	142	14851	0.49	PPBV	98
24) 1,1-DICHLOROETHYLENE	5.93	96	5109	0.53	PPBV	93
25) CARBON DISULFIDE	6.25	76	14845	0.51	PPBV	98
26) ETHANOL	5.04	45	2083	0.72	PPBV	97
27) BROMOETHENE	5.17	106	5809	0.54	PPBV	98
28) METHYLENE CHLORIDE	6.02	84	4830	0.56	PPBV	96
29) 3-CHLOROPROPENE	6.08	76	2144	0.50	PPBV	96
30) FREON 113	6.19	151	9374	0.50	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	6.71	96	5087	0.49	PPBV	100
32) TERTIARY BUTYL ALCOHOL	5.96	59	9795	0.52	PPBV	96
33) METHYL TERTIARY BUTYL ETHE	6.90	73	12963	0.50	PPBV	96
34) TETRAHYDROFURAN	8.23	72	1848	0.47	PPBV	98
35) HEXANE	7.66	57	6771	0.48	PPBV	95
36) VINYL ACETATE	7.00	86	823	0.42	PPBV #	96
37) 1,1-DICHLOROETHANE	6.89	63	9165	0.51	PPBV	100
38) METHYL ETHYL KETONE	7.23	72	1778	0.46	PPBV #	84
39) cis-1,2-DICHLOROETHYLENE	7.62	96	4873	0.48	PPBV	98
40) DIISOPROPYL ETHER	7.67	45	12783	0.51	PPBV	97
41) ETHYL ACETATE	7.77	61	1199	0.53	PPBV #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:30 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.84	83	10559	0.48	PPBV		98
43)	2,4-DIMETHYLPENTANE	8.43	57	7761	0.49	PPBV		96
44)	1,1,1-TRICHLOROETHANE	8.70	97	11405	0.48	PPBV		99
45)	CARBON TETRACHLORIDE	9.27	117	11733	0.45	PPBV		99
46)	1,2-DICHLOROETHANE	8.48	62	6992	0.47	PPBV		100
48)	BENZENE	9.13	78	14593	0.51	PPBV		99
49)	CYCLOHEXANE	9.32	56	6910	0.50	PPBV		98
50)	2,3-DIMETHYLPENTANE	9.50	71	3340	0.55	PPBV	#	64
51)	TRICHLOROETHYLENE	10.10	95	6307	0.46	PPBV		98
52)	1,2-DICHLOROPROPANE	9.86	63	5071	0.51	PPBV		97
53)	BROMODICHLOROMETHANE	10.08	83	9965	0.44	PPBV		97
54)	2,2,4-TRIMETHYLPENTANE	10.01	57	21288	0.51	PPBV		100
55)	1,4-DIOXANE	10.19	88	2705	0.47	PPBV		96
56)	HEPTANE	10.28	43	7942	0.50	PPBV		98
57)	TVHC as EQUIV HEPTANE	10.28	TIC	50813m	0.46	PPBV		
58)	METHYL METHACRYLATE	10.30	69	3046	0.37	PPBV	#	71
59)	METHYL ISOBUTYL KETONE	10.93	43	6951	0.42	PPBV		95
60)	cis-1,3-DICHLOROPROPENE	10.94	75	6508	0.41	PPBV		95
61)	TOLUENE	11.88	92	9515	0.46	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	5851	0.38	PPBV		97
63)	1,1,2-TRICHLOROETHANE	11.62	83	4622	0.48	PPBV		98
65)	2-HEXANONE	12.14	43	5854	0.44	PPBV		95
66)	TETRACHLOROETHYLENE	13.03	164	7748	0.53	PPBV		99
67)	DIBROMOCHLOROMETHANE	12.33	129	8421	0.42	PPBV		98
68)	1,2-DIBROMOETHANE	12.55	107	6493	0.43	PPBV		97
69)	OCTANE	12.78	43	10464	0.58	PPBV		96
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	8284	0.58	PPBV		98
71)	CHLOROBENZENE	13.76	112	11798	0.51	PPBV		97
72)	ETHYLBENZENE	14.12	91	19276	0.53	PPBV		100
73)	m,p-XYLENE	14.31	106	14658	1.05	PPBV		96
74)	o-XYLENE	14.82	106	7365	0.55	PPBV		97
75)	STYRENE	14.72	104	6138	0.33	PPBV		98
76)	NONANE	14.97	43	11359	0.66	PPBV		96
77)	BROMOFORM	14.43	173	7038	0.38	PPBV		96
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	10251	0.65	PPBV		99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	7882	0.62	PPBV		97
81)	ISOPROPYLBENZENE	15.46	105	23741	0.61	PPBV		97
82)	2-CHLOROTOLUENE	16.04	126	4963	0.54	PPBV		97
83)	n-PROPYLBENZENE	16.06	120	5208	0.52	PPBV		97
84)	4-ETHYLTOLUENE	16.23	105	17438	0.53	PPBV		98
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	17318	0.62	PPBV		99
86)	tert-BUTYLBENZENE	16.79	134	4773	0.66	PPBV		97
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	14991	0.59	PPBV		92
88)	m-DICHLOROBENZENE	17.00	146	8270	0.51	PPBV		98
89)	BENZYL CHLORIDE	17.00	91	7113	0.45	PPBV		99
90)	p-DICHLOROBENZENE	17.08	146	7652	0.51	PPBV		98
91)	sec-BUTYLBENZENE	17.11	134	5172	0.62	PPBV	#	90
92)	p-ISOPROPYLTOLUENE	17.30	134	4865	0.61	PPBV		99
93)	o-DICHLOROBENZENE	17.51	146	8103	0.57	PPBV		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:30 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

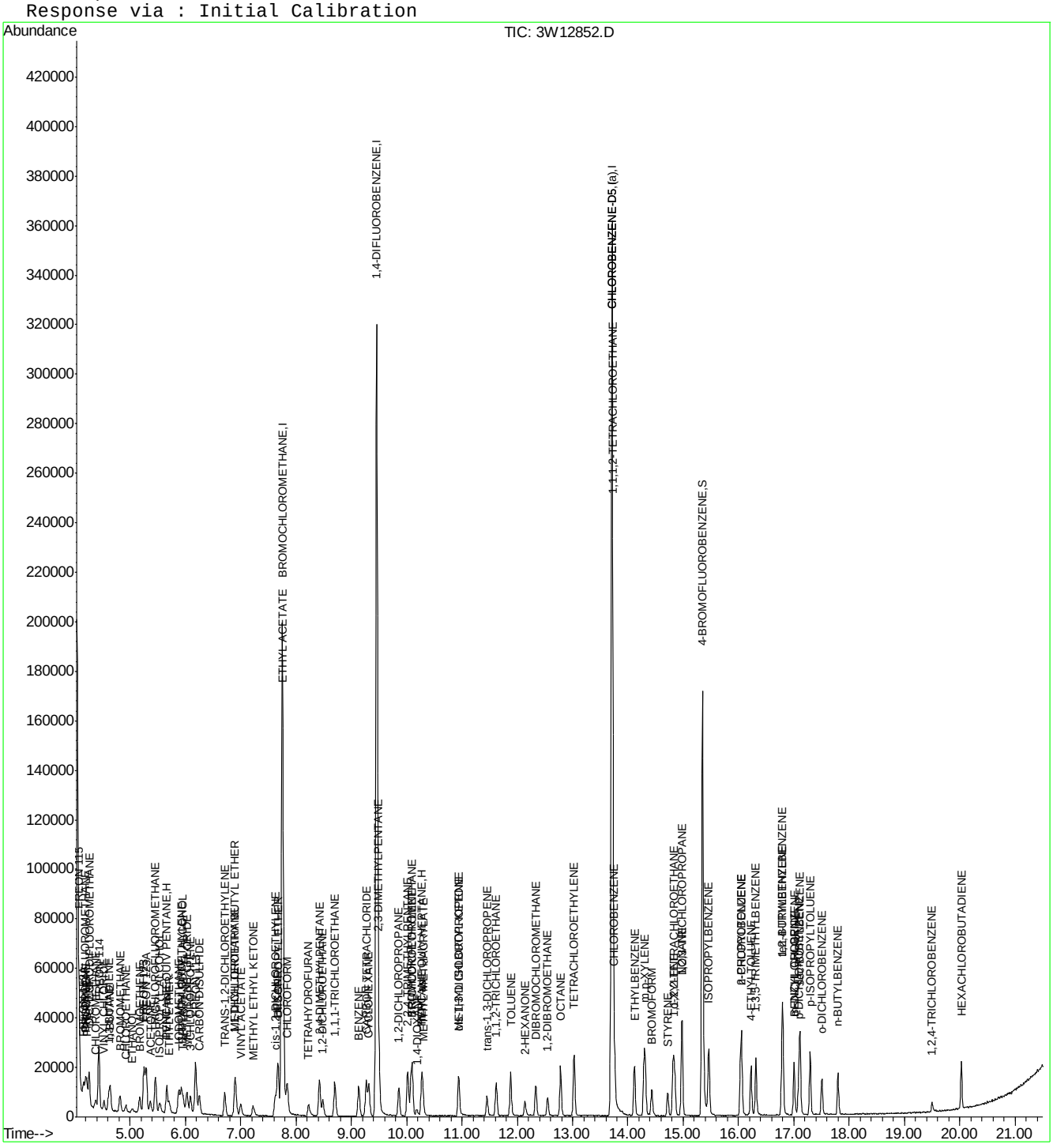
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	3141	0.53	PPBV	94
95)	HEXACHLOROBUTADIENE	20.03	225	4289	0.81	PPBV	98
96)	1,2,4-TRICHLOROBENZENE	19.50	180	1770	0.69	PPBV	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:37 2009 Quant Results File: M3W523.RES

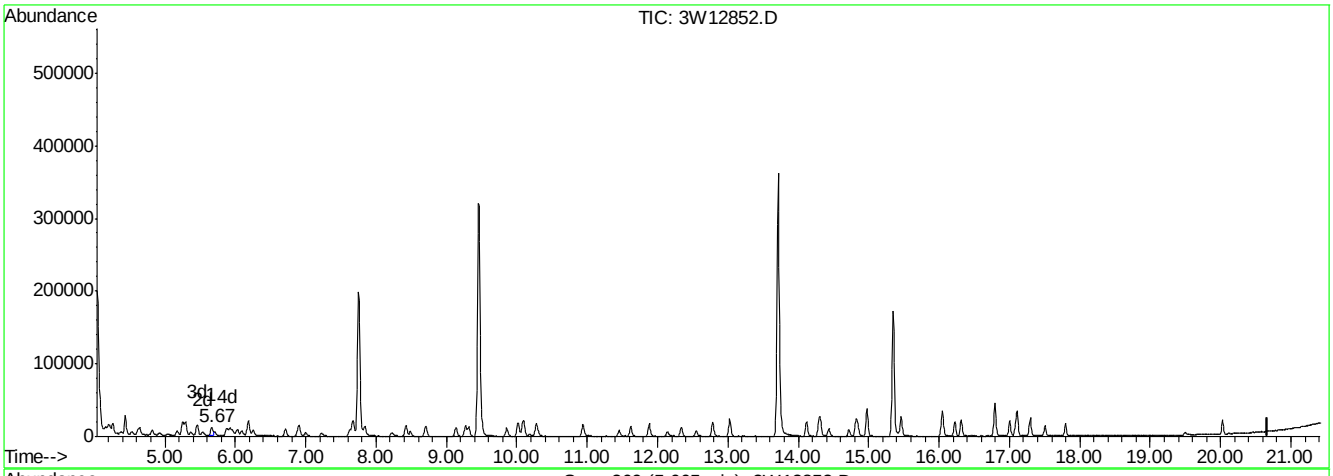
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

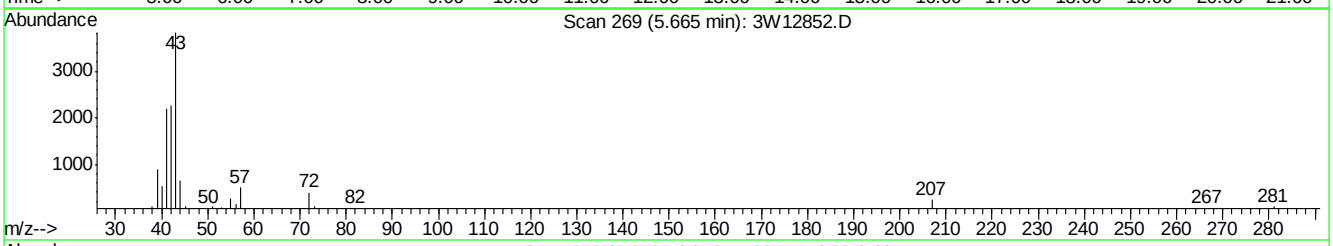


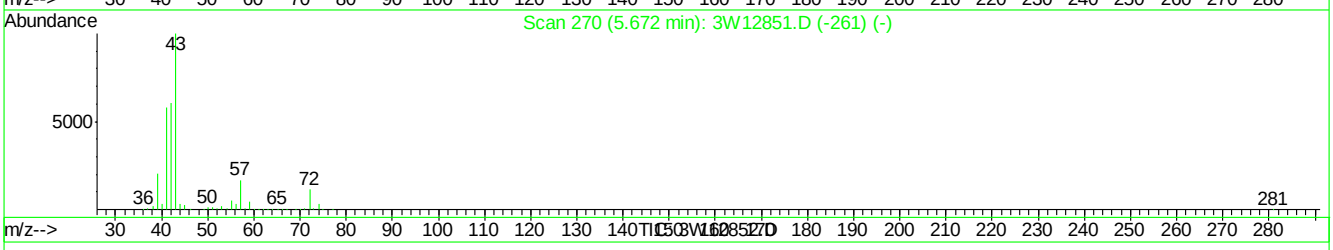
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:37 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 0.39PPBV m

response 25570

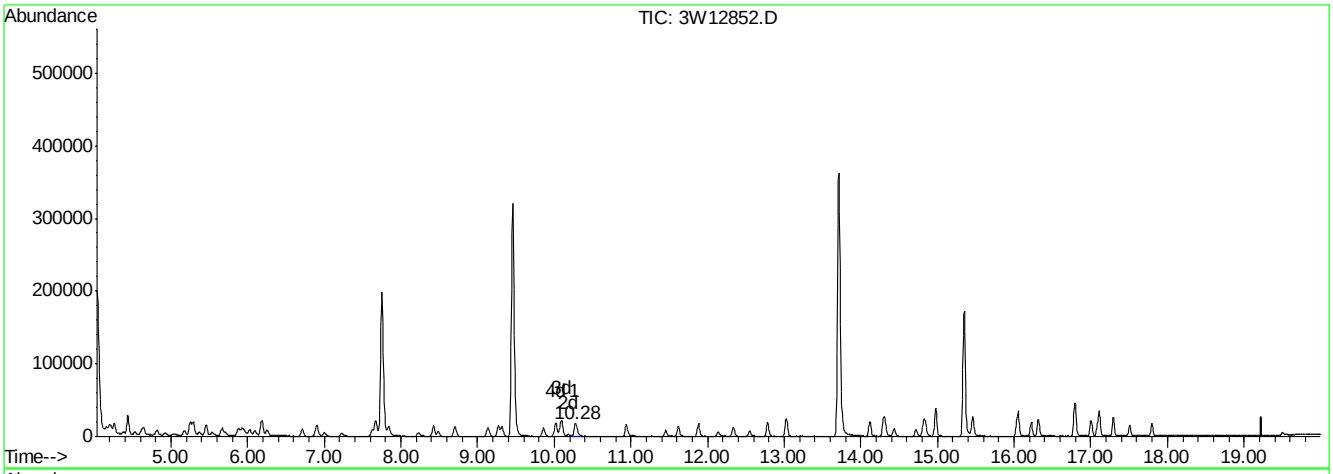
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

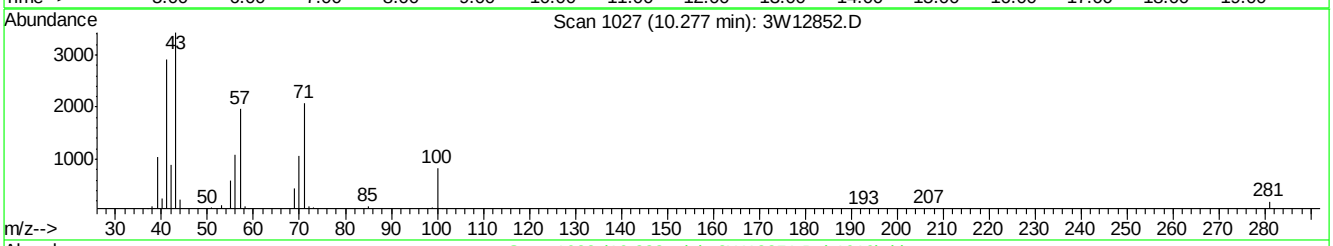
3W12852.D M3W523.M Tue Oct 06 12:25:44 2009 MS3W

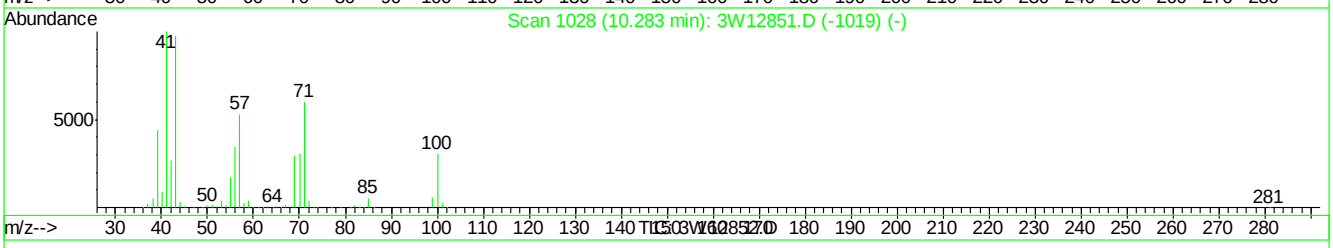
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:37 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.28min 0.46PPBV m

response 50813

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12852.D M3W523.M Tue Oct 06 12:25:46 2009 MS3W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu
10/12/09 11:21

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:33 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	85709	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	366776	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	141020	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	141269	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	69199	4.26	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 85.20%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	4964	0.20	PPBV	99
3) FREON 152A	4.15	65	1448	0.19	PPBV	85
4) CHLORODIFLUOROMETHANE	4.19	67	767	0.20	PPBV	94
5) DICHLORODIFLUOROMETHANE	4.26	85	6655	0.19	PPBV	99
6) PROPANE	4.23	43	871m	0.21	PPBV	
7) PROPYLENE	4.21	41	2510	0.21	PPBV	91
8) FREON 114	4.44	85	7279	0.20	PPBV	97
9) CHLOROMETHANE	4.38	50	2413	0.22	PPBV	97
10) VINYL CHLORIDE	4.53	62	2451	0.20	PPBV	99
11) 1,3-BUTADIENE	4.61	54	1693	0.19	PPBV	91
12) n-BUTANE	4.64	43	4274	0.24	PPBV	93
13) BROMOMETHANE	4.82	94	2356	0.20	PPBV	89
14) CHLOROETHANE	4.92	64	1332	0.21	PPBV	96
15) FREON 123	5.25	83	5290	0.20	PPBV #	76
16) FREON 123A	5.30	117	3261	0.19	PPBV	92
17) TRICHLOROFLUOROMETHANE	5.46	101	6502	0.19	PPBV	99
18) ISOPROPYL ALCOHOL	5.56	45	2895	0.19	PPBV	97
19) ACETONE	5.39	58	836	0.18	PPBV #	79
20) PENTANE	5.67	42	2653	0.24	PPBV	88
21) TVHC as EQUIV PENTANE	5.67	TIC	10857m	0.15	PPBV	
22) ETHYL ETHER	5.73	74	776	0.17	PPBV	95
23) IODOMETHANE	5.88	142	6165	0.18	PPBV	98
24) 1,1-DICHLOROETHYLENE	5.93	96	2269	0.21	PPBV #	86
25) CARBON DISULFIDE	6.26	76	6523	0.21	PPBV	97
26) ETHANOL	5.06	45	1047	0.33	PPBV	85
27) BROMOETHENE	5.17	106	2327	0.20	PPBV	100
28) METHYLENE CHLORIDE	6.03	84	2452	0.26	PPBV	92
29) 3-CHLOROPROPENE	6.10	76	929	0.20	PPBV #	87
30) FREON 113	6.19	151	3853	0.19	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	2189	0.19	PPBV	99
32) TERTIARY BUTYL ALCOHOL	5.98	59	3357	0.16	PPBV	82
33) METHYL TERTIARY BUTYL ETHE	6.92	73	4696	0.17	PPBV	93
34) TETRAHYDROFURAN	8.24	72	553	0.13	PPBV #	72
35) HEXANE	7.67	57	2916	0.19	PPBV	96
36) VINYL ACETATE	7.02	86	207	0.10	PPBV #	1
37) 1,1-DICHLOROETHANE	6.89	63	3799	0.19	PPBV	99
38) METHYL ETHYL KETONE	7.25	72	457	0.11	PPBV #	71
39) cis-1,2-DICHLOROETHYLENE	7.62	96	2134	0.19	PPBV	98
40) DIISOPROPYL ETHER	7.69	45	4349	0.16	PPBV	94
41) ETHYL ACETATE	7.79	61	429	0.17	PPBV #	71

(#) = qualifier out of range (m) = manual integration
3W12854.D M3W523.M Tue Oct 06 12:25:02 2009 MS3W Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:33 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) CHLOROFORM	7.84	83	4529	0.19	PPBV		97
43) 2,4-DIMETHYLPENTANE	8.43	57	3354	0.19	PPBV		98
44) 1,1,1-TRICHLOROETHANE	8.71	97	4774	0.18	PPBV		99
45) CARBON TETRACHLORIDE	9.27	117	4802	0.17	PPBV		95
46) 1,2-DICHLOROETHANE	8.49	62	2738	0.17	PPBV		96
48) BENZENE	9.14	78	5940	0.20	PPBV		96
49) CYCLOHEXANE	9.32	56	3022	0.21	PPBV		85
50) 2,3-DIMETHYLPENTANE	9.50	71	1702	0.27	PPBV	#	1
51) TRICHLOROETHYLENE	10.10	95	2712	0.19	PPBV		97
52) 1,2-DICHLOROPROPANE	9.86	63	2104	0.20	PPBV		90
53) BROMODICHLOROMETHANE	10.09	83	3798	0.16	PPBV		97
54) 2,2,4-TRIMETHYLPENTANE	10.02	57	9029	0.21	PPBV		99
55) 1,4-DIOXANE	10.22	88	1084	0.18	PPBV		86
56) HEPTANE	10.28	43	3462	0.21	PPBV		94
57) TVHC as EQUIV HEPTANE	10.28	TIC	19841m	0.17	PPBV		
58) METHYL METHACRYLATE	10.31	69	897	0.11	PPBV	#	1
59) METHYL ISOBUTYL KETONE	10.96	43	2269	0.13	PPBV		87
60) cis-1,3-DICHLOROPROPENE	10.94	75	2680	0.16	PPBV		95
61) TOLUENE	11.88	92	3573	0.17	PPBV		96
62) trans-1,3-DICHLOROPROPENE	11.46	75	2266	0.14	PPBV		94
63) 1,1,2-TRICHLOROETHANE	11.62	83	1697	0.17	PPBV		97
65) 2-HEXANONE	12.16	43	1932	0.15	PPBV		90
66) TETRACHLOROETHYLENE	13.03	164	3433	0.23	PPBV		98
67) DIBROMOCHLOROMETHANE	12.34	129	3065	0.15	PPBV		99
68) 1,2-DIBROMOETHANE	12.56	107	2477	0.16	PPBV	#	98
69) OCTANE	12.79	43	4138	0.23	PPBV		96
70) 1,1,1,2-TETRACHLOROETHANE	13.73	131	3023	0.21	PPBV		97
71) CHLOROBENZENE	13.76	112	4564	0.20	PPBV		96
72) ETHYLBENZENE	14.12	91	6823	0.19	PPBV		99
73) m,p-XYLENE	14.31	106	5121	0.37	PPBV		90
74) o-XYLENE	14.82	106	2391	0.18	PPBV		97
75) STYRENE	14.72	104	1916	0.10	PPBV		98
76) NONANE	14.98	43	3862	0.22	PPBV		97
77) BROMOFORM	14.44	173	2370	0.13	PPBV		98
79) 1,1,2,2-TETRACHLOROETHANE	14.85	83	3477	0.22	PPBV		98
80) 1,2,3-TRICHLOROPROPANE	14.97	75	2670	0.21	PPBV		91
81) ISOPROPYLBENZENE	15.47	105	7431	0.19	PPBV		98
82) 2-CHLOROTOLUENE	16.04	126	1669	0.18	PPBV		95
83) n-PROPYLBENZENE	16.05	120	1609	0.16	PPBV		99
84) 4-ETHYLTOLUENE	16.23	105	5190	0.16	PPBV		97
85) 1,3,5-TRIMETHYLBENZENE	16.32	105	5145	0.19	PPBV		99
86) tert-BUTYLBENZENE	16.79	134	1406	0.20	PPBV		100
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	4514	0.18	PPBV		91
88) m-DICHLOROBENZENE	17.01	146	2972	0.18	PPBV		99
89) BENZYL CHLORIDE	17.01	91	2663	0.17	PPBV		95
90) p-DICHLOROBENZENE	17.09	146	3154	0.21	PPBV		95
91) sec-BUTYLBENZENE	17.11	134	1556	0.19	PPBV		93
92) p-ISOPROPYLTOLUENE	17.30	134	1402	0.18	PPBV		98
93) o-DICHLOROBENZENE	17.51	146	2898	0.21	PPBV		98

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:33 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

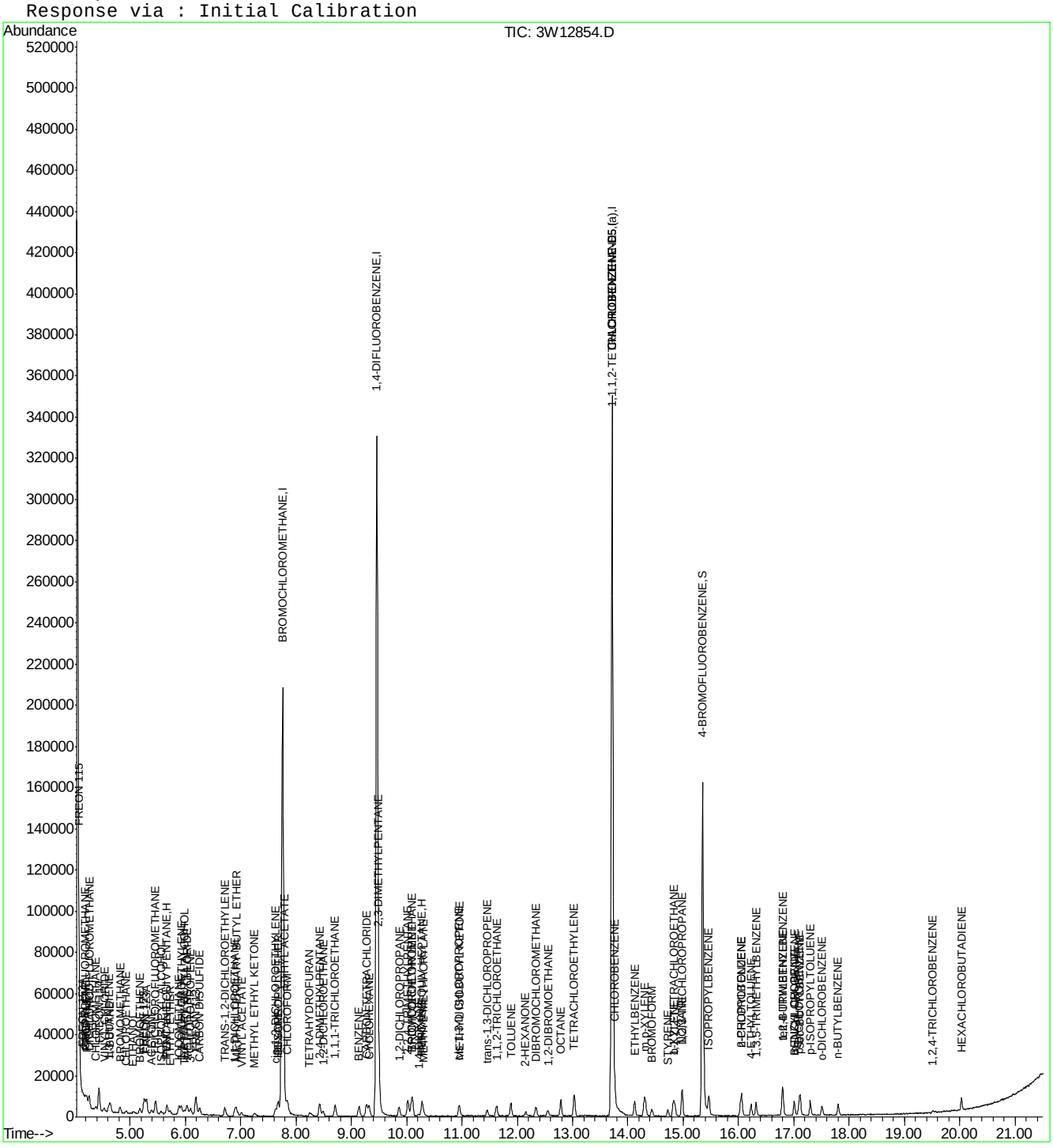
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
94)	n-BUTYLBENZENE	17.80	134	934	0.16	PPBV	#	82
95)	HEXACHLOROBUTADIENE	20.03	225	1461	0.28	PPBV		93
96)	1,2,4-TRICHLOROBENZENE	19.51	180	499	0.20	PPBV		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

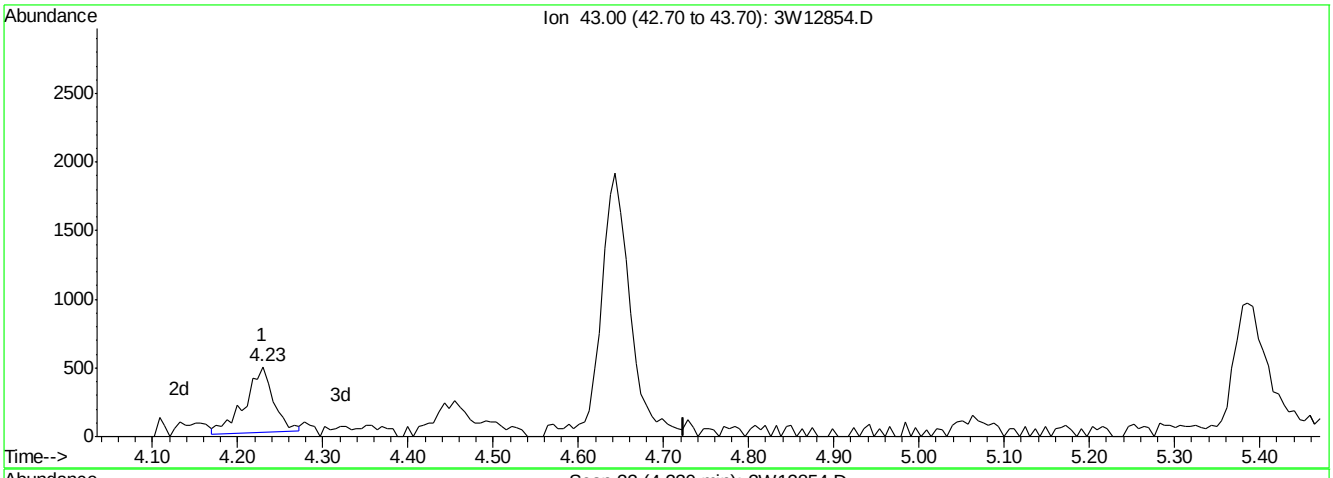


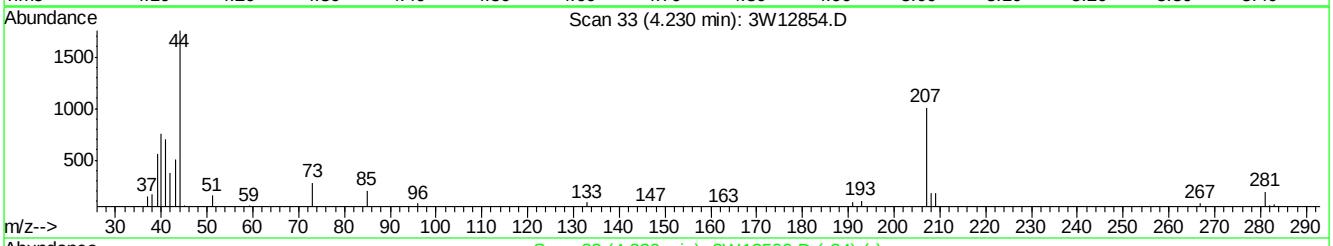
ACCUTEST Laboratories JA28238

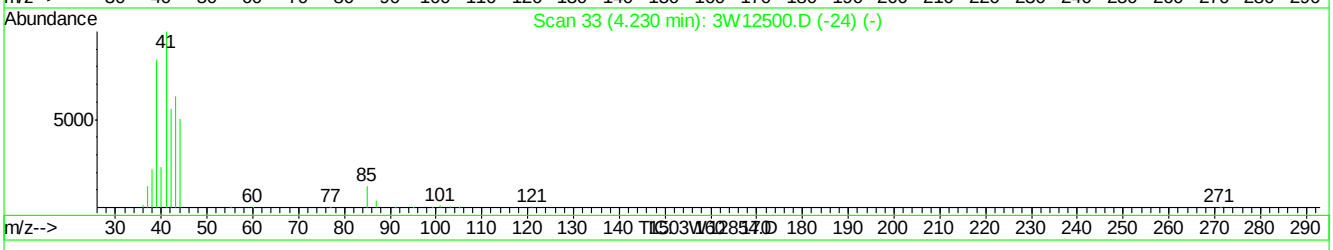
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:35 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Multiple Level Calibration







(6) PROPANE

4.23min 0.27PPBV

response 1129

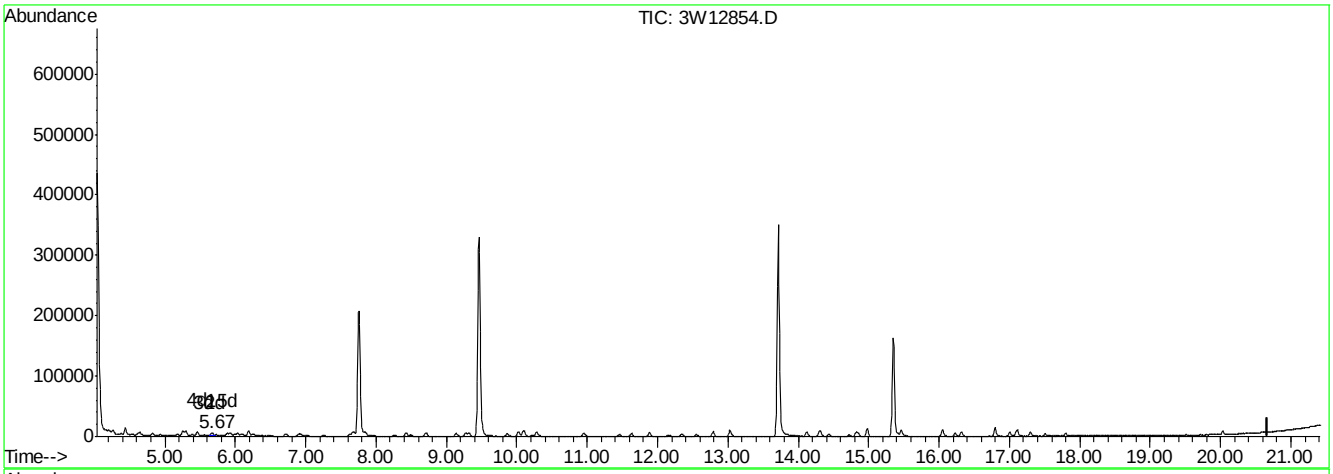
Ion	Exp%	Act%
43.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

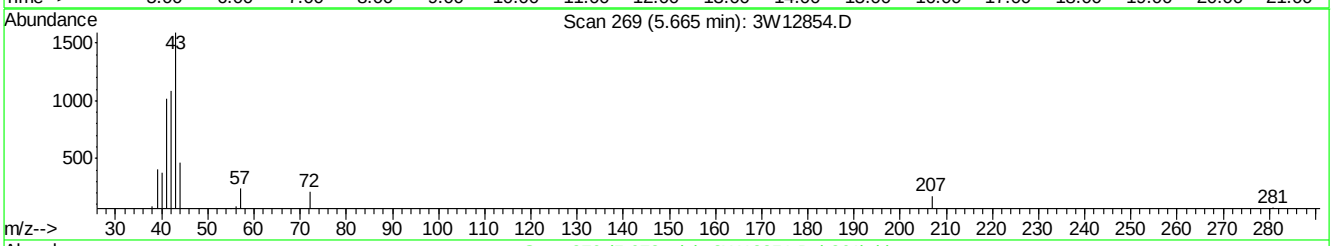
3W12854.D M3W523.M Mon Oct 05 08:38:37 2009 MS3W

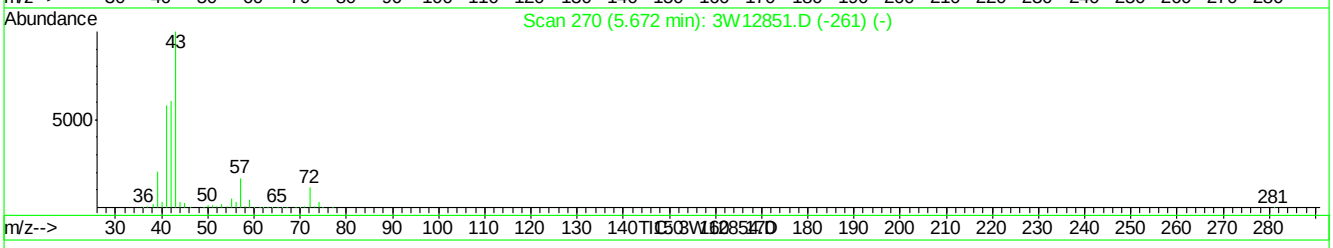
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 0.15PPBV m

response 10857

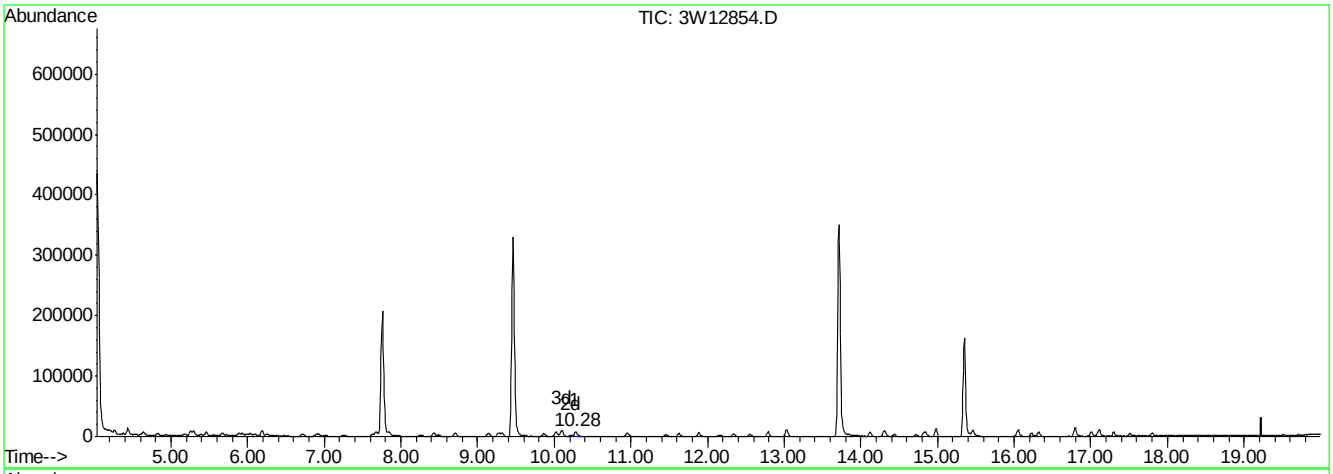
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12854.D M3W523.M Tue Oct 06 12:28:00 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 0.17PPBV m

response 19841

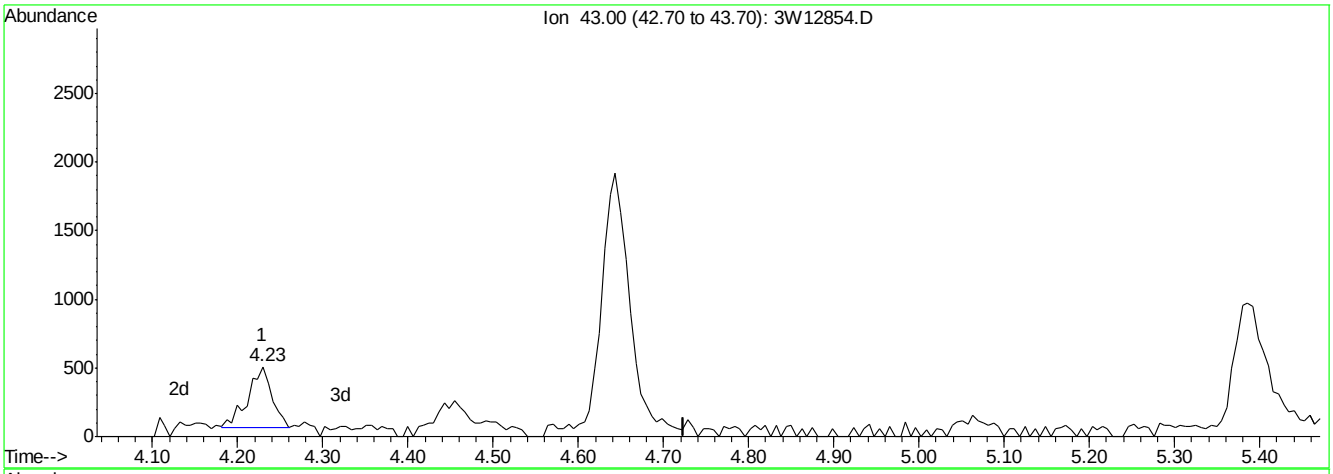
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

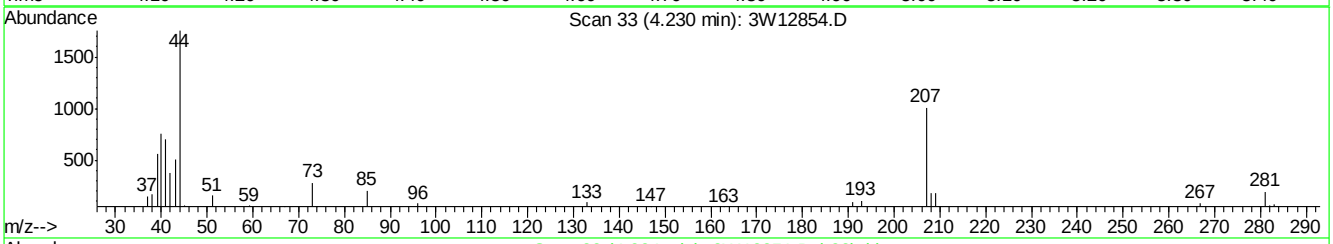
3W12854.D M3W523.M Tue Oct 06 12:28:05 2009 MS3W

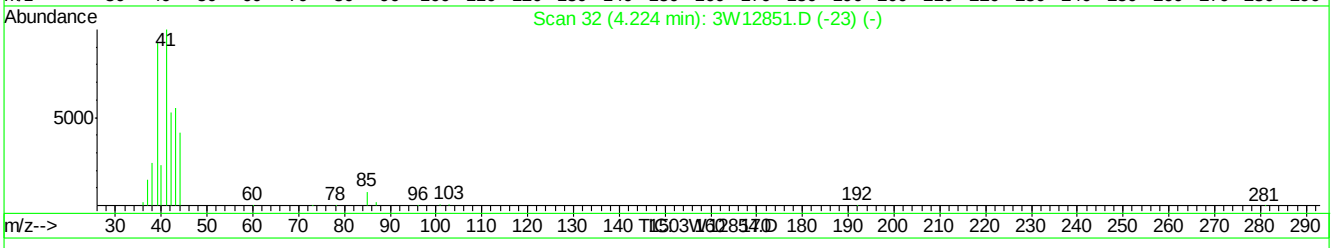
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(6) PROPANE

4.23min 0.21PPBV m

response 871

Ion	Exp%	Act%
43.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12854.D M3W523.M Tue Oct 06 14:34:22 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:36 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	80158	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.47	114	369628	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.72	82	186452	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.72	82	186452	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.36	95	104310	4.86	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 97.20%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	466442	20.17	PPBV	99
3) FREON 152A	4.16	65	150035	20.54	PPBV	100
4) CHLORODIFLUOROMETHANE	4.19	67	70252	20.06	PPBV	99
5) DICHLORODIFLUOROMETHANE	4.26	85	652332	19.93	PPBV	100
6) PROPANE	4.22	43	79206	20.14	PPBV	100
7) PROPYLENE	4.21	41	231736	20.84	PPBV	99
8) FREON 114	4.44	85	687189	20.65	PPBV	100
9) CHLOROMETHANE	4.38	50	213651	21.13	PPBV	98
10) VINYL CHLORIDE	4.53	62	242864	20.91	PPBV	100
11) 1,3-BUTADIENE	4.62	54	174651	21.17	PPBV	99
12) n-BUTANE	4.64	43	348057	20.82	PPBV	100
13) BROMOMETHANE	4.82	94	234597	20.79	PPBV	100
14) CHLOROETHANE	4.93	64	128021	21.35	PPBV	99
15) FREON 123	5.26	83	523980	20.73	PPBV	99
16) FREON 123A	5.30	117	333236	20.73	PPBV	100
17) TRICHLOROFLUOROMETHANE	5.46	101	653131	20.55	PPBV	100
18) ISOPROPYL ALCOHOL	5.53	45	323509	22.68	PPBV	99
19) ACETONE	5.34	58	96268	22.38	PPBV	100
20) PENTANE	5.67	42	221957	21.75	PPBV	100
21) TVHC as EQUIV PENTANE	5.67	TIC	1467294m	21.86	PPBV	
22) ETHYL ETHER	5.70	74	97592	22.22	PPBV	97
23) IODOMETHANE	5.88	142	661859	21.19	PPBV	98
24) 1,1-DICHLOROETHYLENE	5.93	96	209982	21.26	PPBV	99
25) CARBON DISULFIDE	6.26	76	629973	21.30	PPBV	100
26) ETHANOL	5.03	45	66207	22.47	PPBV	98
27) BROMOETHENE	5.18	106	232384	20.96	PPBV	100
28) METHYLENE CHLORIDE	6.04	84	188395	21.39	PPBV	99
29) 3-CHLOROPROPENE	6.10	76	95017	21.55	PPBV	98
30) FREON 113	6.19	151	404533	21.02	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	224669	21.21	PPBV	98
32) TERTIARY BUTYL ALCOHOL	5.95	59	420010	21.58	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	593548	22.37	PPBV	100
34) TETRAHYDROFURAN	8.19	72	95537	23.49	PPBV	99
35) HEXANE	7.67	57	304766	21.30	PPBV	100
36) VINYL ACETATE	7.00	86	45499	22.58	PPBV #	93
37) 1,1-DICHLOROETHANE	6.90	63	393322	21.16	PPBV	100
38) METHYL ETHYL KETONE	7.20	72	92426	23.42	PPBV	95
39) cis-1,2-DICHLOROETHYLENE	7.63	96	225631	21.50	PPBV	99
40) DIISOPROPYL ETHER	7.67	45	580473	22.67	PPBV	100
41) ETHYL ACETATE	7.75	61	56330	24.08	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:36 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.86	83	469986	20.95	PPBV	99
43)	2,4-DIMETHYLPENTANE	8.43	57	352269	21.66	PPBV	100
44)	1,1,1-TRICHLOROETHANE	8.71	97	510368	20.79	PPBV	99
45)	CARBON TETRACHLORIDE	9.28	117	561838	20.96	PPBV	100
46)	1,2-DICHLOROETHANE	8.49	62	324941	21.29	PPBV	100
48)	BENZENE	9.15	78	638119	21.19	PPBV	100
49)	CYCLOHEXANE	9.33	56	314655	21.37	PPBV	99
50)	2,3-DIMETHYLPENTANE	9.50	71	136222	21.30	PPBV	97
51)	TRICHLOROETHYLENE	10.11	95	298302	20.78	PPBV	99
52)	1,2-DICHLOROPROPANE	9.86	63	226807	21.57	PPBV	98
53)	BROMODICHLOROMETHANE	10.09	83	484801	20.26	PPBV	98
54)	2,2,4-TRIMETHYLPENTANE	10.03	57	924146	21.02	PPBV	100
55)	1,4-DIOXANE	10.14	88	130397	21.66	PPBV	97
56)	HEPTANE	10.28	43	349201	20.77	PPBV	99
57)	TVHC as EQUIV HEPTANE	10.28	TIC	2552393m	21.87	PPBV	
58)	METHYL METHACRYLATE	10.29	69	203618	23.72	PPBV	91
59)	METHYL ISOBUTYL KETONE	10.92	43	385202	22.08	PPBV	100
60)	cis-1,3-DICHLOROPROPENE	10.95	75	361838	21.41	PPBV	99
61)	TOLUENE	11.89	92	467569	21.58	PPBV	98
62)	trans-1,3-DICHLOROPROPENE	11.46	75	357111	21.90	PPBV	100
63)	1,1,2-TRICHLOROETHANE	11.63	83	218919	21.56	PPBV	100
65)	2-HEXANONE	12.13	43	365977	21.02	PPBV	100
66)	TETRACHLOROETHYLENE	13.03	164	380441	19.64	PPBV	100
67)	DIBROMOCHLOROMETHANE	12.35	129	529665	20.11	PPBV	100
68)	1,2-DIBROMOETHANE	12.56	107	409596	20.61	PPBV	100
69)	OCTANE	12.79	43	462196	19.63	PPBV	99
70)	1,1,1,2-TETRACHLOROETHANE	13.74	131	381766	20.14	PPBV	99
71)	CHLOROBENZENE	13.76	112	618502	20.38	PPBV	99
72)	ETHYLBENZENE	14.13	91	960158	20.21	PPBV	99
73)	m,p-XYLENE	14.32	106	751178	40.90	PPBV	96
74)	o-XYLENE	14.83	106	359103	20.27	PPBV	99
75)	STYRENE	14.73	104	523184	21.31	PPBV	100
76)	NONANE	14.99	43	439082	19.28	PPBV	98
77)	BROMOFORM	14.44	173	503485	20.57	PPBV	99
79)	1,1,2,2-TETRACHLOROETHANE	14.86	83	421979	20.18	PPBV	100
80)	1,2,3-TRICHLOROPROPANE	14.99	75	338990	20.28	PPBV	100
81)	ISOPROPYLBENZENE	15.47	105	1020975	20.05	PPBV	99
82)	2-CHLOROTOLUENE	16.05	126	245305	20.42	PPBV	100
83)	n-PROPYLBENZENE	16.06	120	273266	20.78	PPBV	99
84)	4-ETHYLTOLUENE	16.23	105	898516	20.64	PPBV	99
85)	1,3,5-TRIMETHYLBENZENE	16.33	105	744809	20.37	PPBV	99
86)	tert-BUTYLBENZENE	16.80	134	197618	20.90	PPBV	96
87)	1,2,4-TRIMETHYLBENZENE	16.81	105	692528	20.69	PPBV	99
88)	m-DICHLOROBENZENE	17.02	146	450678	20.98	PPBV	99
89)	BENZYL CHLORIDE	17.01	91	453723	22.00	PPBV	99
90)	p-DICHLOROBENZENE	17.10	146	420684	21.25	PPBV	99
91)	sec-BUTYLBENZENE	17.12	134	227874	20.90	PPBV	96
92)	p-ISOPROPYLTOLUENE	17.30	134	228060	21.65	PPBV	96
93)	o-DICHLOROBENZENE	17.52	146	384884	20.67	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:36 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

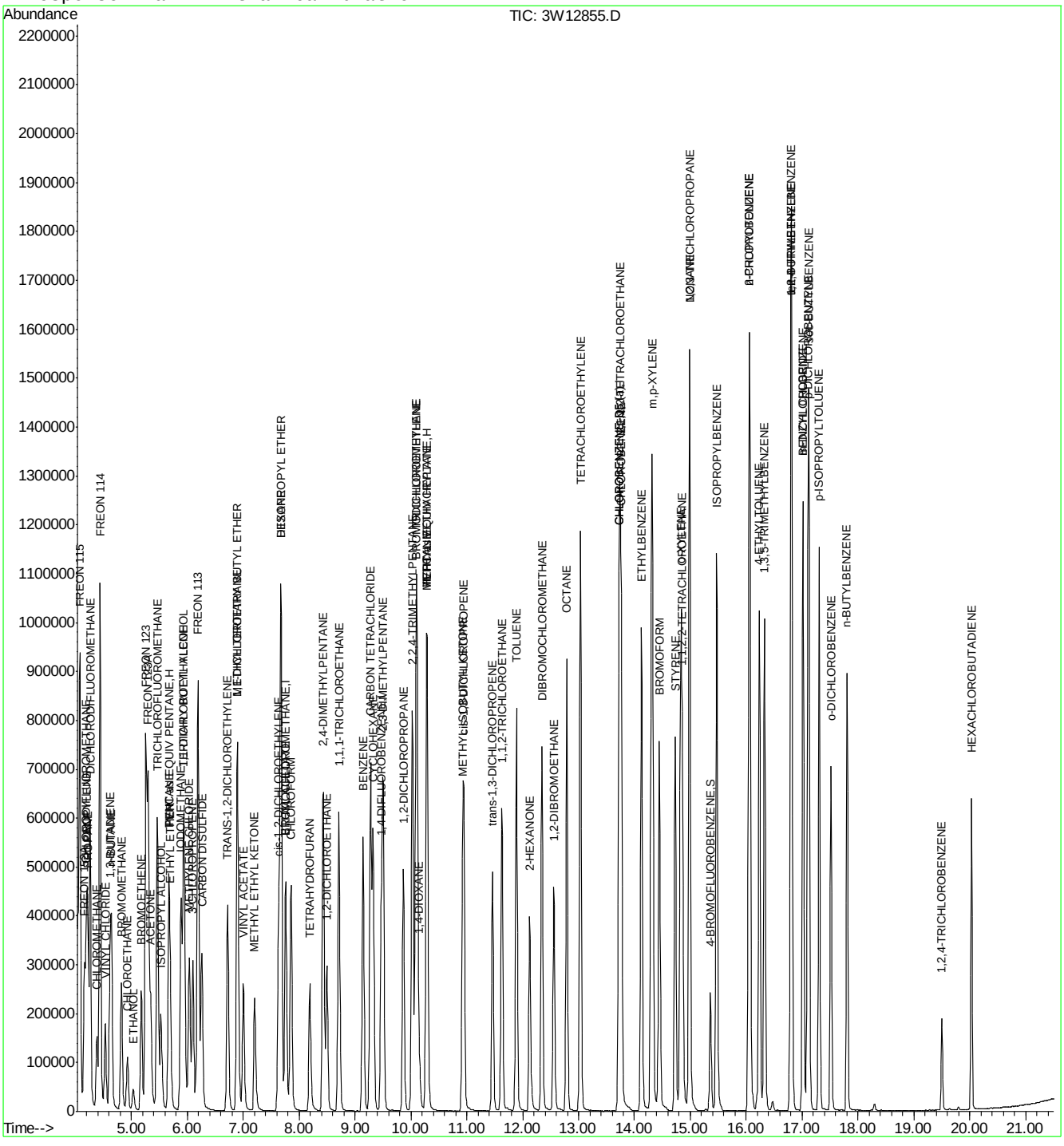
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.81	134	172333	22.16	PPBV	97
95)	HEXACHLOROBUTADIENE	20.03	225	142014	20.32	PPBV	99
96)	1,2,4-TRICHLOROBENZENE	19.50	180	73424	21.76	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:40 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

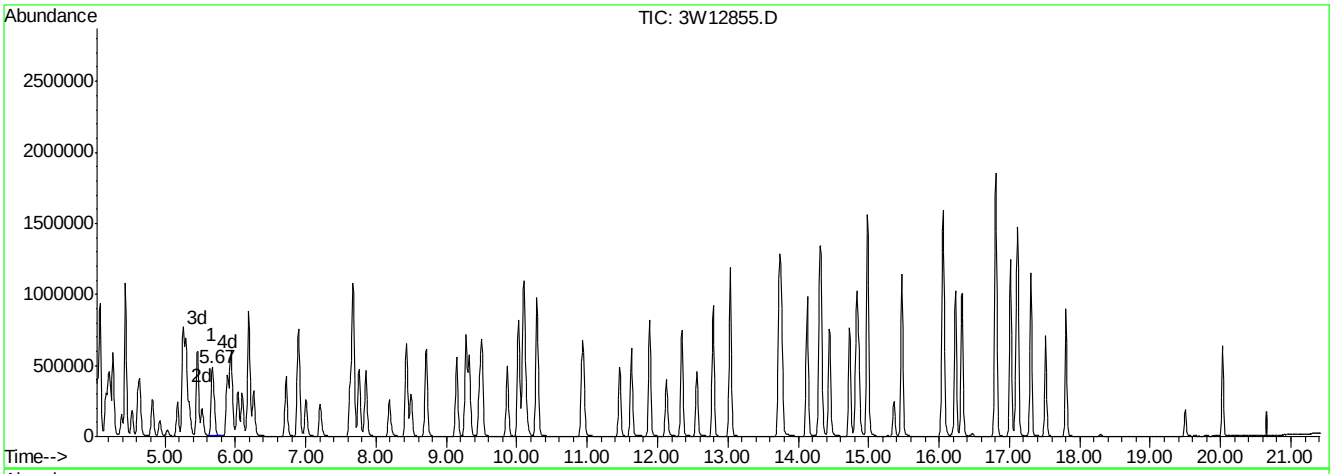


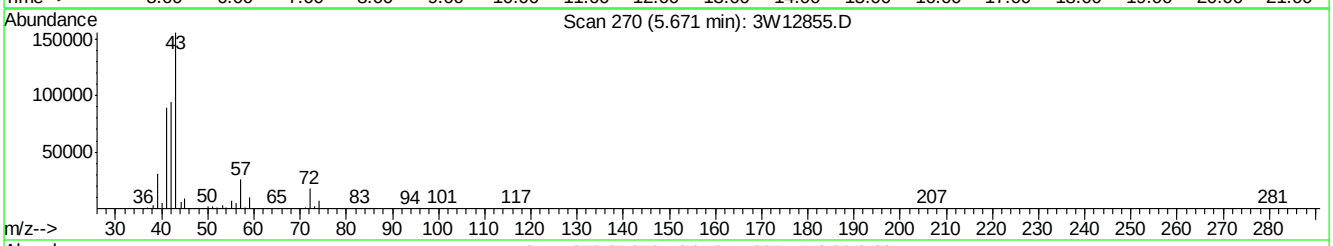
ACCUTEST Laboratories JA28238

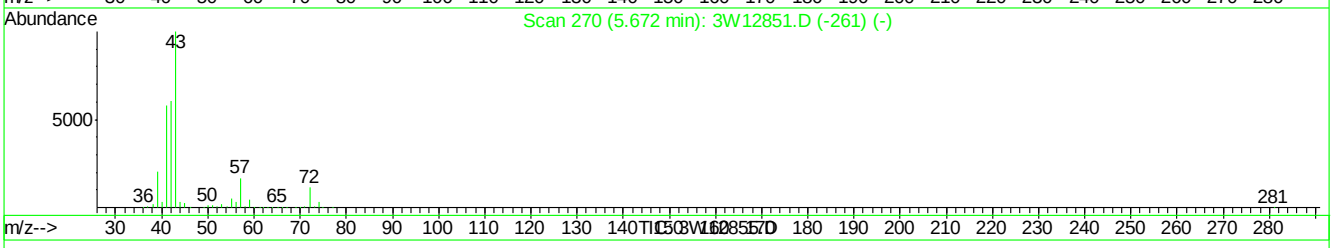
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:40 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 21.86PPBV m

response 1467294

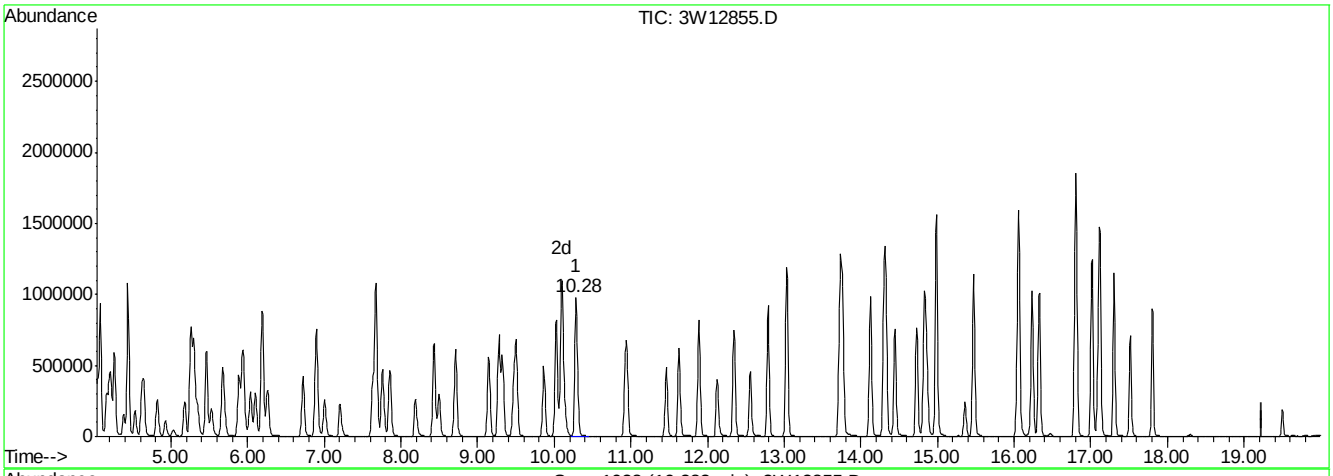
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.02#
0.00	0.00	0.02#
0.00	0.00	0.00

3W12855.D M3W523.M Tue Oct 06 12:28:14 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:40 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 21.87PPBV m

response 2552393

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.01#
0.00	0.00	0.01#
0.00	0.00	0.00

3W12855.D M3W523.M Tue Oct 06 12:28:17 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:38 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	91268	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	403912	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	172529	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	172626	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	97839	4.92	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 98.40%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	131400	4.99	PPBV	98
3) FREON 152A	4.16	65	41297	4.97	PPBV	97
4) CHLORODIFLUOROMETHANE	4.19	67	18575	4.66	PPBV	98
5) DICHLORODIFLUOROMETHANE	4.26	85	179874	4.83	PPBV	100
6) PROPANE	4.22	43	22866	5.11	PPBV	100
7) PROPYLENE	4.21	41	65785	5.19	PPBV	98
8) FREON 114	4.44	85	187764	4.95	PPBV	100
9) CHLOROMETHANE	4.38	50	59388	5.16	PPBV	99
10) VINYL CHLORIDE	4.53	62	68021	5.14	PPBV	100
11) 1,3-BUTADIENE	4.62	54	48177	5.13	PPBV	97
12) n-BUTANE	4.64	43	100279	5.27	PPBV	100
13) BROMOMETHANE	4.82	94	65541	5.10	PPBV	98
14) CHLOROETHANE	4.92	64	34240	5.01	PPBV	98
15) FREON 123	5.25	83	143346	4.98	PPBV	99
16) FREON 123A	5.29	117	89583	4.89	PPBV	99
17) TRICHLOROFLUOROMETHANE	5.46	101	172850	4.78	PPBV	100
18) ISOPROPYL ALCOHOL	5.52	45	74688	4.60	PPBV	98
19) ACETONE	5.35	58	22658	4.63	PPBV #	89
20) PENTANE	5.67	42	60783	5.23	PPBV	98
21) TVHC as EQUIV PENTANE	5.67	TIC	383739m	5.02	PPBV	
22) ETHYL ETHER	5.70	74	24352	4.87	PPBV	100
23) IODOMETHANE	5.88	142	181571	5.11	PPBV	95
24) 1,1-DICHLOROETHYLENE	5.93	96	58439	5.20	PPBV	96
25) CARBON DISULFIDE	6.26	76	181200	5.38	PPBV	99
26) ETHANOL	5.03	45	15746	4.69	PPBV	99
27) BROMOETHENE	5.18	106	65531	5.19	PPBV	99
28) METHYLENE CHLORIDE	6.03	84	52383	5.22	PPBV	96
29) 3-CHLOROPROPENE	6.10	76	25984	5.18	PPBV	93
30) FREON 113	6.19	151	109301	4.99	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	62800	5.21	PPBV	100
32) TERTIARY BUTYL ALCOHOL	5.94	59	102707	4.64	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	138398	4.58	PPBV	100
34) TETRAHYDROFURAN	8.20	72	21290	4.60	PPBV	100
35) HEXANE	7.67	57	86487	5.31	PPBV	95
36) VINYL ACETATE	7.00	86	10846	4.73	PPBV #	95
37) 1,1-DICHLOROETHANE	6.89	63	108757	5.14	PPBV	100
38) METHYL ETHYL KETONE	7.20	72	20200	4.50	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	7.63	96	60941	5.10	PPBV	99
40) DIISOPROPYL ETHER	7.67	45	138557	4.75	PPBV	100
41) ETHYL ACETATE	7.75	61	11755	4.41	PPBV	96

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:38 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.85	83	125056	4.90	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.43	57	95285	5.15	PPBV		100
44)	1,1,1-TRICHLOROETHANE	8.71	97	132587	4.74	PPBV		99
45)	CARBON TETRACHLORIDE	9.27	117	140397	4.60	PPBV		100
46)	1,2-DICHLOROETHANE	8.49	62	80423	4.63	PPBV		99
48)	BENZENE	9.14	78	170755	5.19	PPBV		100
49)	CYCLOHEXANE	9.32	56	84775	5.27	PPBV		98
50)	2,3-DIMETHYLPENTANE	9.50	71	36710	5.25	PPBV		96
51)	TRICHLOROETHYLENE	10.11	95	77699	4.95	PPBV		99
52)	1,2-DICHLOROPROPANE	9.86	63	58282	5.07	PPBV		96
53)	BROMODICHLOROMETHANE	10.08	83	122944	4.70	PPBV		100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	252263	5.25	PPBV		100
55)	1,4-DIOXANE	10.15	88	32139	4.89	PPBV		96
56)	HEPTANE	10.28	43	95584	5.20	PPBV		100
57)	TVHC as EQUIV HEPTANE	10.28	TIC	611132m	4.79	PPBV		
58)	METHYL METHACRYLATE	10.29	69	40030	4.27	PPBV	#	89
59)	METHYL ISOBUTYL KETONE	10.92	43	84481	4.43	PPBV		100
60)	cis-1,3-DICHLOROPROPENE	10.95	75	86814	4.70	PPBV		97
61)	TOLUENE	11.88	92	114563	4.84	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.46	75	77780	4.37	PPBV		99
63)	1,1,2-TRICHLOROETHANE	11.62	83	53606	4.83	PPBV		99
65)	2-HEXANONE	12.12	43	77011	4.78	PPBV		100
66)	TETRACHLOROETHYLENE	13.03	164	93894	5.24	PPBV		100
67)	DIBROMOCHLOROMETHANE	12.34	129	117955	4.84	PPBV		100
68)	1,2-DIBROMOETHANE	12.55	107	89880	4.89	PPBV		99
69)	OCTANE	12.78	43	120949	5.55	PPBV		99
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	87725	5.00	PPBV		99
71)	CHLOROBENZENE	13.76	112	143887	5.12	PPBV		99
72)	ETHYLBENZENE	14.12	91	220148	5.01	PPBV		99
73)	m,p-XYLENE	14.30	106	167616	9.86	PPBV		100
74)	o-XYLENE	14.82	106	80991	4.94	PPBV		100
75)	STYRENE	14.72	104	102957	4.53	PPBV		99
76)	NONANE	14.98	43	112107	5.32	PPBV		99
77)	BROMOFORM	14.44	173	100576	4.44	PPBV		100
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	94266	4.87	PPBV		100
80)	1,2,3-TRICHLOROPROPANE	14.97	75	74191	4.80	PPBV		97
81)	ISOPROPYLBENZENE	15.47	105	229307	4.87	PPBV		100
82)	2-CHLOROTOLUENE	16.04	126	53635	4.82	PPBV		100
83)	n-PROPYLBENZENE	16.06	120	57222	4.70	PPBV		99
84)	4-ETHYLTOLUENE	16.23	105	185573	4.61	PPBV		99
85)	1,3,5-TRIMETHYLBENZENE	16.32	105	156218	4.62	PPBV		100
86)	tert-BUTYLBENZENE	16.79	134	40172	4.59	PPBV		99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	139358	4.50	PPBV		99
88)	m-DICHLOROBENZENE	17.01	146	87567	4.40	PPBV		100
89)	BENZYL CHLORIDE	17.01	91	76569	4.01	PPBV		100
90)	p-DICHLOROBENZENE	17.09	146	77473	4.23	PPBV		99
91)	sec-BUTYLBENZENE	17.11	134	45965	4.56	PPBV		96
92)	p-ISOPROPYLTOLUENE	17.30	134	42232	4.33	PPBV		99
93)	o-DICHLOROBENZENE	17.51	146	77689	4.51	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:38 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

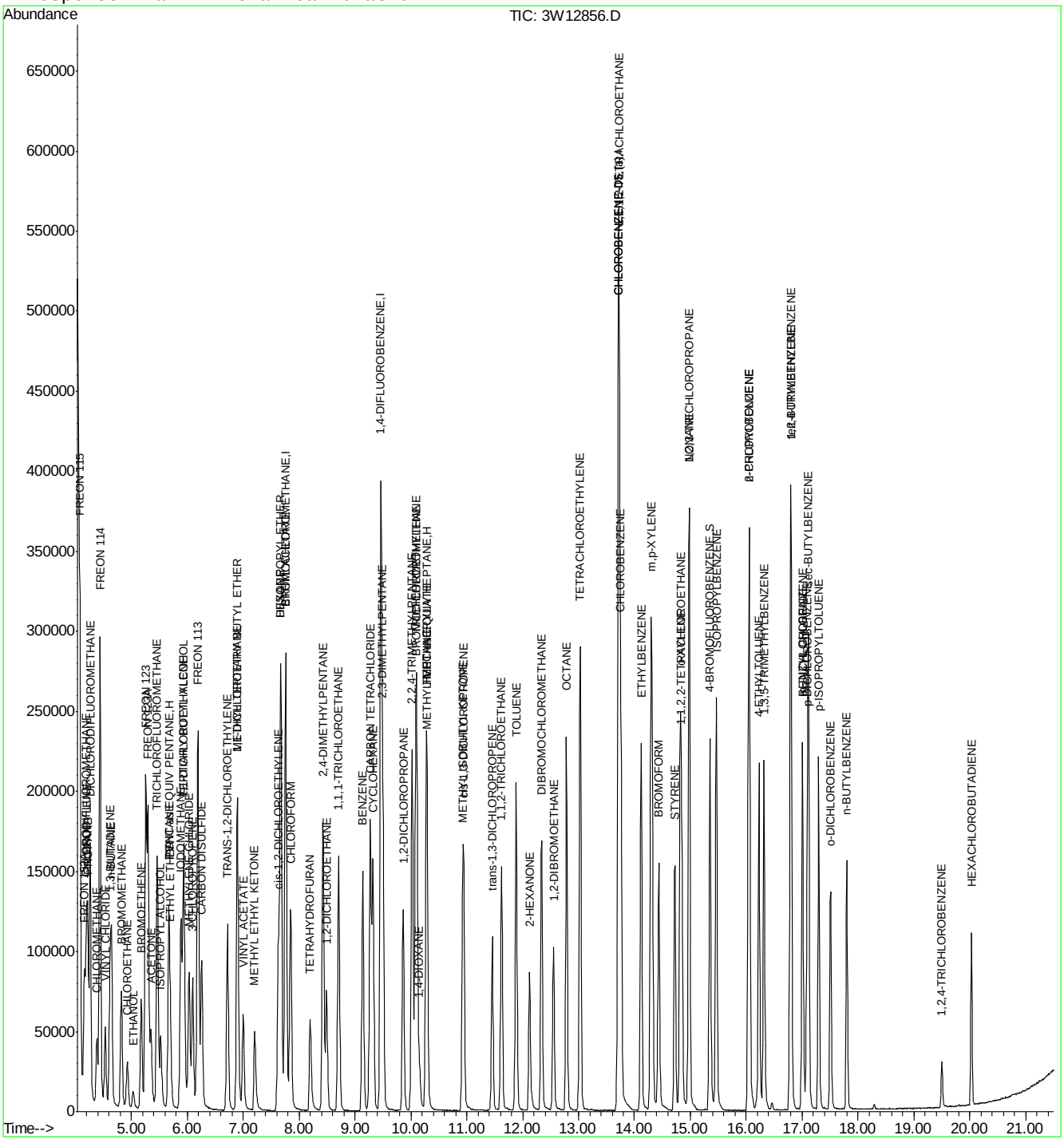
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	29307	4.07	PPBV	95
95)	HEXACHLOROBUTADIENE	20.03	225	24098	3.73	PPBV	99
96)	1,2,4-TRICHLOROBENZENE	19.50	180	12324	3.95	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:41 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

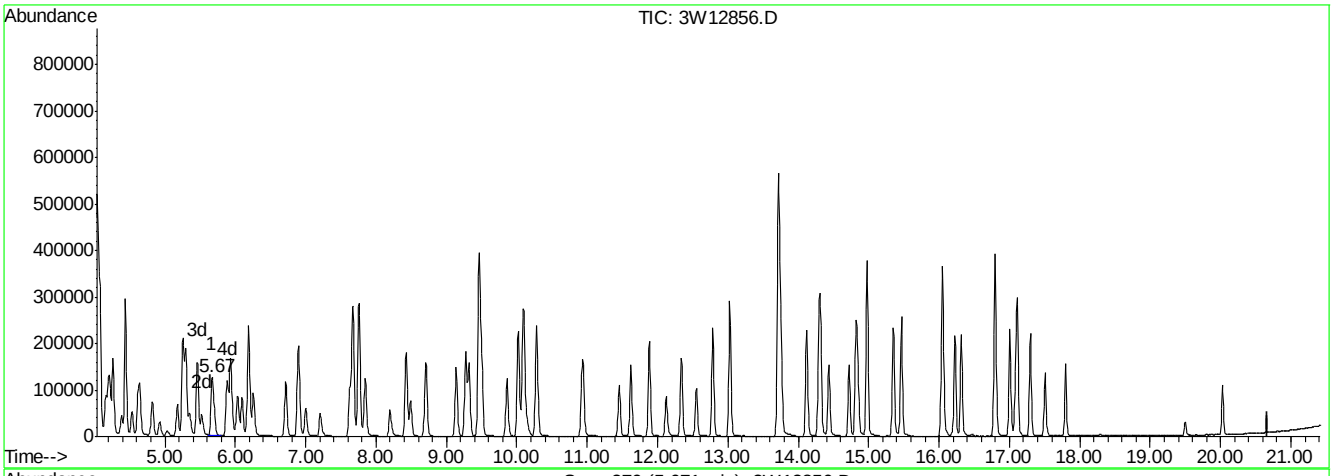


ACCUTEST Laboratories JA28238

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:41 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(21) TVHC as EQUIV PENTANE (H)

5.67min 5.02PPBV m

response 383739

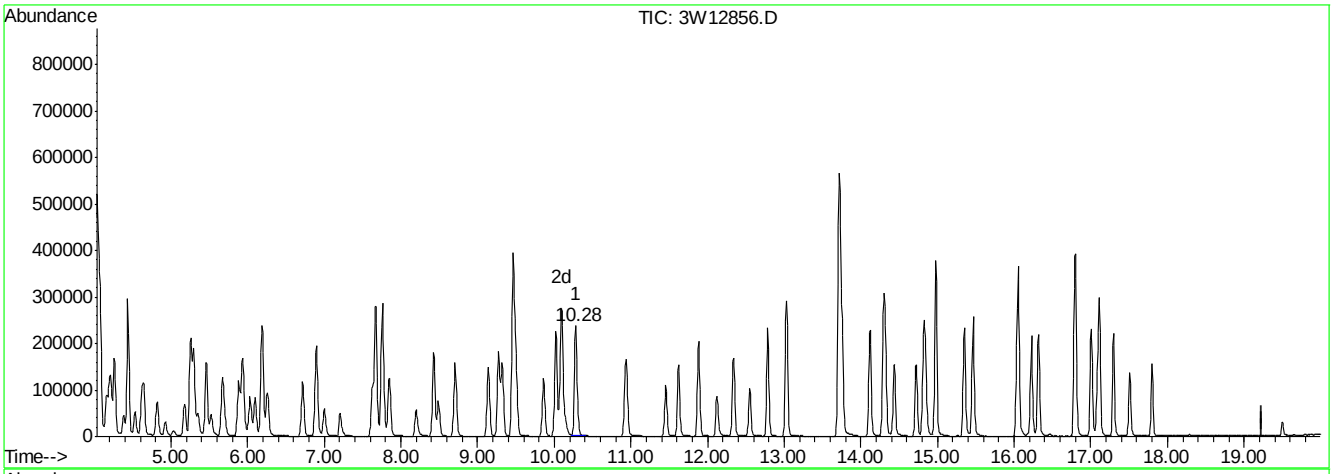
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12856.D M3W523.M Tue Oct 06 12:28:27 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:41 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 4.79PPBV m

response 611132

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12856.D M3W523.M Tue Oct 06 12:28:30 2009 MS3W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 10/12/09 11:21

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:40 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	85786	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	379583	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	146326	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	146326	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	73285	4.35	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 87.00%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	2444	0.10	PPBV	97
3) FREON 152A	4.16	65	800	0.10	PPBV	75
4) CHLORODIFLUOROMETHANE	4.19	67	405	0.11	PPBV #	39
5) DICHLORODIFLUOROMETHANE	4.26	85	3325	0.09	PPBV	98
7) PROPYLENE	4.21	41	1297	0.11	PPBV #	81
8) FREON 114	4.44	85	3448	0.10	PPBV	98
9) CHLOROMETHANE	4.39	50	1315	0.12	PPBV	89
10) VINYL CHLORIDE	4.53	62	1186	0.10	PPBV #	87
11) 1,3-BUTADIENE	4.61	54	827	0.09	PPBV #	66
13) BROMOMETHANE	4.82	94	1226	0.10	PPBV	87
14) CHLOROETHANE	4.92	64	582	0.09	PPBV	99
15) FREON 123	5.25	83	2639	0.10	PPBV #	73
16) FREON 123A	5.28	117	1715	0.10	PPBV	96
17) TRICHLOROFLUOROMETHANE	5.45	101	3326	0.10	PPBV	99
18) ISOPROPYL ALCOHOL	5.56	45	1651	0.11	PPBV	82
19) ACETONE	5.38	58	457	0.10	PPBV #	49
20) PENTANE	5.67	42	1081	0.10	PPBV	89
21) TVHC as EQUIV PENTANE	5.67	TIC	5469m	0.08	PPBV	
22) ETHYL ETHER	5.72	74	454	0.10	PPBV	98
23) IODOMETHANE	5.88	142	3242	0.10	PPBV	95
24) 1,1-DICHLOROETHYLENE	5.92	96	1185	0.11	PPBV #	84
25) CARBON DISULFIDE	6.26	76	3495	0.11	PPBV	88
27) BROMOETHENE	5.17	106	1159	0.10	PPBV	98
29) 3-CHLOROPROPENE	6.10	76	423	0.09	PPBV #	82
30) FREON 113	6.18	151	1970	0.10	PPBV	96
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	1169	0.10	PPBV	92
32) TERTIARY BUTYL ALCOHOL	5.98	59	1696	0.08	PPBV	87
33) METHYL TERTIARY BUTYL ETHE	6.92	73	2731	0.10	PPBV	87
34) TETRAHYDROFURAN	8.26	72	300	0.07	PPBV #	39
35) HEXANE	7.67	57	1520	0.10	PPBV	87
36) VINYL ACETATE	7.02	86	141	0.07	PPBV #	12
37) 1,1-DICHLOROETHANE	6.89	63	1968	0.10	PPBV	93
39) cis-1,2-DICHLOROETHYLENE	7.63	96	1087	0.10	PPBV	96
40) DIISOPROPYL ETHER	7.69	45	2523	0.09	PPBV	83
42) CHLOROFORM	7.84	83	2165	0.09	PPBV	90
43) 2,4-DIMETHYLPENTANE	8.43	57	1749	0.10	PPBV	99
44) 1,1,1-TRICHLOROETHANE	8.71	97	2275	0.09	PPBV	98
45) CARBON TETRACHLORIDE	9.27	117	2278	0.08	PPBV	98
46) 1,2-DICHLOROETHANE	8.49	62	1427	0.09	PPBV #	96
48) BENZENE	9.13	78	3069	0.10	PPBV	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:40 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

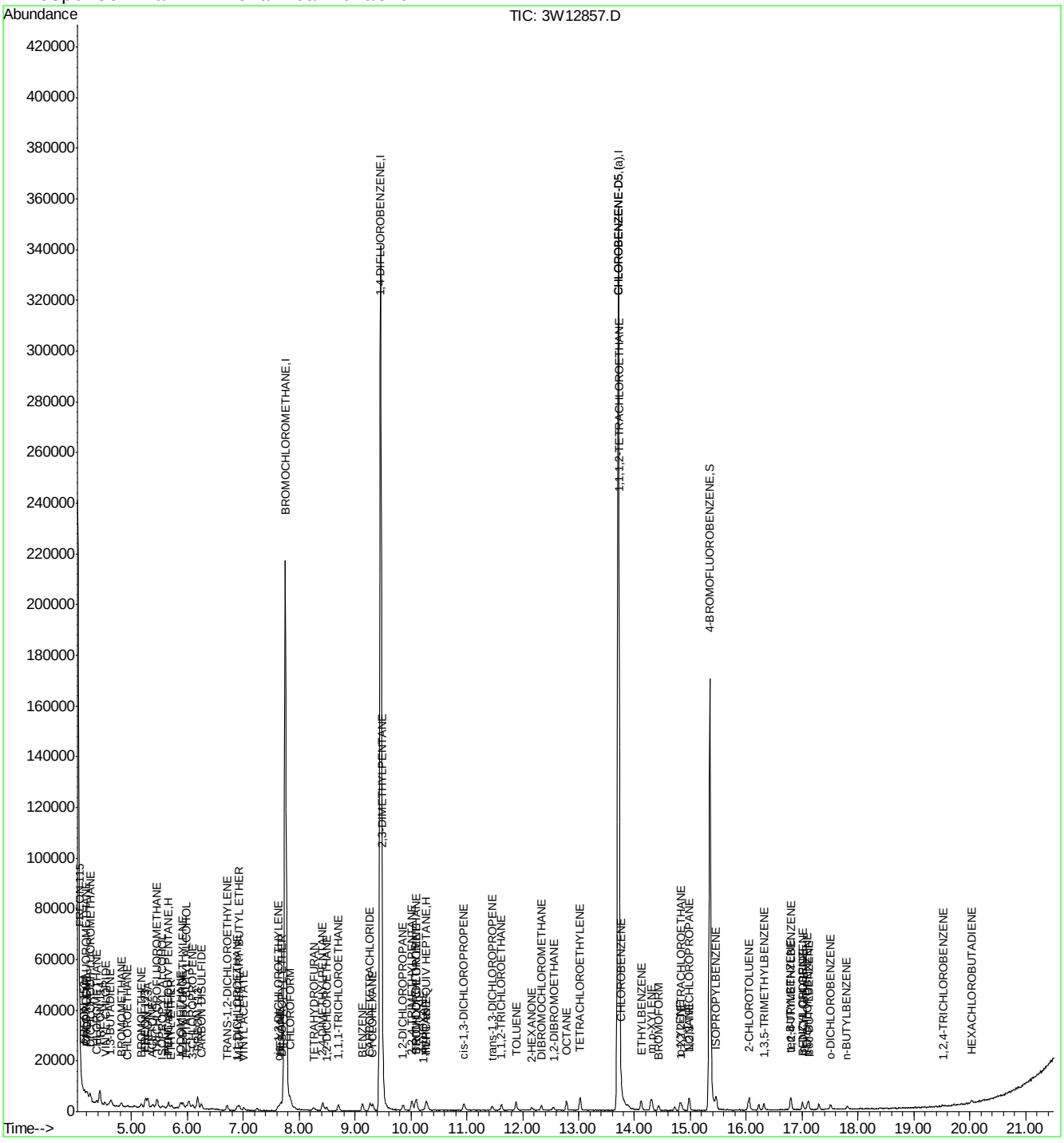
	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	CYCLOHEXANE	9.32	56	1525	0.10 PPBV #	79
50)	2,3-DIMETHYLPENTANE	9.49	71	691	0.11 PPBV #	1
51)	TRICHLOROETHYLENE	10.09	95	1419	0.10 PPBV	96
52)	1,2-DICHLOROPROPANE	9.86	63	1152	0.11 PPBV	87
53)	BROMODICHLOROMETHANE	10.08	83	1916	0.08 PPBV	99
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	4428	0.10 PPBV	97
55)	1,4-DIOXANE	10.23	88	577m	0.09 PPBV	
56)	HEPTANE	10.27	43	2035	0.12 PPBV	86
57)	TVHC as EQUIV HEPTANE	10.28	TIC	11901m	0.10 PPBV	
60)	cis-1,3-DICHLOROPROPENE	10.94	75	1424	0.08 PPBV	94
61)	TOLUENE	11.88	92	1857	0.08 PPBV	97
62)	trans-1,3-DICHLOROPROPENE	11.46	75	1277	0.08 PPBV	93
63)	1,1,2-TRICHLOROETHANE	11.63	83	823	0.08 PPBV	97
65)	2-HEXANONE	12.15	43	1004	0.07 PPBV #	82
66)	TETRACHLOROETHYLENE	13.03	164	1619	0.11 PPBV	97
67)	DIBROMOCHLOROMETHANE	12.34	129	1463	0.07 PPBV	97
68)	1,2-DIBROMOETHANE	12.56	107	1287	0.08 PPBV #	99
69)	OCTANE	12.79	43	1956	0.11 PPBV	91
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	1332	0.09 PPBV	100
71)	CHLOROBENZENE	13.76	112	2418	0.10 PPBV	96
72)	ETHYLBENZENE	14.13	91	3501	0.09 PPBV	99
73)	m,p-XYLENE	14.30	106	2546	0.18 PPBV	89
74)	o-XYLENE	14.82	106	1160	0.08 PPBV	96
76)	NONANE	14.97	43	1554	0.09 PPBV #	88
77)	BROMOFORM	14.43	173	1279	0.07 PPBV #	89
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	1186	0.07 PPBV #	93
80)	1,2,3-TRICHLOROPROPANE	14.97	75	1146	0.09 PPBV	94
81)	ISOPROPYLBENZENE	15.46	105	3401	0.09 PPBV	97
82)	2-CHLOROTOLUENE	16.04	126	656	0.07 PPBV #	42
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	1962	0.07 PPBV	99
86)	tert-BUTYLBENZENE	16.79	134	476	0.06 PPBV #	87
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	1643	0.06 PPBV	92
88)	m-DICHLOROBENZENE	17.01	146	1221	0.07 PPBV	93
89)	BENZYL CHLORIDE	17.00	91	1252	0.08 PPBV #	83
90)	p-DICHLOROBENZENE	17.09	146	1219	0.08 PPBV	91
91)	sec-BUTYLBENZENE	17.11	134	527	0.06 PPBV	99
93)	o-DICHLOROBENZENE	17.51	146	1137	0.08 PPBV	92
94)	n-BUTYLBENZENE	17.80	134	239	0.04 PPBV #	16
95)	HEXACHLOROBUTADIENE	20.03	225	353	0.06 PPBV #	83
96)	1,2,4-TRICHLOROBENZENE	19.52	180	266	0.10 PPBV #	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:45 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

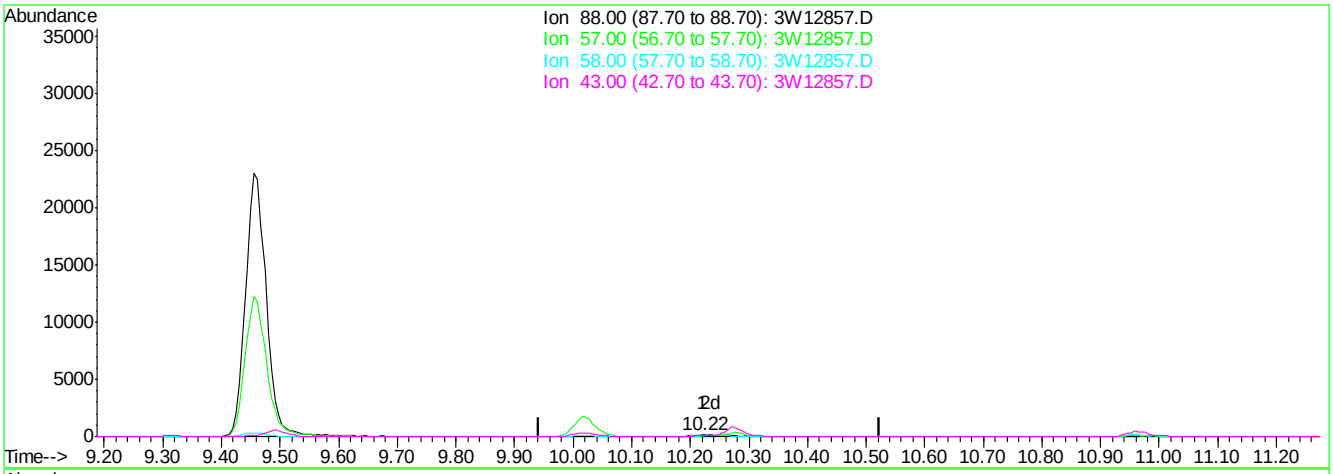


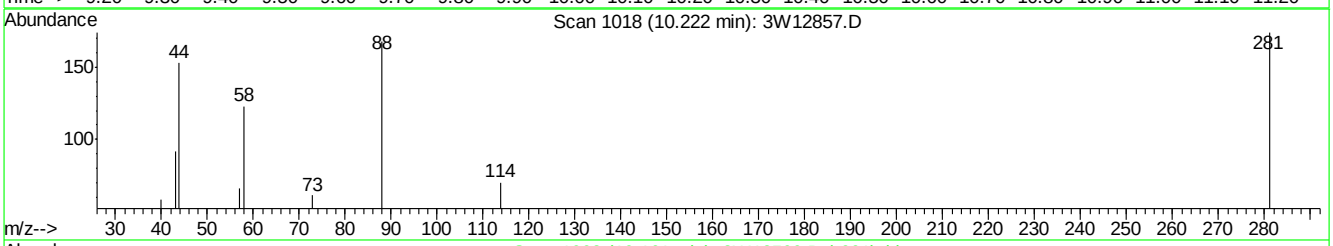
ACCUTEST Laboratories JA28238

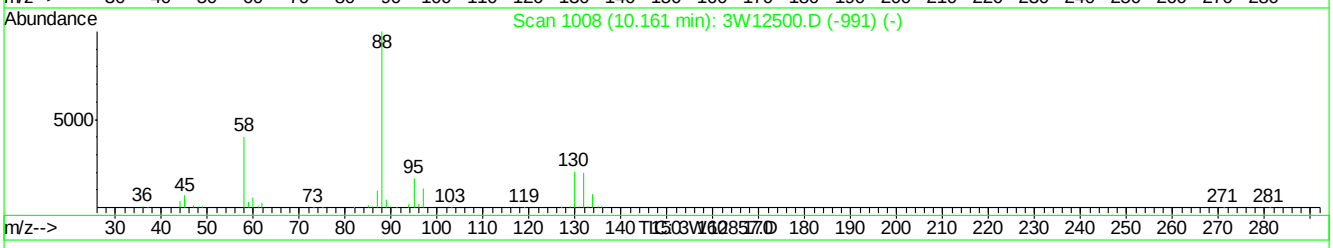
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:42 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Multiple Level Calibration







(55) 1,4-DIOXANE

10.22min 0.04PPBV

response 253

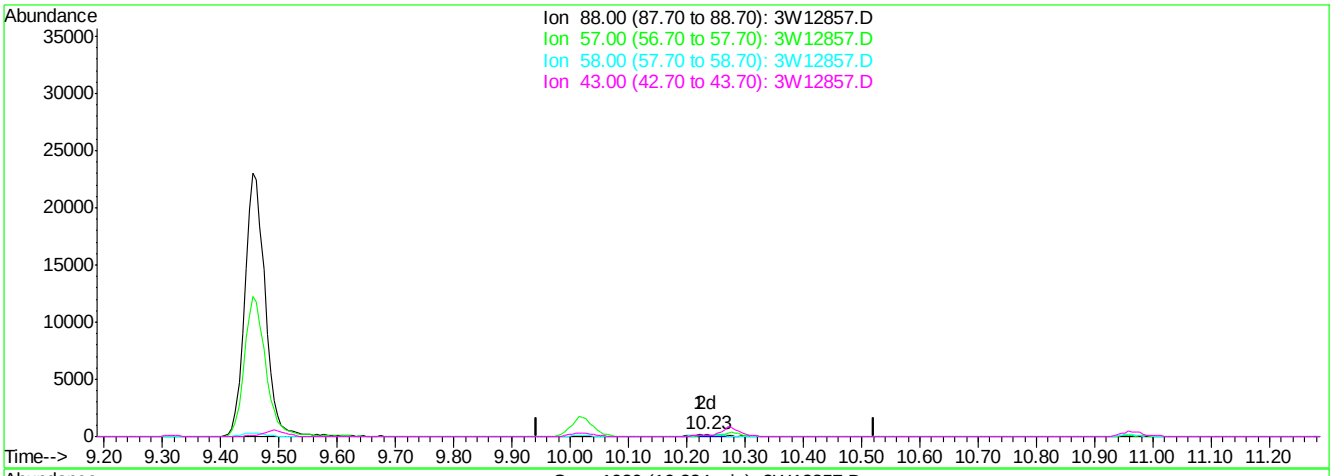
Ion	Exp%	Act%
88.00	100	100
57.00	21.70	39.29
58.00	60.00	73.21
43.00	26.30	54.76#

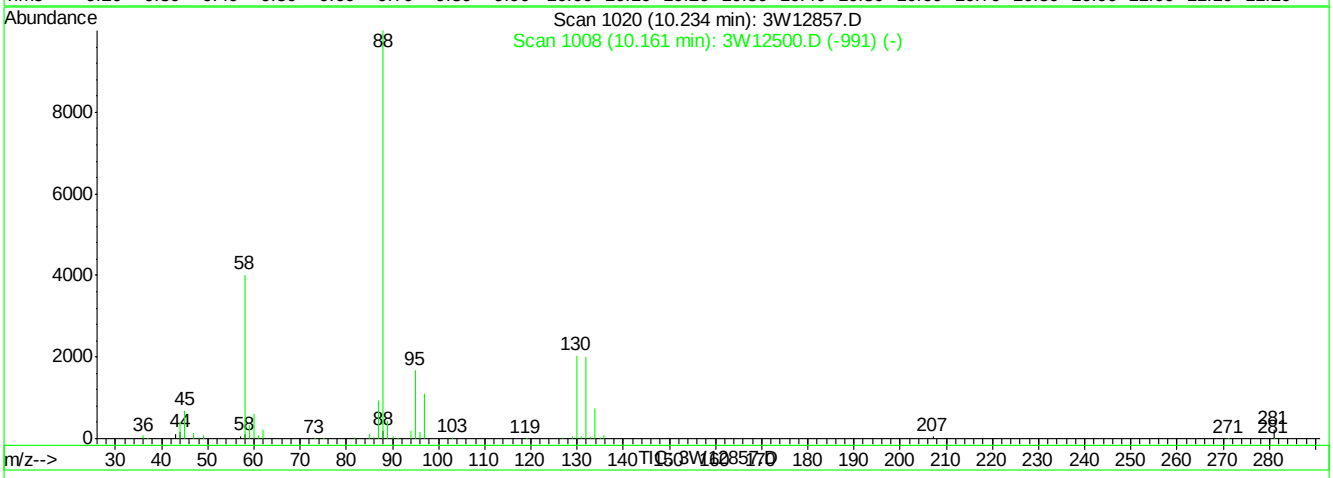
3W12857.D M3W523.M Mon Oct 05 08:43:11 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:43 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Multiple Level Calibration





(55) 1,4-DIOXANE

10.23min 0.09PPBV m

response 577

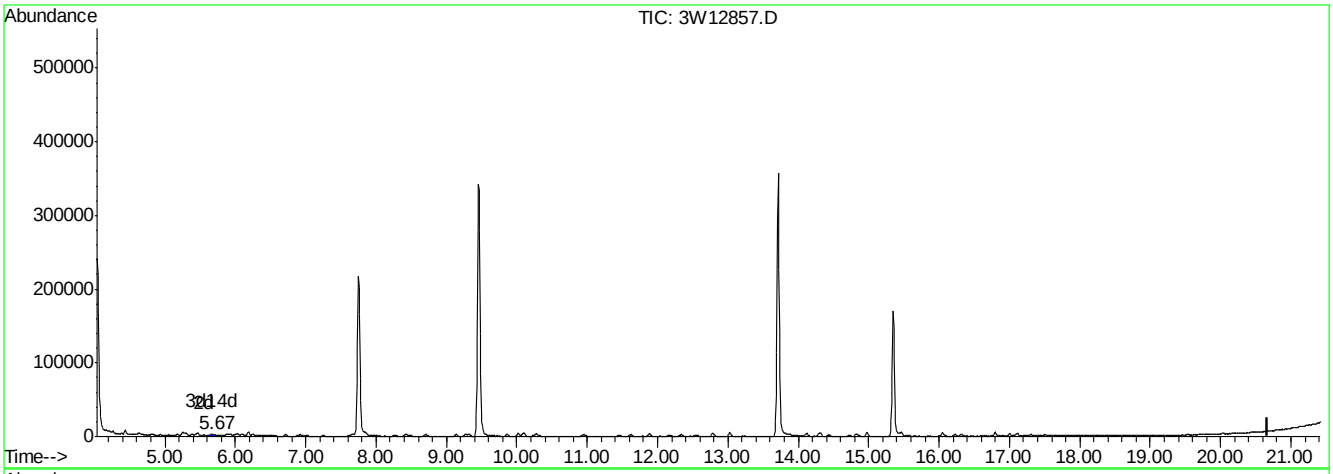
Ion	Exp%	Act%
88.00	100	100
57.00	21.70	34.33
58.00	60.00	49.25
43.00	26.30	51.24#

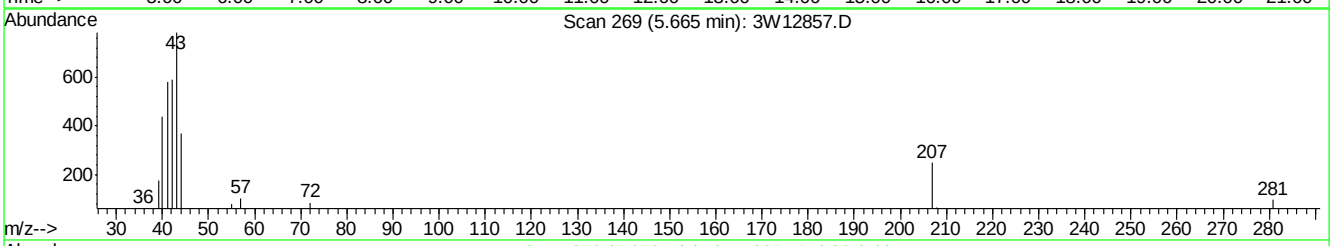
3W12857.D M3W523.M Mon Oct 05 08:43:17 2009 MS3W

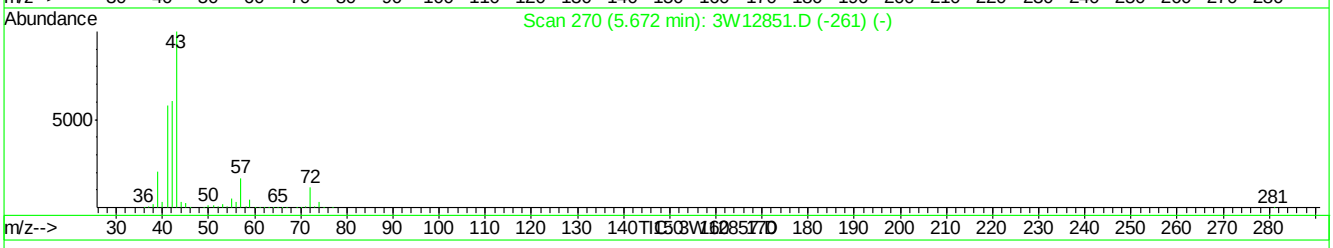
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:45 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 0.08PPBV m

response 5469

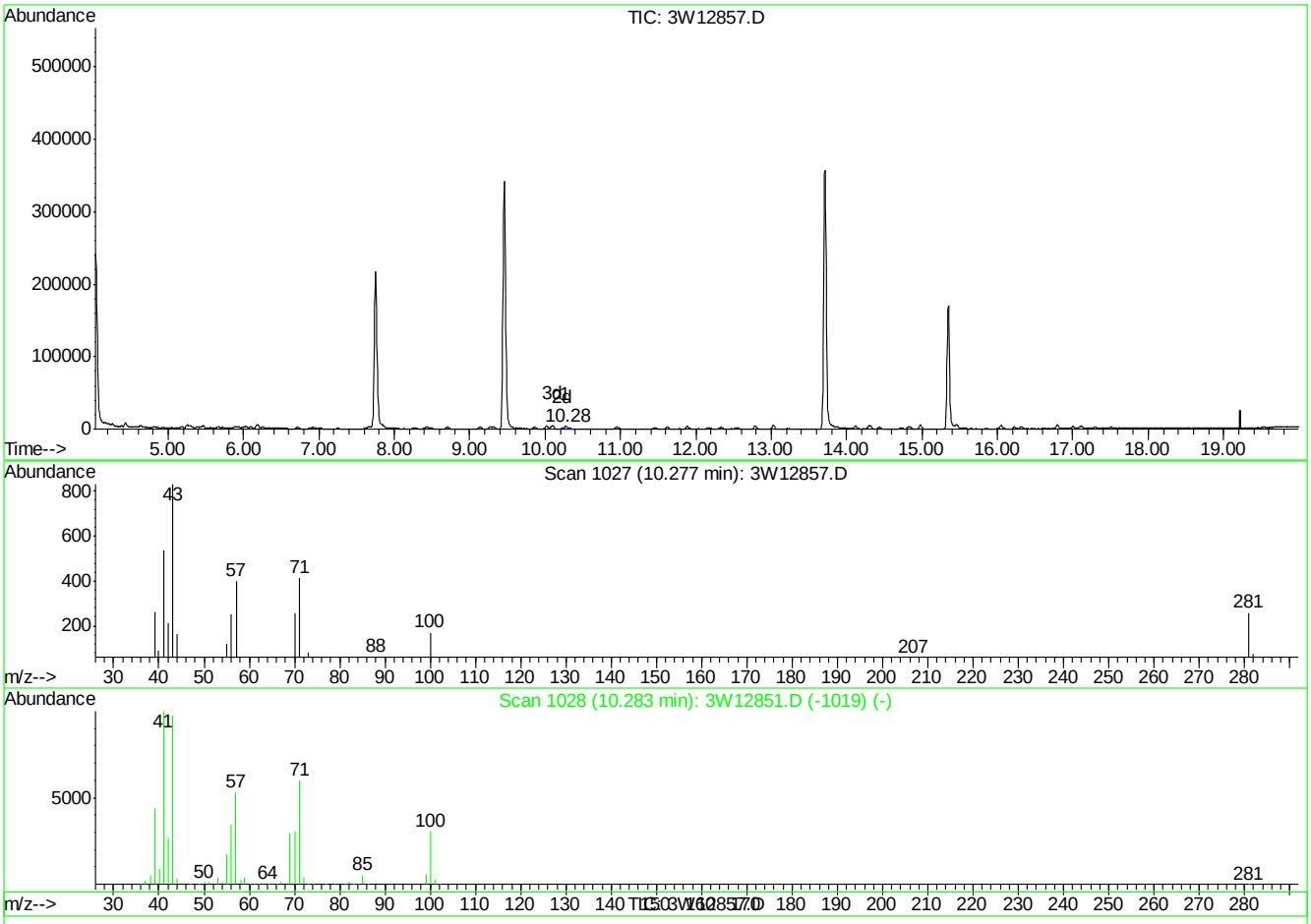
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12857.D M3W523.M Tue Oct 06 12:28:40 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:45 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 0.10PPBV m

response 11901

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12857.D M3W523.M Tue Oct 06 12:28:44 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12858.D Vial: 4
Acq On : 3 Oct 2009 1:04 am Operator: YOUMINH
Sample : IC523-0.04 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:42 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	73323	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	315332	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	125469	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	125469	10.00	PPBV	0.00

System Monitoring Compounds

78) 4-BROMOFLUOROBENZENE	15.35	95	61363	4.25	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 85.00%

Target Compounds						Qvalue
2) FREON 115	4.08	85	990	0.05	PPBV	95
3) FREON 152A	4.16	65	302	0.05	PPBV #	44
4) CHLORODIFLUOROMETHANE	4.20	67	146	0.05	PPBV #	39
5) DICHLORODIFLUOROMETHANE	4.26	85	1307	0.04	PPBV	98
7) PROPYLENE	4.21	41	392	0.04	PPBV #	1
8) FREON 114	4.44	85	1371	0.05	PPBV	93
9) CHLOROMETHANE	4.39	50	647	0.07	PPBV	98
10) VINYL CHLORIDE	4.53	62	412	0.04	PPBV #	50
11) 1,3-BUTADIENE	4.61	54	302	0.04	PPBV #	47
13) BROMOMETHANE	4.82	94	443	0.04	PPBV #	68
14) CHLOROETHANE	4.93	64	202	0.04	PPBV #	45
15) FREON 123	5.25	83	957	0.04	PPBV #	72
16) FREON 123A	5.29	117	553	0.04	PPBV #	65
17) TRICHLOROFLUOROMETHANE	5.46	101	1365	0.05	PPBV #	91
18) ISOPROPYL ALCOHOL	5.57	45	603	0.05	PPBV	97
19) ACETONE	5.40	58	194	0.05	PPBV #	10
23) IODOMETHANE	5.88	142	1034	0.04	PPBV	94
24) 1,1-DICHLOROETHYLENE	5.91	96	409	0.05	PPBV #	86
25) CARBON DISULFIDE	6.26	76	1168	0.04	PPBV #	87
27) BROMOETHENE	5.18	106	361	0.04	PPBV #	90
30) FREON 113	6.19	151	618	0.04	PPBV	92
31) TRANS-1,2-DICHLOROETHYLENE	6.71	96	398	0.04	PPBV #	83
32) TERTIARY BUTYL ALCOHOL	5.99	59	487	0.03	PPBV #	82
33) METHYL TERTIARY BUTYL ETHE	6.94	73	911	0.04	PPBV #	77
35) HEXANE	7.67	57	554	0.04	PPBV #	75
37) 1,1-DICHLOROETHANE	6.89	63	635	0.04	PPBV #	89
39) cis-1,2-DICHLOROETHYLENE	7.63	96	416	0.04	PPBV #	82
40) DIISOPROPYL ETHER	7.71	45	764	0.03	PPBV #	67
42) CHLOROFORM	7.84	83	825	0.04	PPBV	89
43) 2,4-DIMETHYLPENTANE	8.43	57	581	0.04	PPBV #	62
44) 1,1,1-TRICHLOROETHANE	8.71	97	863	0.04	PPBV	92
45) CARBON TETRACHLORIDE	9.27	117	803	0.03	PPBV	90
46) 1,2-DICHLOROETHANE	8.49	62	464	0.03	PPBV #	49
48) BENZENE	9.14	78	1042	0.04	PPBV	99
49) CYCLOHEXANE	9.32	56	561	0.04	PPBV #	72
50) 2,3-DIMETHYLPENTANE	9.49	71	208	0.04	PPBV #	1
51) TRICHLOROETHYLENE	10.09	95	418	0.03	PPBV	91
52) 1,2-DICHLOROPROPANE	9.86	63	413	0.05	PPBV #	62
53) BROMODICHLOROMETHANE	10.08	83	617	0.03	PPBV	98
54) 2,2,4-TRIMETHYLPENTANE	10.02	57	1621	0.04	PPBV #	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12858.D Vial: 4
Acq On : 3 Oct 2009 1:04 am Operator: YOUMINH
Sample : IC523-0.04 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:42 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

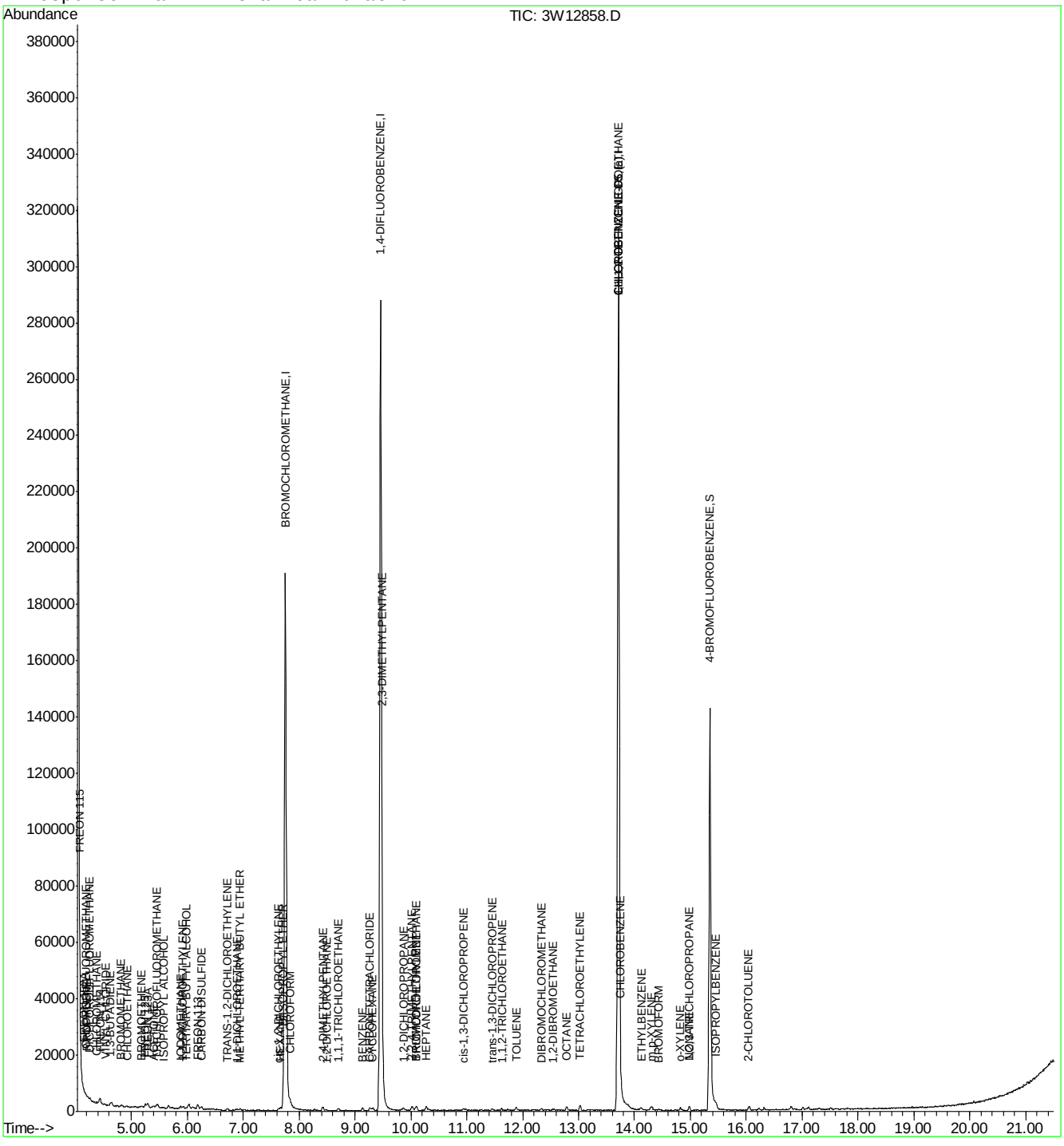
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	HEPTANE	10.27	43	719	0.05	PPBV		86
60)	cis-1,3-DICHLOROPROPENE	10.93	75	472	0.03	PPBV	#	79
61)	TOLUENE	11.88	92	594	0.03	PPBV	#	78
62)	trans-1,3-DICHLOROPROPENE	11.46	75	384	0.03	PPBV	#	56
63)	1,1,2-TRICHLOROETHANE	11.63	83	228	0.03	PPBV	#	61
66)	TETRACHLOROETHYLENE	13.03	164	463	0.04	PPBV		95
67)	DIBROMOCHLOROMETHANE	12.33	129	464	0.03	PPBV	#	80
68)	1,2-DIBROMOETHANE	12.55	107	395	0.03	PPBV	#	89
69)	OCTANE	12.79	43	664	0.04	PPBV		89
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	425	0.03	PPBV		84
71)	CHLOROBENZENE	13.76	112	746	0.04	PPBV	#	49
72)	ETHYLBENZENE	14.12	91	1040	0.03	PPBV	#	89
73)	m,p-XYLENE	14.31	106	727	0.06	PPBV	#	64
74)	o-XYLENE	14.82	106	320	0.03	PPBV	#	74
76)	NONANE	14.98	43	510	0.03	PPBV	#	55
77)	BROMOFORM	14.43	173	389	0.02	PPBV	#	82
80)	1,2,3-TRICHLOROPROPANE	14.98	75	345	0.03	PPBV	#	36
81)	ISOPROPYLBENZENE	15.47	105	938	0.03	PPBV	#	83
82)	2-CHLOROTOLUENE	16.04	126	204	0.03	PPBV	#	42

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12858.D Vial: 4
Acq On : 3 Oct 2009 1:04 am Operator: YOUMINH
Sample : IC523-0.04 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12859.D Vial: 6
Acq On : 3 Oct 2009 2:23 am Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:10:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

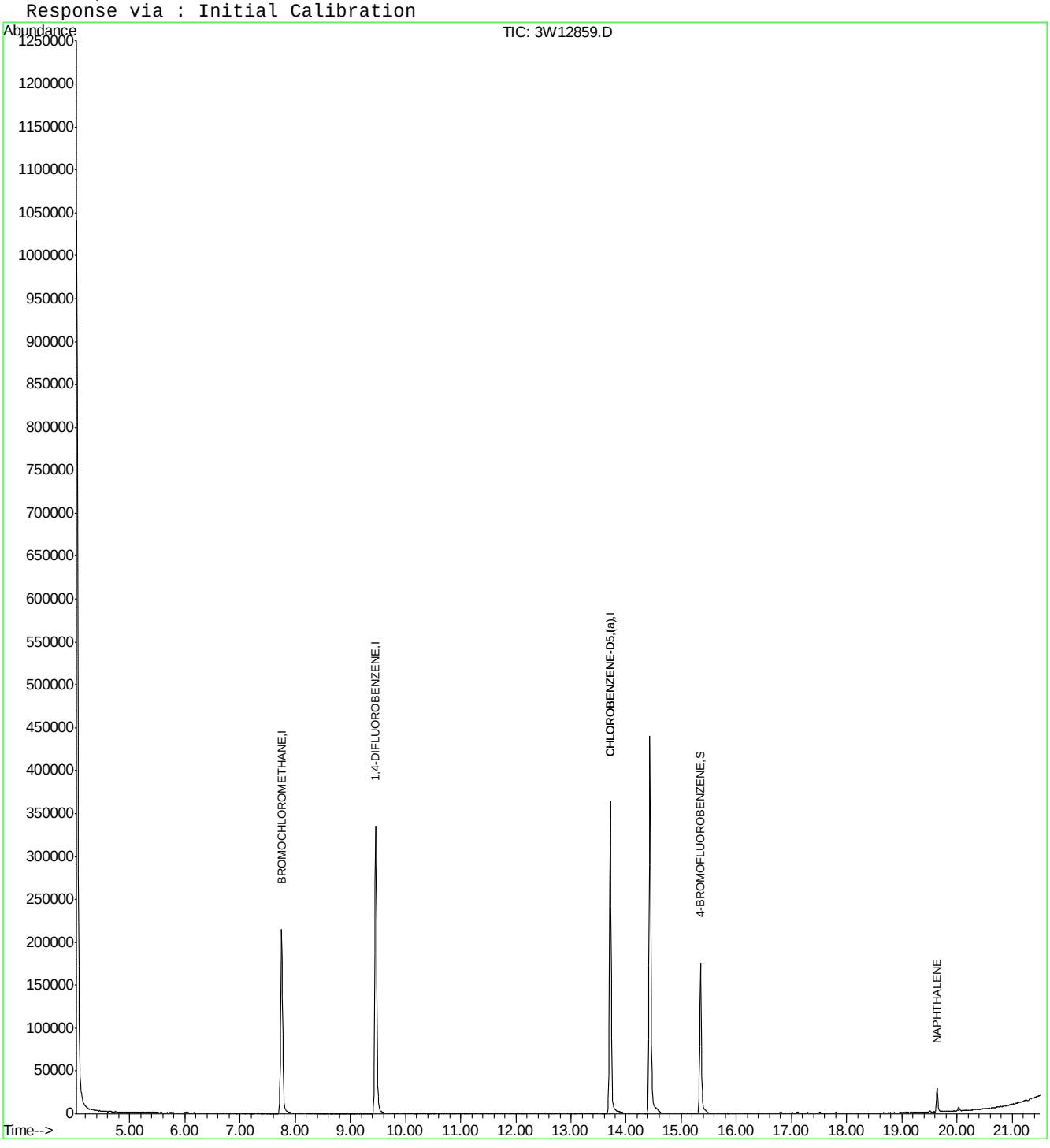
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	85556	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	372344	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	147170	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	147438	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	75804	4.91	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 98.20%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	26107	3.38	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12859.D Vial: 6
Acq On : 3 Oct 2009 2:23 am Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:12 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12860.D Vial: 6
Acq On : 3 Oct 2009 3:03 am Operator: YOUMINH
Sample : IC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:10:52 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	74121	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	328473	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	136851	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	136851	10.00	PPBV	0.00

System Monitoring Compounds

78) 4-BROMOFLUOROBENZENE	15.35	95	71248	4.96	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 99.20%

Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	56169	7.84	PPBV	96

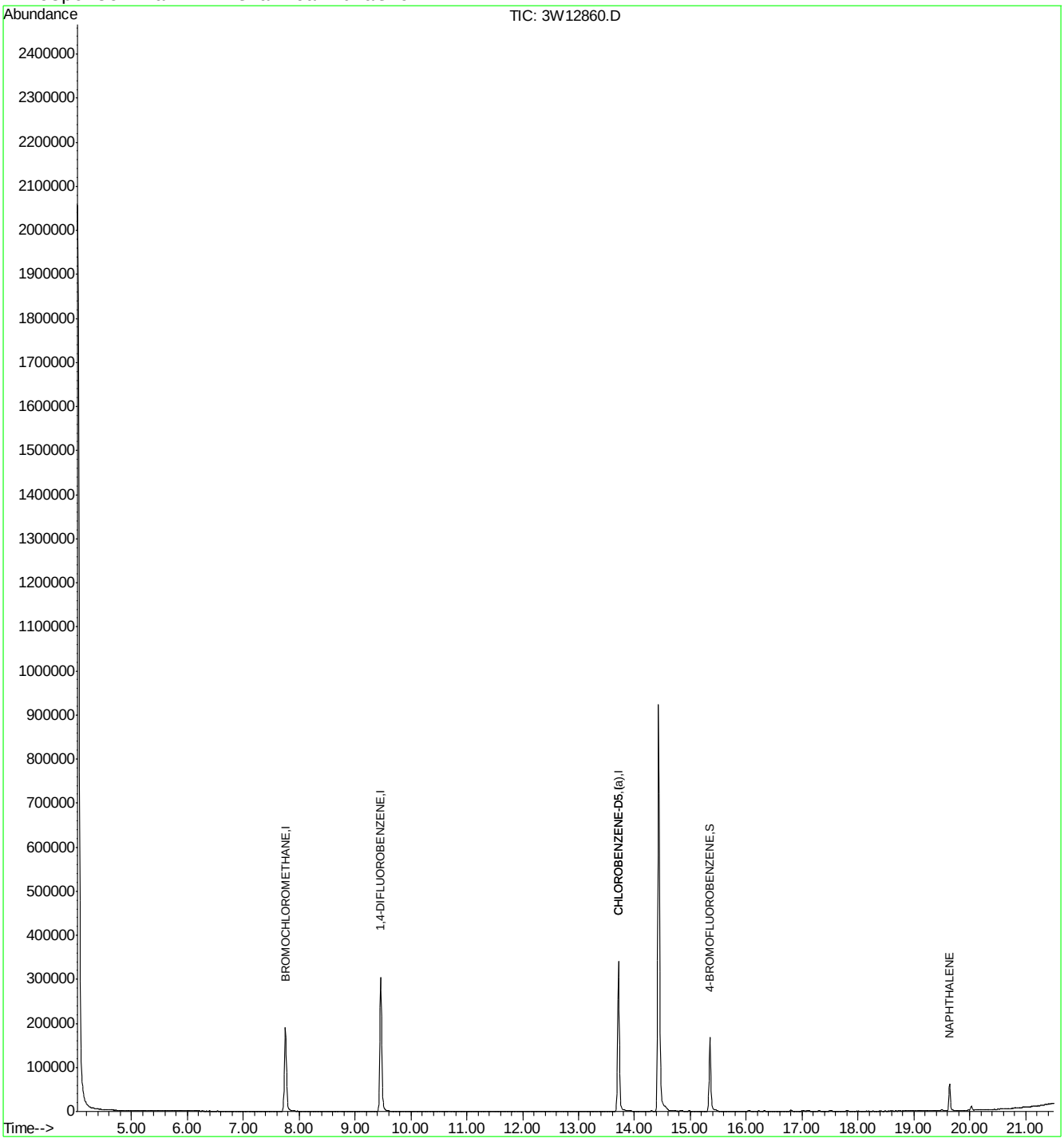
(#) = qualifier out of range (m) = manual integration (+) = signals summed

ACCUTEST Laboratories JA28238

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12860.D Vial: 6
Acq On : 3 Oct 2009 3:03 am Operator: YOUMINH
Sample : IC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:12 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.77	128	78769	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.48	114	373529	10.00	PPBV	0.01
64) CHLOROBENZENE-D5	13.73	82	216753	10.00	PPBV	0.01
97) CHLOROBENZENE-D5 (a)	13.73	82	216753	10.00	PPBV	0.01

System Monitoring Compounds

78) 4-BROMOFLUOROBENZENE	15.37	95	108137	4.33	PPBV	0.02

Spiked Amount 5.000 Range 65 - 128 Recovery = 86.60%

Target Compounds						Qvalue
2) FREON 115	4.08	85	886473	39.01	PPBV	98
3) FREON 152A	4.16	65	292893	40.81	PPBV	98
4) CHLORODIFLUOROMETHANE	4.19	67	139944	40.66	PPBV	100
5) DICHLORODIFLUOROMETHANE	4.26	85	1253810	38.99	PPBV	99
6) PROPANE	4.22	43	157386	40.73	PPBV	100
7) PROPYLENE	4.21	41	447273	40.92	PPBV	100
8) FREON 114	4.44	85	1283954	39.26	PPBV	99
9) CHLOROMETHANE	4.38	50	413800	41.65	PPBV	99
10) VINYL CHLORIDE	4.53	62	464321	40.68	PPBV	100
11) 1,3-BUTADIENE	4.62	54	345063	42.56	PPBV	99
12) n-BUTANE	4.64	43	692558	42.16	PPBV	100
13) BROMOMETHANE	4.82	94	442874	39.94	PPBV	99
14) CHLOROETHANE	4.93	64	247412	41.98	PPBV	99
15) FREON 123	5.26	83	997312	40.16	PPBV	99
16) FREON 123A	5.30	117	641175	40.59	PPBV	99
17) TRICHLOROFLUOROMETHANE	5.46	101	1271422	40.70	PPBV	99
18) ISOPROPYL ALCOHOL	5.54	45	685401	48.89	PPBV	100
19) ACETONE	5.35	58	192352	45.50	PPBV	91
20) PENTANE	5.67	42	429666	42.84	PPBV	100
21) TVHC as EQUIV PENTANE	5.68	TIC	2862497m	43.40	PPBV	
22) ETHYL ETHER	5.70	74	192178	44.53	PPBV	98
23) IODOMETHANE	5.89	142	1280232	41.72	PPBV	99
24) 1,1-DICHLOROETHYLENE	5.93	96	406421	41.88	PPBV	99
25) CARBON DISULFIDE	6.26	76	1224352	42.13	PPBV	98
26) ETHANOL	5.04	45	139651	48.23	PPBV	99
27) BROMOETHENE	5.18	106	439530	40.35	PPBV	100
28) METHYLENE CHLORIDE	6.04	84	364126	42.07	PPBV	96
29) 3-CHLOROPROPENE	6.11	76	186133	42.96	PPBV	95
30) FREON 113	6.19	151	790555	41.81	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	444651	42.72	PPBV	97
32) TERTIARY BUTYL ALCOHOL	5.96	59	731015	38.23	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	1239586	47.54	PPBV	100
34) TETRAHYDROFURAN	8.19	72	206090	51.56	PPBV	97
35) HEXANE	7.67	57	598265	42.56	PPBV	98
36) VINYL ACETATE	7.01	86	95115	48.03	PPBV #	85
37) 1,1-DICHLOROETHANE	6.91	63	786806	43.08	PPBV	99
38) METHYL ETHYL KETONE	7.21	72	201439	51.94	PPBV #	91
39) cis-1,2-DICHLOROETHYLENE	7.64	96	456032	44.22	PPBV	99
40) DIISOPROPYL ETHER	7.68	45	1188755	47.24	PPBV	100
41) ETHYL ACETATE	7.76	61	124225	54.03	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.87	83	951923	43.18	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.44	57	726171	45.44	PPBV		100
44)	1,1,1-TRICHLOROETHANE	8.72	97	1048268	43.45	PPBV		99
45)	CARBON TETRACHLORIDE	9.28	117	1161982	44.11	PPBV		100
46)	1,2-DICHLOROETHANE	8.51	62	676718	45.11	PPBV		100
48)	BENZENE	9.15	78	1322594	43.47	PPBV		100
49)	CYCLOHEXANE	9.33	56	650687	43.73	PPBV		99
50)	2,3-DIMETHYLPENTANE	9.51	71	284579	44.04	PPBV		95
51)	TRICHLOROETHYLENE	10.12	95	619021	42.67	PPBV		98
52)	1,2-DICHLOROPROPANE	9.87	63	478958	45.08	PPBV		99
53)	BROMODICHLOROMETHANE	10.10	83	1010363	41.79	PPBV		98
54)	2,2,4-TRIMETHYLPENTANE	10.03	57	1887970	42.48	PPBV		100
55)	1,4-DIOXANE	10.15	88	301005	49.48	PPBV		97
56)	HEPTANE	10.29	43	713727	42.00	PPBV		97
57)	TVHC as EQUIV HEPTANE	10.29	TIC	5448455m	46.19	PPBV		
58)	METHYL METHACRYLATE	10.31	69	459684	52.99	PPBV	#	86
59)	METHYL ISOBUTYL KETONE	10.93	43	875505	49.65	PPBV		99
60)	cis-1,3-DICHLOROPROPENE	10.96	75	772418	45.23	PPBV		99
61)	TOLUENE	11.89	92	995743	45.47	PPBV		97
62)	trans-1,3-DICHLOROPROPENE	11.47	75	788277	47.84	PPBV		99
63)	1,1,2-TRICHLOROETHANE	11.64	83	468193	45.63	PPBV		100
65)	2-HEXANONE	12.14	43	873970	43.18	PPBV		100
66)	TETRACHLOROETHYLENE	13.04	164	807302	35.84	PPBV		99
67)	DIBROMOCHLOROMETHANE	12.36	129	1147242	37.47	PPBV		100
68)	1,2-DIBROMOETHANE	12.57	107	892045	38.61	PPBV		100
69)	OCTANE	12.80	43	958955	35.04	PPBV		98
70)	1,1,1,2-TETRACHLOROETHANE	13.75	131	821834	37.30	PPBV		99
71)	CHLOROBENZENE	13.77	112	1318702	37.37	PPBV		99
72)	ETHYLBENZENE	14.14	91	2042153	36.98	PPBV		98
73)	m,p-XYLENE	14.33	106	1623842	76.06	PPBV		92
74)	o-XYLENE	14.84	106	784579	38.10	PPBV		96
75)	STYRENE	14.74	104	1157387	40.55	PPBV		100
76)	NONANE	14.99	43	882376	33.32	PPBV		96
77)	BROMOFORM	14.46	173	1106126	38.87	PPBV		98
79)	1,1,2,2-TETRACHLOROETHANE	14.88	83	932286	38.36	PPBV		100
80)	1,2,3-TRICHLOROPROPANE	15.00	75	736702	37.92	PPBV		100
81)	ISOPROPYLBENZENE	15.48	105	2186904	36.93	PPBV		98
82)	2-CHLOROTOLUENE	16.06	126	536004	38.37	PPBV		99
83)	n-PROPYLBENZENE	16.08	120	606300	39.66	PPBV		99
84)	4-ETHYLTOLUENE	16.25	105	1972649	38.98	PPBV		98
85)	1,3,5-TRIMETHYLBENZENE	16.34	105	1606356	37.78	PPBV		98
86)	tert-BUTYLBENZENE	16.82	134	438262	39.87	PPBV	#	92
87)	1,2,4-TRIMETHYLBENZENE	16.83	105	1504053	38.66	PPBV		98
88)	m-DICHLOROBENZENE	17.03	146	1001409	40.09	PPBV		99
89)	BENZYL CHLORIDE	17.03	91	1078867	45.00	PPBV		98
90)	p-DICHLOROBENZENE	17.11	146	949554	41.27	PPBV		98
91)	sec-BUTYLBENZENE	17.13	134	511477	40.36	PPBV	#	88
92)	p-ISOPROPYLTOLUENE	17.32	134	520101	42.47	PPBV		92
93)	o-DICHLOROBENZENE	17.53	146	860527	39.75	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

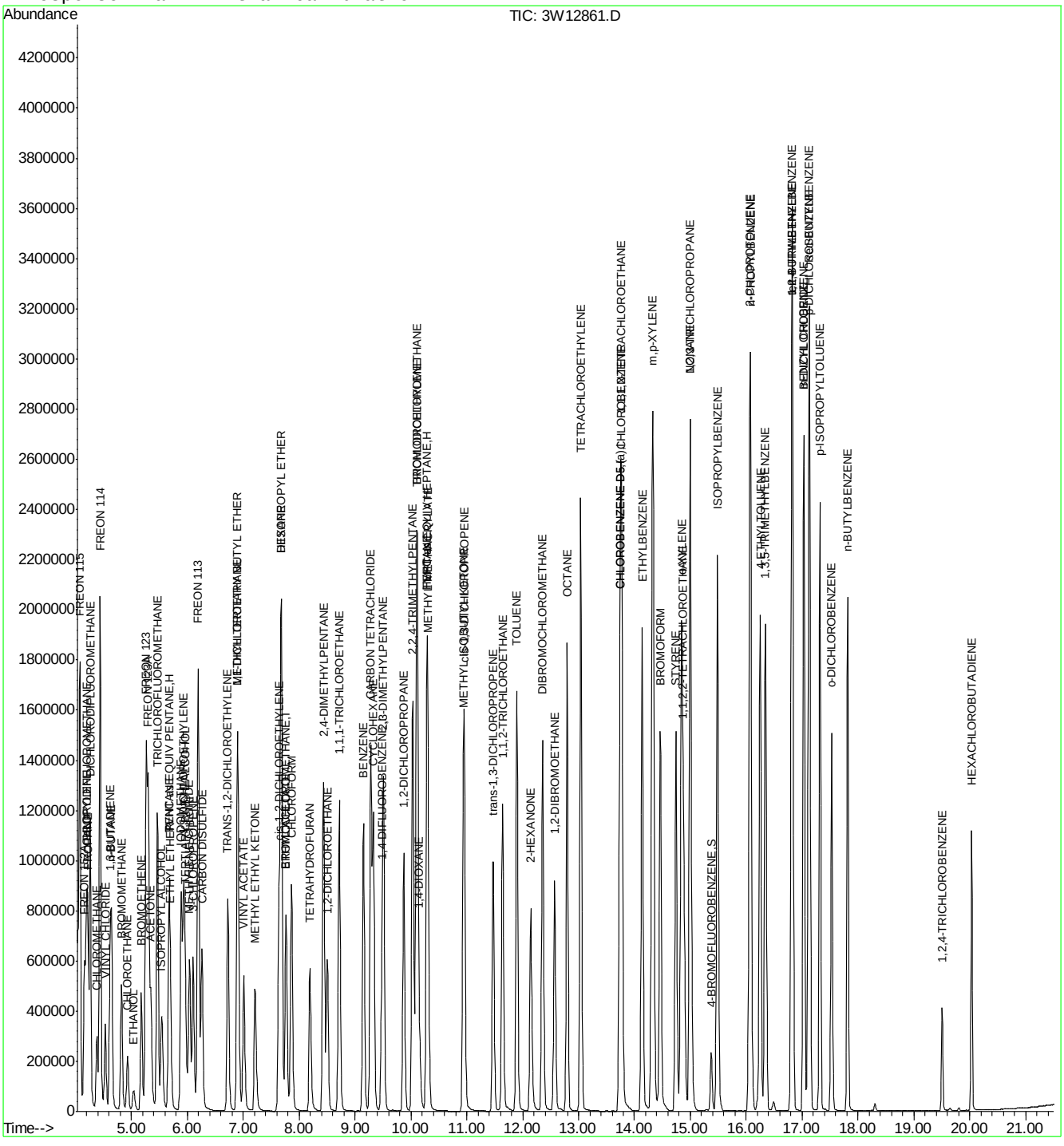
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.81	134	404973	44.79	PPBV	92
95)	HEXACHLOROBUTADIENE	20.03	225	248132	30.55	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.51	180	157247	40.09	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

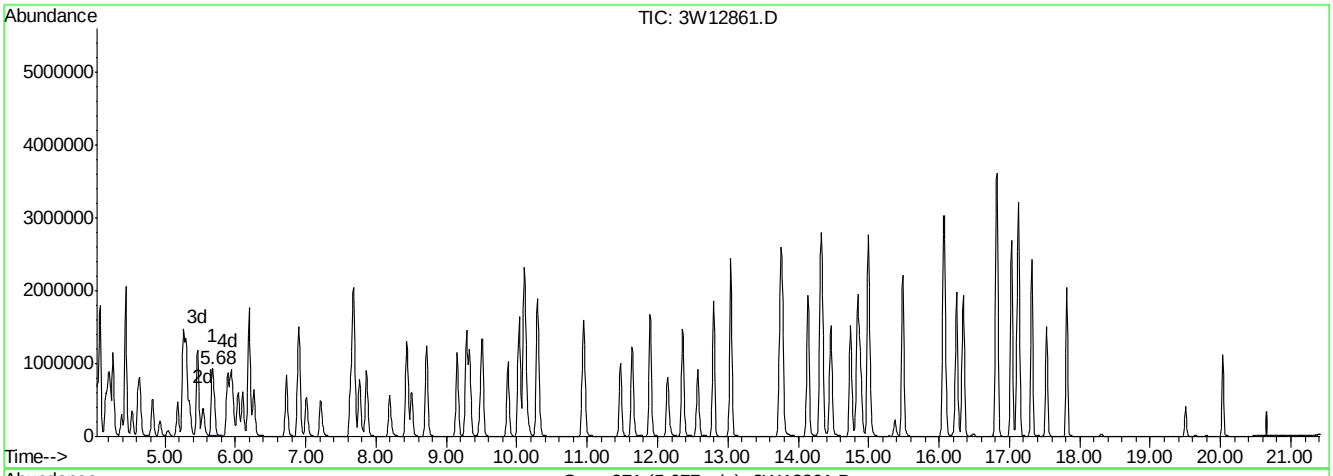


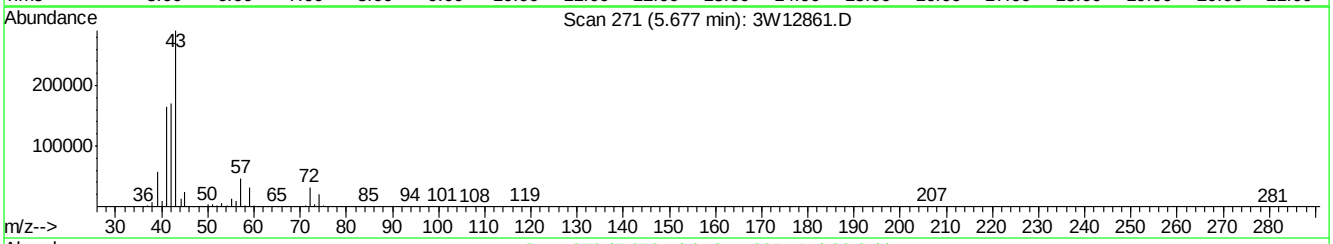
ACCUTEST Laboratories JA28238

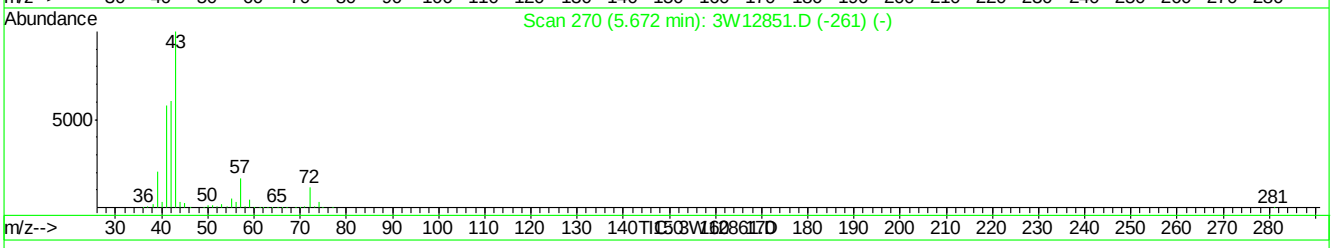
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.68min 43.40PPBV m

response 2862497

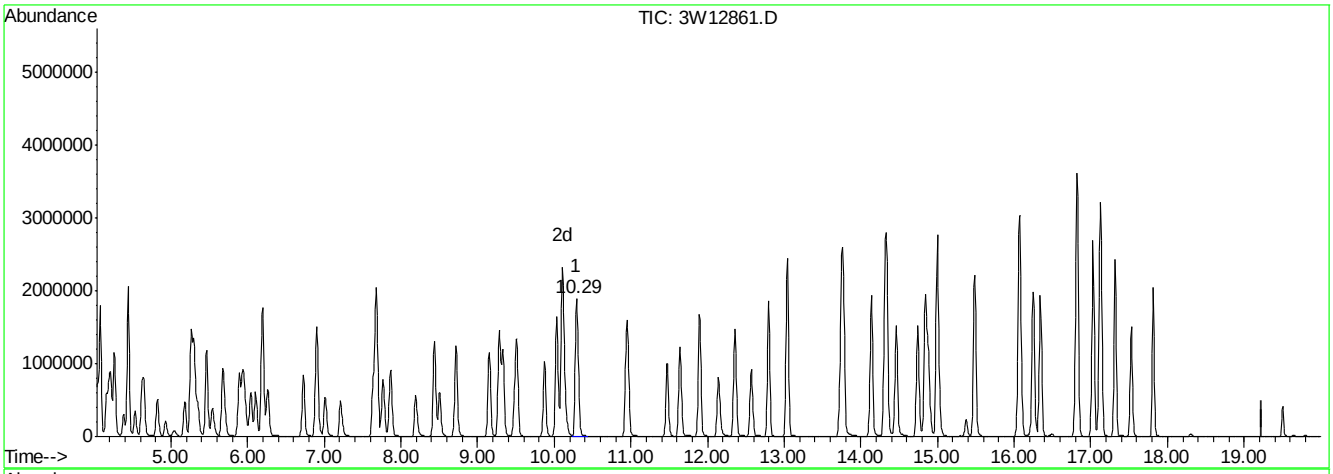
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.03#
0.00	0.00	0.03#
0.00	0.00	0.00

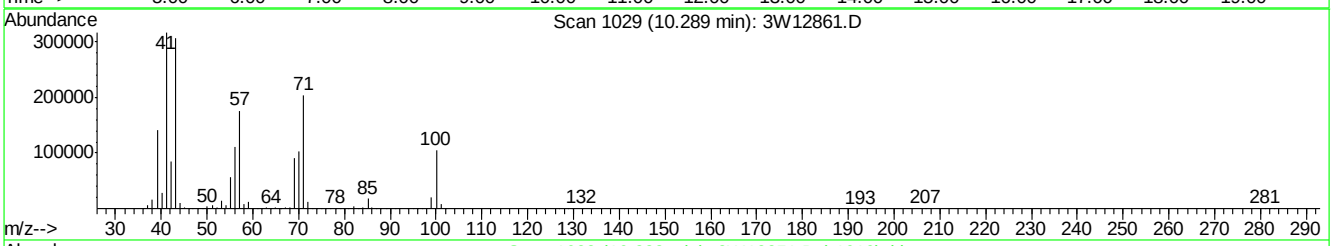
3W12861.D M3W523.M Tue Oct 06 12:28:54 2009 MS3W

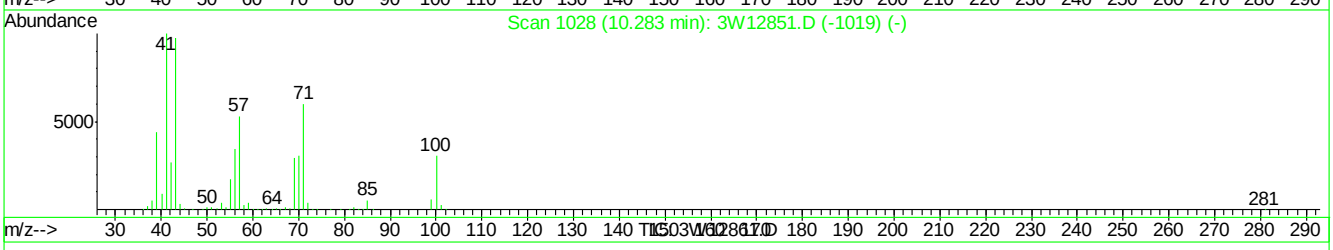
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.29min 46.19PPBV m

response 5448455

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.02#
0.00	0.00	0.02#
0.00	0.00	0.00

3W12861.D M3W523.M Tue Oct 06 12:28:57 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12862.D Vial: 7
Acq On : 3 Oct 2009 4:25 am Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:10:59 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

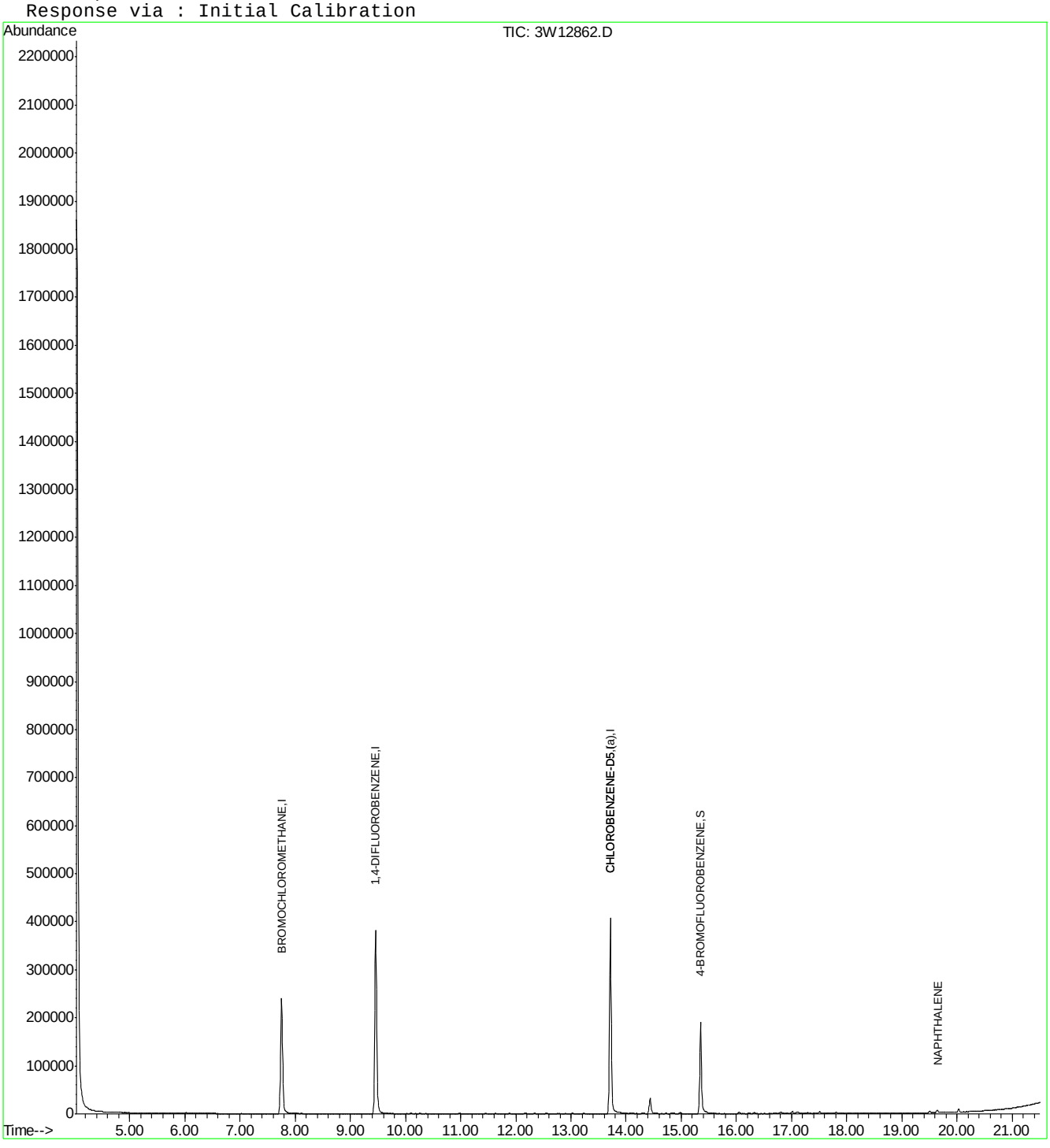
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	98336	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	430117	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	163974	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	163974	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	82129	4.77	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 95.40%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.65	128	5824	0.68	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12862.D Vial: 7
Acq On : 3 Oct 2009 4:25 am Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:12 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12863.D Vial: 7
Acq On : 3 Oct 2009 5:04 am Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:11:07 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

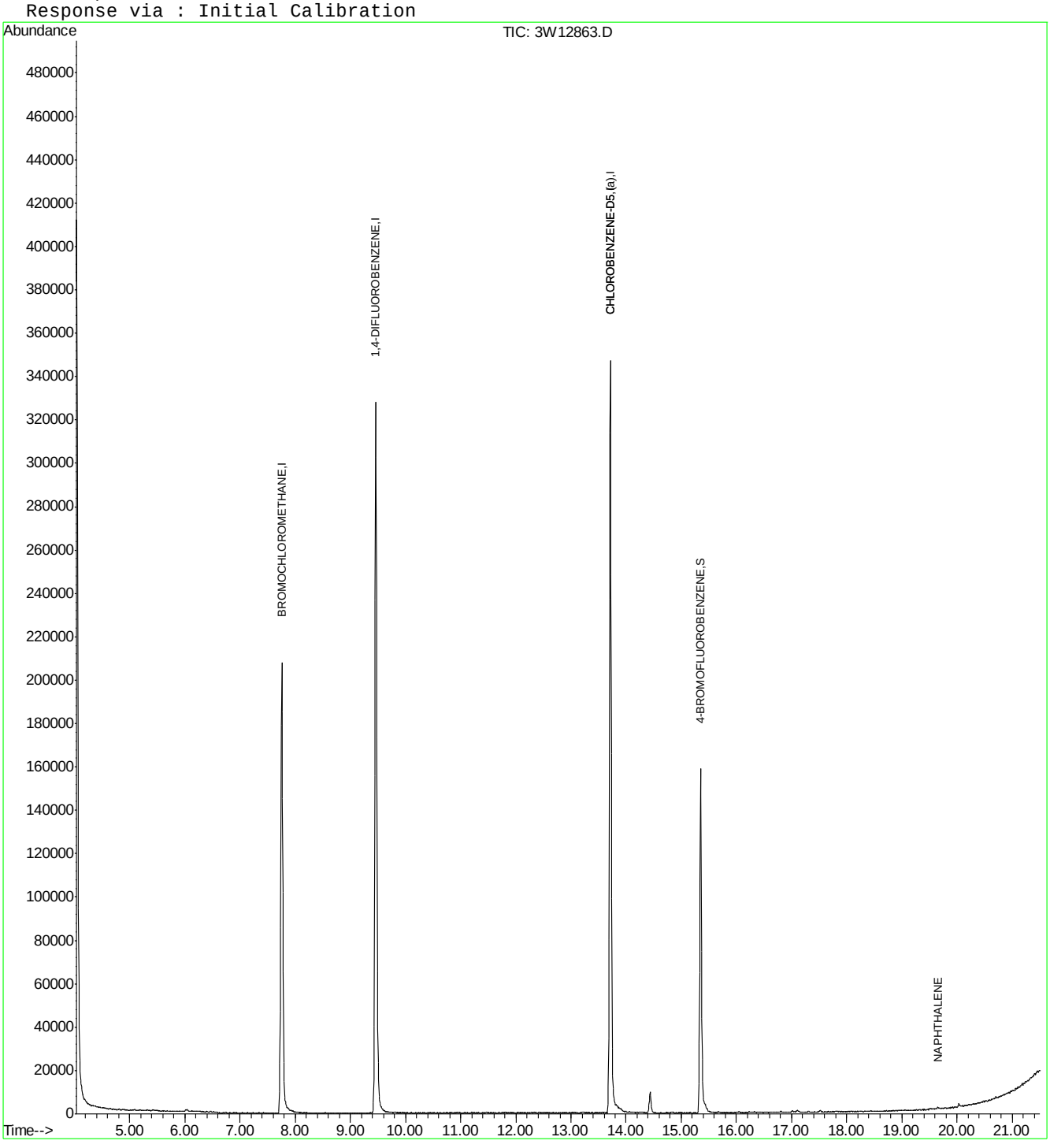
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	81662	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	355221	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	139143	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	139143	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	68581	4.70	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 94.00%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.65	128	1209	0.17	PPBV #	72

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12863.D Vial: 7
Acq On : 3 Oct 2009 5:04 am Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:13 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12864.D Vial: 6
Acq On : 3 Oct 2009 6:24 am Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:11:13 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

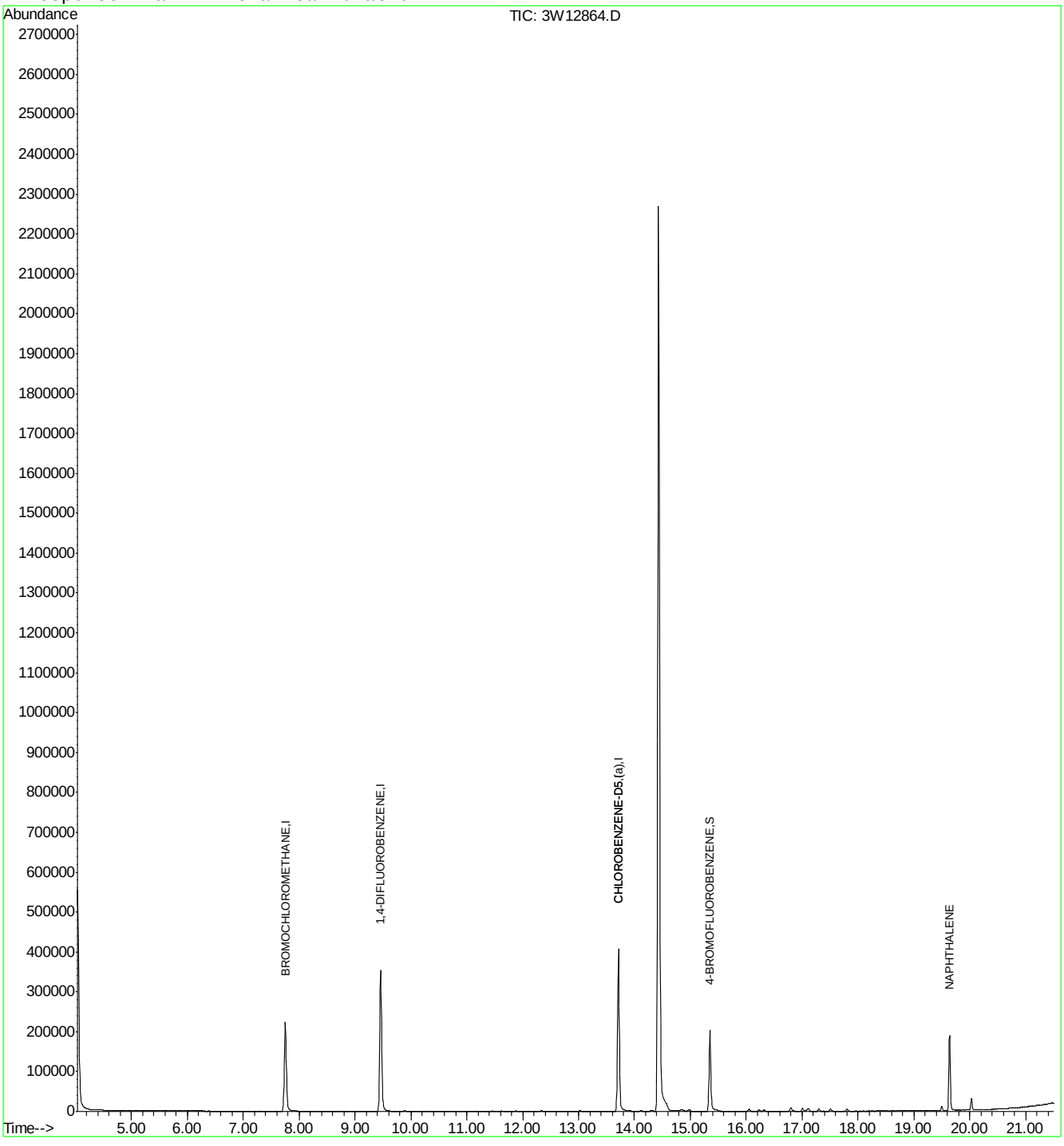
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	87655	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	393462	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	162462	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	162747	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	86665	5.08	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.60%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	172316	20.23	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12864.D Vial: 6
Acq On : 3 Oct 2009 6:24 am Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:11 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12865.D Vial: 6
Acq On : 3 Oct 2009 7:06 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:11:20 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

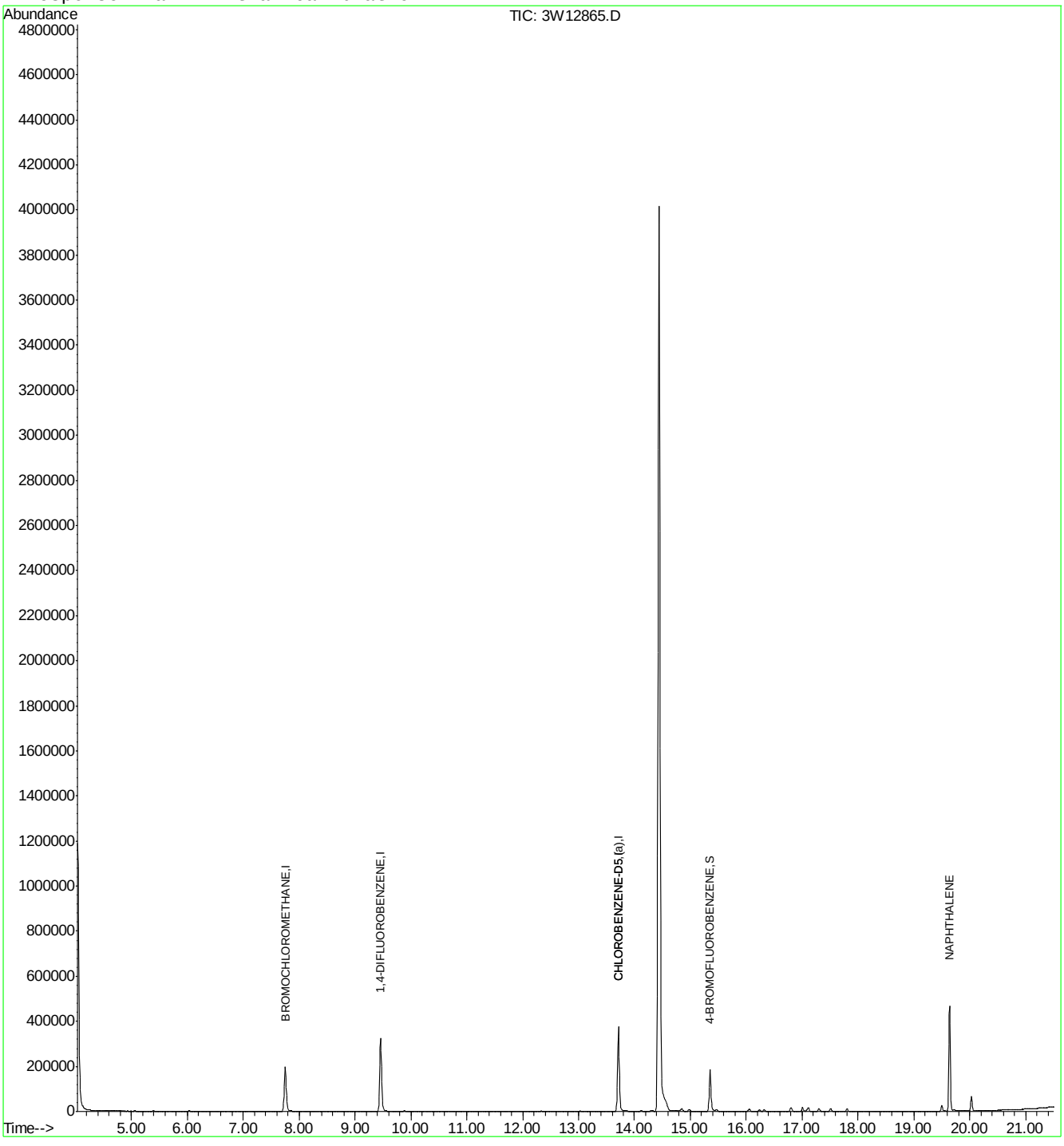
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	73371	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	348551	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	149231	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	149231	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	79314	5.07	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.40%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	418819	53.62	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12865.D Vial: 6
Acq On : 3 Oct 2009 7:06 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:11 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:49 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	89777	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	398659	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	188188	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	188188	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	102696	5.20	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 104.00%			
Target Compounds						Qvalue
2) FREON 115	4.07	85	252429	9.57	PPBV	96
3) FREON 152A	4.16	65	82417	9.93	PPBV	99
4) CHLORODIFLUOROMETHANE	4.19	67	37188	9.23	PPBV	95
5) DICHLORODIFLUOROMETHANE	4.26	85	350007	9.67	PPBV	99
6) PROPANE	4.22	43	48693	10.87	PPBV	100
7) PROPYLENE	4.21	41	138024	10.77	PPBV	99
8) FREON 114	4.44	85	367369	9.67	PPBV	98
9) CHLOROMETHANE	4.38	50	117725	9.00	PPBV	99
10) VINYL CHLORIDE	4.53	62	139574	10.71	PPBV	100
11) 1,3-BUTADIENE	4.61	54	102017	10.97	PPBV	99
12) n-BUTANE	4.64	43	216690	10.70	PPBV	99
13) BROMOMETHANE	4.82	94	129860	10.07	PPBV	100
14) CHLOROETHANE	4.92	64	73936	10.99	PPBV	100
15) FREON 123	5.25	83	300248	10.47	PPBV	99
16) FREON 123A	5.29	117	179648	9.99	PPBV	90
17) TRICHLOROFLUOROMETHANE	5.46	101	349734	9.67	PPBV	100
18) ISOPROPYL ALCOHOL	5.51	45	184191	10.80	PPBV	98
19) ACETONE	5.34	58	53867	10.66	PPBV	96
20) PENTANE	5.67	42	138696	11.32	PPBV	98
21) TVHC as EQUIV PENTANE	5.67	TIC	881397m	12.66	PPBV	
22) ETHYL ETHER	5.69	74	54325	10.96	PPBV	98
23) IODOMETHANE	5.88	142	340817	9.87	PPBV	99
24) 1,1-DICHLOROETHYLENE	5.93	96	115295	9.77	PPBV	96
25) CARBON DISULFIDE	6.26	76	355614	10.18	PPBV	99
26) ETHANOL	5.02	45	38594	9.51	PPBV	99
27) BROMOETHENE	5.17	106	127876	10.28	PPBV	99
28) METHYLENE CHLORIDE	6.03	84	103651	9.56	PPBV	94
29) 3-CHLOROPROPENE	6.10	76	52877	10.61	PPBV #	89
30) FREON 113	6.19	151	206128	9.73	PPBV	95
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	120023	9.90	PPBV	95
32) TERTIARY BUTYL ALCOHOL	5.93	59	233846	11.76	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	6.89	73	306270	10.37	PPBV	97
34) TETRAHYDROFURAN	8.18	72	49538	11.47	PPBV	90
35) HEXANE	7.67	57	181494	11.10	PPBV	99
36) VINYL ACETATE	7.00	86	23315	11.58	PPBV #	78
37) 1,1-DICHLOROETHANE	6.89	63	224299	10.70	PPBV	99
38) METHYL ETHYL KETONE	7.20	72	46739	10.88	PPBV #	83
39) cis-1,2-DICHLOROETHYLENE	7.62	96	119118	9.94	PPBV	96
40) DIISOPROPYL ETHER	7.67	45	336009	11.99	PPBV	98
41) ETHYL ACETATE	7.75	61	28923	10.44	PPBV #	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:49 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.84	83	250917	10.09	PPBV	99
43)	2,4-DIMETHYLPENTANE	8.43	57	205302	11.03	PPBV	99
44)	1,1,1-TRICHLOROETHANE	8.71	97	264997	9.93	PPBV	98
45)	CARBON TETRACHLORIDE	9.27	117	282234	10.14	PPBV	99
46)	1,2-DICHLOROETHANE	8.49	62	175071	10.78	PPBV	100
48)	BENZENE	9.14	78	354876	10.65	PPBV	99
49)	CYCLOHEXANE	9.32	56	183198	11.03	PPBV	92
50)	2,3-DIMETHYLPENTANE	9.50	71	76489	10.24	PPBV	95
51)	TRICHLOROETHYLENE	10.10	95	157812	10.46	PPBV	97
52)	1,2-DICHLOROPROPANE	9.86	63	126525	10.54	PPBV	96
53)	BROMODICHLOROMETHANE	10.08	83	260500	11.20	PPBV	100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	539554	10.99	PPBV	99
55)	1,4-DIOXANE	10.13	88	67645	10.29	PPBV	93
56)	HEPTANE	10.27	43	215545	11.06	PPBV	95
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1398909m	11.15	PPBV	
58)	METHYL METHACRYLATE	10.29	69	100239	11.52	PPBV	94
59)	METHYL ISOBUTYL KETONE	10.91	43	213899	11.91	PPBV	97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	190202	11.29	PPBV	98
61)	TOLUENE	11.88	92	237166	10.71	PPBV	100
62)	trans-1,3-DICHLOROPROPENE	11.45	75	177560	11.42	PPBV	97
63)	1,1,2-TRICHLOROETHANE	11.62	83	113468	11.15	PPBV	98
65)	2-HEXANONE	12.11	43	200077	12.38	PPBV	96
66)	TETRACHLOROETHYLENE	13.03	164	181114	9.15	PPBV	97
67)	DIBROMOCHLOROMETHANE	12.33	129	254914	11.15	PPBV	99
68)	1,2-DIBROMOETHANE	12.55	107	195704	10.81	PPBV	99
69)	OCTANE	12.78	43	278882	11.17	PPBV	94
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	182618	9.70	PPBV	99
71)	CHLOROBENZENE	13.76	112	301665	9.94	PPBV	98
72)	ETHYLBENZENE	14.12	91	476344	10.31	PPBV	99
73)	m,p-XYLENE	14.30	106	359359	20.54	PPBV	99
74)	o-XYLENE	14.81	106	171315	10.29	PPBV	99
75)	STYRENE	14.72	104	241181	11.32	PPBV	99
76)	NONANE	14.97	43	257827	11.22	PPBV	97
77)	BROMOFORM	14.43	173	219334	10.86	PPBV	100
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	209946	9.87	PPBV	99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	170022	10.26	PPBV	95
81)	ISOPROPYLBENZENE	15.46	105	487847	9.96	PPBV	99
82)	2-CHLOROTOLUENE	16.04	126	113015	10.25	PPBV	99
83)	n-PROPYLBENZENE	16.05	120	123392	9.58	PPBV	100
84)	4-ETHYLTOLUENE	16.22	105	412678	9.77	PPBV	99
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	347928	9.78	PPBV	99
86)	tert-BUTYLBENZENE	16.79	134	87958	9.33	PPBV	99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	314908	9.89	PPBV	100
88)	m-DICHLOROBENZENE	17.01	146	190744	9.35	PPBV	99
89)	BENZYL CHLORIDE	17.00	91	195022	9.99	PPBV	98
90)	p-DICHLOROBENZENE	17.08	146	174970	9.02	PPBV	99
91)	sec-BUTYLBENZENE	17.11	134	99867	9.38	PPBV	94
92)	p-ISOPROPYLTOLUENE	17.29	134	96664	8.93	PPBV	98
93)	o-DICHLOROBENZENE	17.50	146	165406	8.95	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:49 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

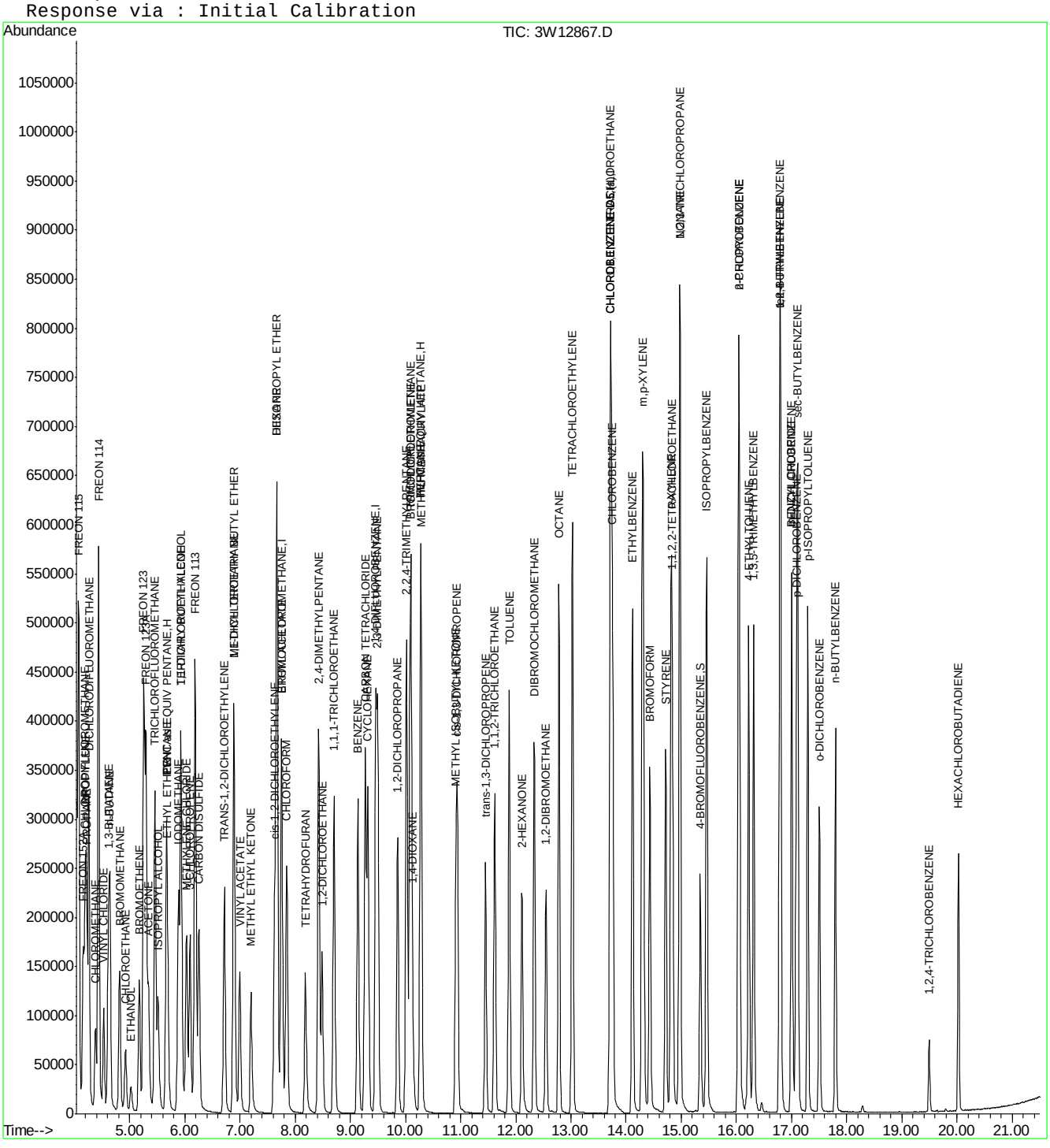
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) n-BUTYLBENZENE	17.80	134	70135	9.94	PPBV #	90
95) HEXACHLOROBUTADIENE	20.03	225	58500	8.10	PPBV	99
96) 1,2,4-TRICHLOROBENZENE	19.49	180	28024	7.95	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:30 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

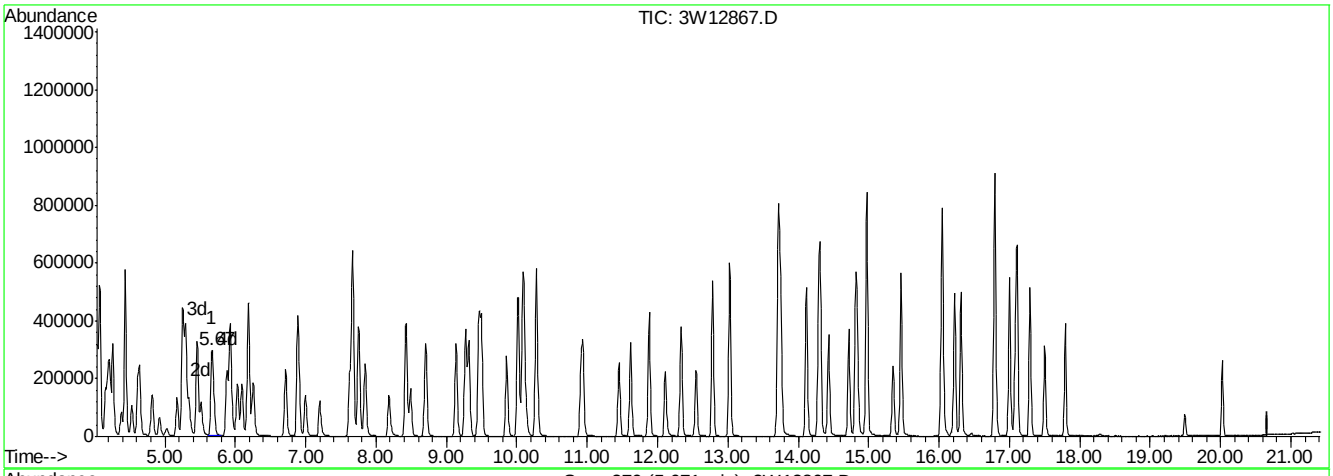


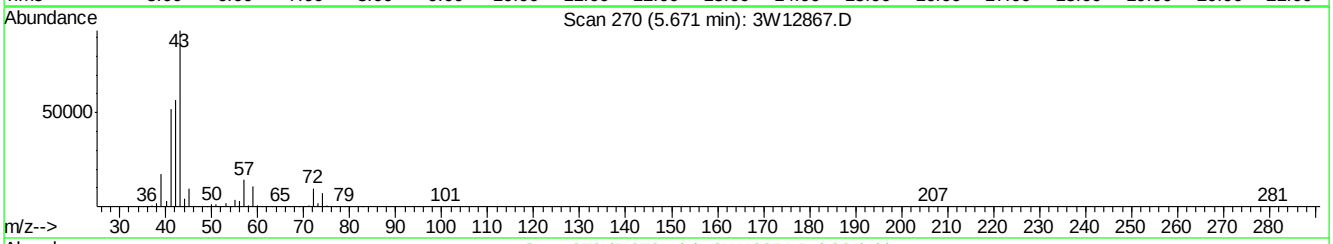
ACCUTEST Laboratories JA28238

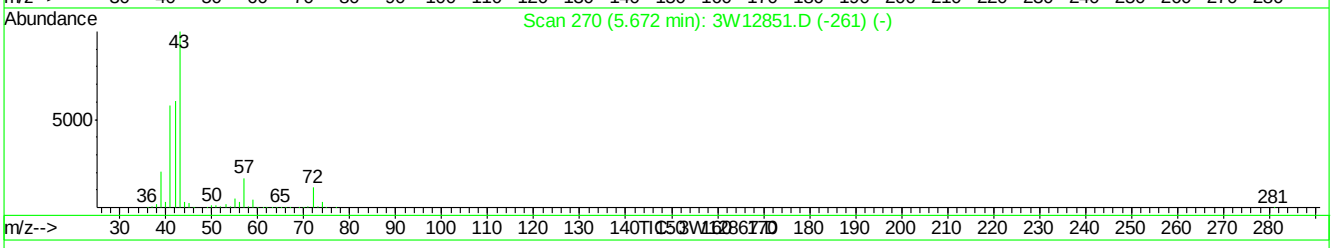
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:30 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.66PPBV m

response 881397

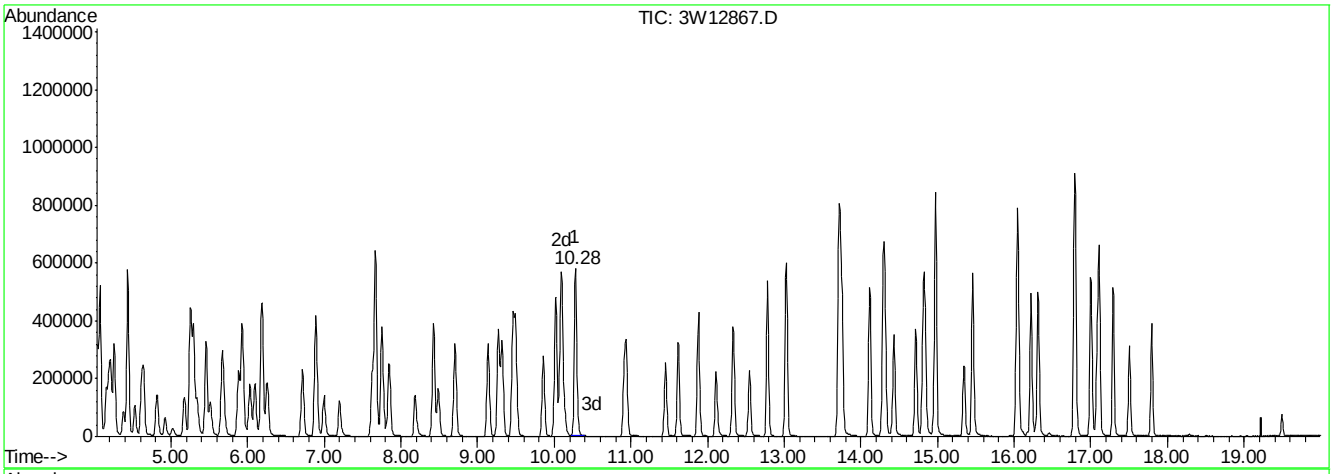
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.01#
0.00	0.00	0.00
0.00	0.00	0.00

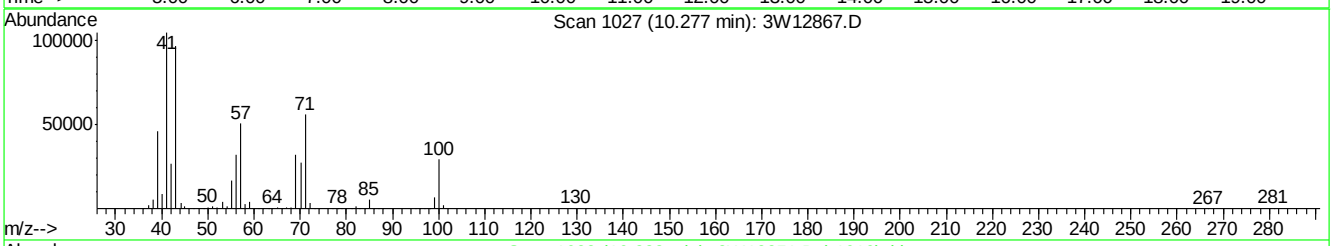
3W12867.D M3W523.M Tue Oct 06 13:02:10 2009 MS3W

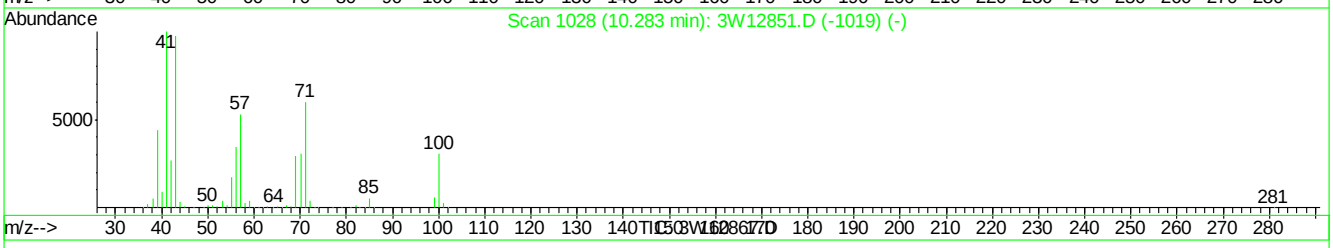
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:30 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.28min 11.15PPBV m

response 1398909

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.01#
0.00	0.00	0.00
0.00	0.00	0.00

3W12867.D M3W523.M Tue Oct 06 13:02:14 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	95784	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	413899	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	194989	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	194989	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	105871	5.18	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 103.60%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	248315	8.83	PPBV	96
3) FREON 152A	4.16	65	85161	9.62	PPBV	98
4) CHLORODIFLUOROMETHANE	4.19	67	37104	8.64	PPBV	96
5) DICHLORODIFLUOROMETHANE	4.26	85	337424	8.74	PPBV	100
6) PROPANE	4.23	43	46797	9.79	PPBV	100
7) PROPYLENE	4.21	41	137362	10.05	PPBV	98
8) FREON 114	4.44	85	370213	9.13	PPBV	97
9) CHLOROMETHANE	4.38	50	121560	8.71	PPBV	99
10) VINYL CHLORIDE	4.53	62	141331	10.17	PPBV	100
11) 1,3-BUTADIENE	4.62	54	104530	10.54	PPBV	98
12) n-BUTANE	4.64	43	207799	9.62	PPBV	99
13) BROMOMETHANE	4.82	94	134361	9.76	PPBV	99
14) CHLOROETHANE	4.92	64	75475	10.51	PPBV	99
15) FREON 123	5.26	83	312099	10.20	PPBV	99
16) FREON 123A	5.29	117	185857	9.68	PPBV	91
17) TRICHLOROFLUOROMETHANE	5.46	101	350879	9.09	PPBV	100
18) ISOPROPYL ALCOHOL	5.52	45	193157	10.62	PPBV	97
19) ACETONE	5.34	58	55160	10.23	PPBV	92
20) PENTANE	5.67	42	142947	10.93	PPBV	95
21) TVHC as EQUIV PENTANE	5.67	TIC	892082m	12.01	PPBV	
22) ETHYL ETHER	5.70	74	56560	10.69	PPBV	99
23) IODOMETHANE	5.88	142	357370	9.70	PPBV	97
24) 1,1-DICHLOROETHYLENE	5.93	96	119748	9.51	PPBV	99
25) CARBON DISULFIDE	6.26	76	364133	9.77	PPBV	99
26) ETHANOL	5.03	45	41554	9.60	PPBV	99
27) BROMOETHENE	5.18	106	131284	9.89	PPBV	98
28) METHYLENE CHLORIDE	6.03	84	107173	9.27	PPBV	94
29) 3-CHLOROPROPENE	6.10	76	55581	10.45	PPBV #	93
30) FREON 113	6.19	151	212480	9.40	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	124082	9.59	PPBV	96
32) TERTIARY BUTYL ALCOHOL	5.94	59	245937	11.59	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	313462	9.95	PPBV	97
34) TETRAHYDROFURAN	8.18	72	50388	10.93	PPBV	91
35) HEXANE	7.67	57	187433	10.74	PPBV	99
36) VINYL ACETATE	7.00	86	23941	11.14	PPBV #	77
37) 1,1-DICHLOROETHANE	6.89	63	232243	10.39	PPBV	99
38) METHYL ETHYL KETONE	7.20	72	48824	10.65	PPBV #	86
39) cis-1,2-DICHLOROETHYLENE	7.63	96	123151	9.63	PPBV	96
40) DIISOPROPYL ETHER	7.67	45	342683	11.46	PPBV	99
41) ETHYL ACETATE	7.75	61	29650	10.03	PPBV #	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.85	83	258226	9.73	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.43	57	213908	10.78	PPBV		99
44)	1,1,1-TRICHLOROETHANE	8.71	97	270721	9.51	PPBV		98
45)	CARBON TETRACHLORIDE	9.27	117	287630	9.68	PPBV		100
46)	1,2-DICHLOROETHANE	8.49	62	178473	10.30	PPBV		100
48)	BENZENE	9.14	78	368521	10.65	PPBV		99
49)	CYCLOHEXANE	9.32	56	187085	10.85	PPBV	#	80
50)	2,3-DIMETHYLPENTANE	9.50	71	79331	10.23	PPBV		96
51)	TRICHLOROETHYLENE	10.10	95	163202	10.42	PPBV		98
52)	1,2-DICHLOROPROPANE	9.86	63	131324	10.54	PPBV		94
53)	BROMODICHLOROMETHANE	10.08	83	268533	11.12	PPBV		100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	562488	11.04	PPBV		99
55)	1,4-DIOXANE	10.14	88	68093	9.98	PPBV		92
56)	HEPTANE	10.28	43	222782	11.01	PPBV		96
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1449604m	11.13	PPBV		
58)	METHYL METHACRYLATE	10.29	69	103126	11.41	PPBV		94
59)	METHYL ISOBUTYL KETONE	10.92	43	225399	12.08	PPBV		97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	196431	11.23	PPBV		99
61)	TOLUENE	11.88	92	248573	10.81	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	184275	11.41	PPBV		98
63)	1,1,2-TRICHLOROETHANE	11.62	83	118555	11.22	PPBV		98
65)	2-HEXANONE	12.11	43	207338	12.38	PPBV		97
66)	TETRACHLOROETHYLENE	13.03	164	191081	9.31	PPBV		98
67)	DIBROMOCHLOROMETHANE	12.33	129	267126	11.27	PPBV		99
68)	1,2-DIBROMOETHANE	12.55	107	205031	10.93	PPBV		100
69)	OCTANE	12.78	43	288898	11.17	PPBV		94
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	192225	9.85	PPBV		100
71)	CHLOROBENZENE	13.76	112	318926	10.15	PPBV		99
72)	ETHYLBENZENE	14.12	91	498778	10.42	PPBV		100
73)	m,p-XYLENE	14.30	106	382379	21.10	PPBV		99
74)	o-XYLENE	14.82	106	184522	10.70	PPBV		100
75)	STYRENE	14.72	104	253301	11.47	PPBV		100
76)	NONANE	14.97	43	271169	11.39	PPBV		97
77)	BROMOFORM	14.43	173	239101	11.42	PPBV		99
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	234447	10.64	PPBV		99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	184972	10.77	PPBV		95
81)	ISOPROPYLBENZENE	15.46	105	519454	10.23	PPBV		100
82)	2-CHLOROTOLUENE	16.04	126	122559	10.72	PPBV		100
83)	n-PROPYLBENZENE	16.05	120	134349	10.07	PPBV		99
84)	4-ETHYLTOLUENE	16.22	105	444717	10.16	PPBV		99
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	372500	10.11	PPBV		100
86)	tert-BUTYLBENZENE	16.79	134	94897	9.72	PPBV		99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	342315	10.38	PPBV		99
88)	m-DICHLOROBENZENE	17.01	146	216925	10.27	PPBV		99
89)	BENZYL CHLORIDE	17.00	91	225006	11.13	PPBV		98
90)	p-DICHLOROBENZENE	17.08	146	200359	9.97	PPBV		99
91)	sec-BUTYLBENZENE	17.11	134	109108	9.89	PPBV		94
92)	p-ISOPROPYLTOLUENE	17.29	134	107525	9.59	PPBV		99
93)	o-DICHLOROBENZENE	17.50	146	195150	10.19	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

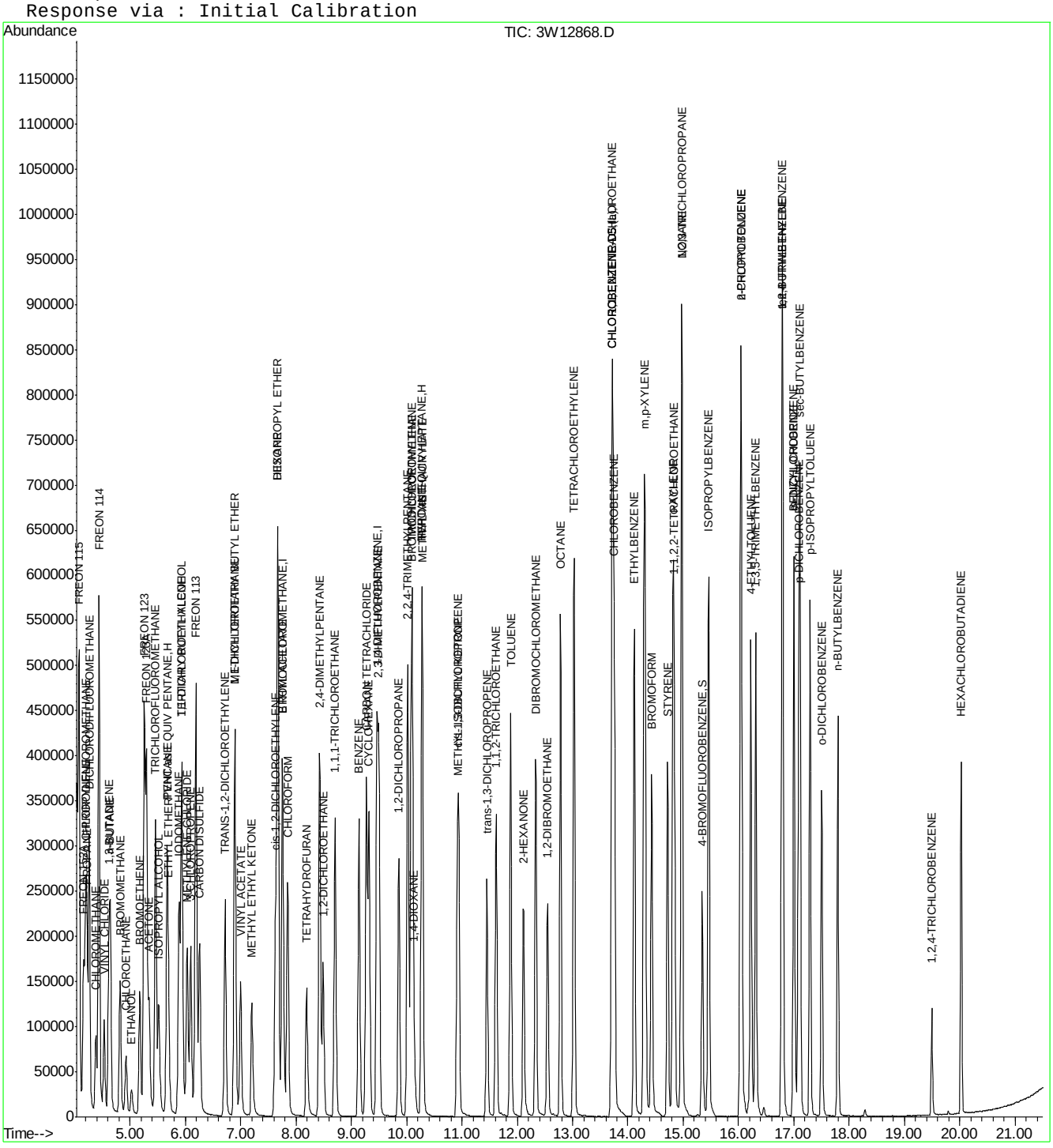
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	79800	10.92	PPBV	91
95)	HEXACHLOROBUTADIENE	20.03	225	86805	11.60	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.49	180	46397	12.71	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

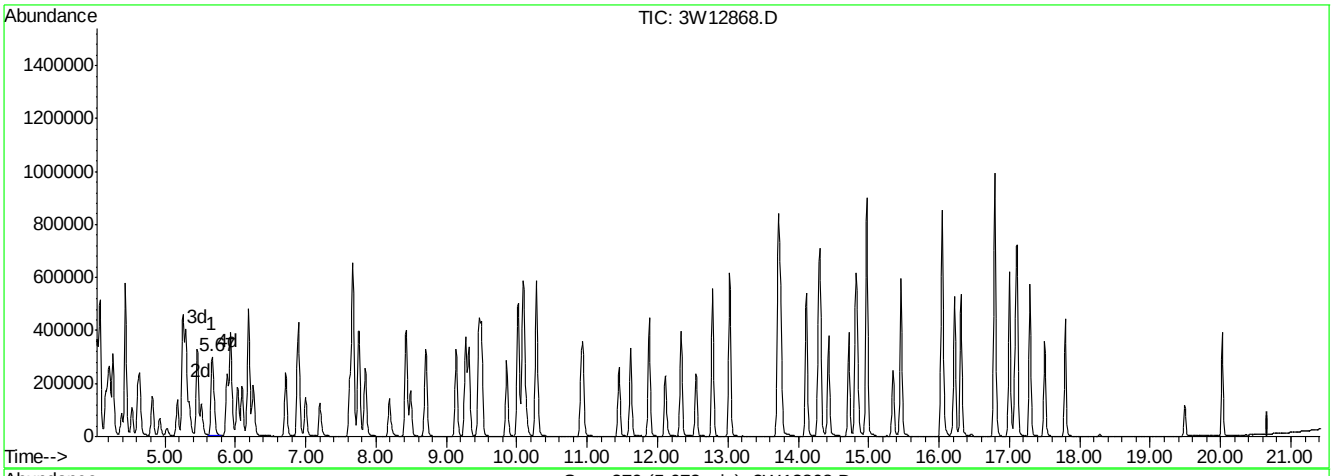


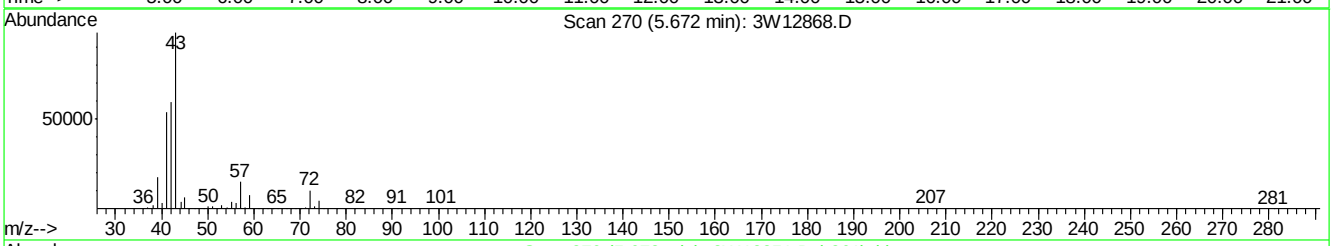
ACCUTEST Laboratories JA28238

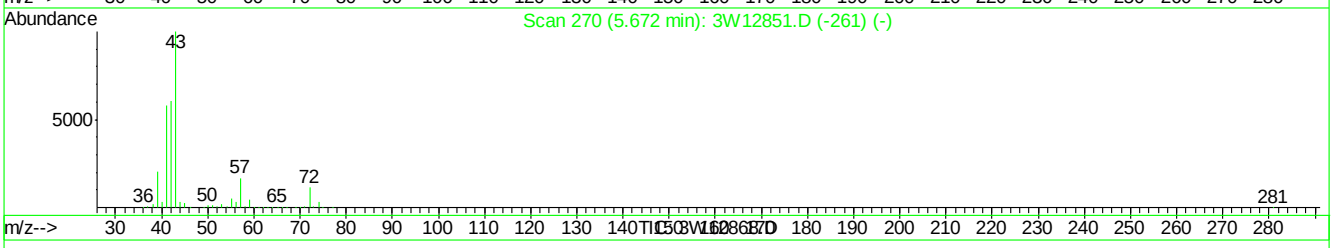
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.01PPBV m

response 892082

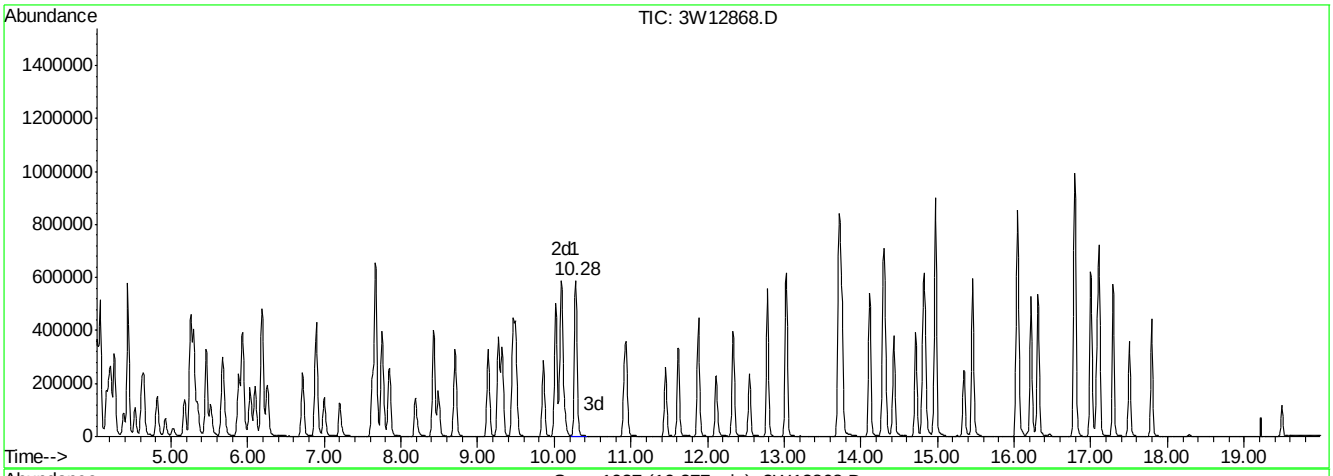
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:07 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 11.13PPBV m

response 1449604

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:10 2009 MS3W

ACCUTEST

TO-14/TO-15

Batch ID: V2W1070

Date: 9/5/09

Analyst Signature: [signature]

Columns: RTX-1 60M X.32mm ID

Method: TO15 2W.M

Seq. File: 2W090509.S

Initial Cal. Method: M2W1070

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.
AS 4004	IS/Surr	40/20ppbv

Standard Data

Lot #	Description	Conc.
AS4018	TO15STD	40ppbv
AS4019	TO15STD	2.0ppbv
AS4020	TO15STD	0.4ppbv
AS4017	TO15LCS	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/9/09.

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25355	BFB		A777	100					OK	
2	2W25356	ICC1070-10		A663	100			✓	✓	OK	
1	2W25357	IC1070-0.5		A669	100			✓	✓	OK	
2	2W25358	IC1070-5.0		A663	50			✓	✓	notused	
1	2W25359	IC1070-0.2		A669	40			✓	✓	OK	
2	2W25360	IC1070-20		A663	200			✓	✓	OK	
2	2W25361	IC1070-5.0		A663	50			✓	✓	OK	
4	2W25362	IC1070-0.1		A855	100			✓	✓	OK	
4	2W25363	IC1070-0.04		A855	40			✓	✓	OK	
2	2W25364	IC1070-40		A663	400			✓	✓	OK	
					YH						

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: V2W1071

Date: 9/6/09

Analyst Signature: [signature]

Columns: RTX-1 60MX.32mmID

Method: TO15 2W.M

Seq. File: 2W090609.S

Initial Cal. Method: M2W1070

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4018	TO15STD	40ppbv
AS4017	TO15LCS	40ppbv
AS4004	IS/Surr	40/20ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/9/09.

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25365	BFB		A777	100					OK	
2	2W25366	CC1070-10		A663	100			—	✓	OK	
3	2W25367	BS		A816	100			—	—	OK	
3	2W25368	BSD		A816	100			—	—	OK	
5	2W25369	MB		A885	400			—	—	OK	
6	2W25370	JA26463-1	STD+	Airbag	100	1		—	—	OK	
7	2W25371	JA26463-2	↓	Airbag	100	1		—	—	OK/DL	RR 2x
8	2W25372	JA26463-3	↓	Airbag, A580	80	100		—	—	OK	
9	2W25373	JA26463-4	↓	Airbag	100	1		—	—	OK/DL	RR 5x
10	2W25374	JA26506-1	STD	A133	400	1		—	—	RR	possible c/o
11	2W25375	~~JA256~~ JA26506-2	↓	A464	400	1		—	—	OK	
12	2W25376	JA26506-3	↓	A766	400	1		—	—	OK	
13	2W25377	JA26506-4	↓	A099	400	1		—	—	OK	
13	2W25378	JA26506-40up	↓	A099	400	1		—	—	OK	
14	2W25379	JA26506-5	↓	A644	400	1		—	—	OK	
15	2W25380	JA26506-6	↓	A238	400	1		—	—	OK	
16	2W25381	JA26506-7	↓	A092	400	1		—	—	OK	
1	2W25382	JA26506-8	↓	A135	400	1		—	—	OK	
3	2W25383	JA26024-1	STD	A744, A506	100	120		—	—	OK	
4	2W25384	JA26024-2	↓	A647, A785	100	23		—	—	OK	
6	2W25385	JA26082-1	STD	A843	400	1		—	↑	OK/DL	RR 10x
7	2W25386	JA26151-1	STD	A769	100	1		—	—	RR	c/o RR 2x
8	2W25387	JA26160-1	STD	A892	400	1		—	—	OK/DL	RR 2x
9	2W25388	JA26160-2	↓	A476	400	1		—	—	OK	
5	2W25389	SCC		A496	400	1		✓	✓	OK	
	2W25390										

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/6/09	YH	JA26463-3	Airbag	0	0	1	A 580	1000	20	14.7	2000	100	100
9/6/09	YH	JA26024-1	A744	-3.0	1.2	1.2	A506	1000	20	14.7	2000	100	120
9/6/09	YH	JA26024-2	~~A785~~ A64	-2.0	1.1	1.15	A 785	1000	100	14.7	2000	20	23

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalclulation, # 4 = Analyst's Correction Error

38 Form: AT003-03

TO-14/TO-15

ACCUTEST

Batch ID: V2W1073

Date: 9/9/09

Analyst Signature: [signature]

Columns: RTX-1 60M X.32mmID

Method: TO15 2W.M

Seq. File: 2W090909.S

Initial Cal. Method: M2W1070

AS Data

Method:	TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4018	TO15STD	40ppbv
AS4017	TO15LCS	40ppbv
AS4004	IS/SURR	40/20ppbv

6.8.3 6

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/10/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25417	BFB		A885	100					OK	
2	2W25418	CC1070-10		A663	100			✓	✓	~~OK~~	not used
2	2W25419	CC1070-10		A663	100			✓	✓	OK	
3	2W25420	BS		A816	100			✓	✓	OK	
3	2W25421	BSD		A816	100			✓	✓	OK	
5	2W25422	MB		A885	400			✓	✓	OK	
6	2W25423	JA26463-2	STD+	Airbag	40	1		✓	✓	OK	
7	2W25424	JA26463-4	↓	Airbag, A496	200	20		✓	✓	OK	
8	2W25425	SCC		A817	400	1		✓	✓	OK	
9	2W25426	JA26711-1	STD	A815	620	1.55		✓	✓	OK	
10	2W25427	JA27379-1	STD	Airbag, A419	80	100		✓	✓	OK	
11	2W25428	JA27379-2	↓	Airbag, A537	80	100		✓	✓	OK	
12	2W25429	JA27379-3	↓	Airbag, A593	80	100		✓	✓	OK	
13	2W25430	JA27379-5	↓	Airbag, A714	80	100		✓	✓	OK	
14	2W25431	JA26160-3	STD	A758	400	1		✓	✓	OK/DL	DL RR 16ml
15	2W25432	JA26160-4	↓	A325	400	1		✓	✓	OK	
16	2W25433	JA26160-5	↓	A321	592	1.48		✓	✓	OK	
16	2W25434	JA26160-5Dup	↓	A321	592	1.48		✓	✓	OK	
1	2W25435	JA26160-6	↓	A716	200	1		✓	✓	OK	
3	2W25436	JA26160-7	↓	A427	200	1		✓	✓	OK	
4	2W25437	JA26160-8	↓	A428	200	1		✓	✓	OK	
6	2W25438	JA27422-1	STD	A281, A573	200	27.5		✓	↑	OK	RR for CF
7	2W25439	JA26161-1	STD	A673	400	1		✓	✓	OK	
8	2W25440	JA26161-2	↓	A364	400	1		✓	✓	OK	
9	2W25441	JA26161-3	↓	A486	400	1		✓	✓	OK	
10	2W25442	JA26161-4	↓	A851	400	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

5	2W25443	SCC	A590	400	1		✓	✓	OK

Form: AT008-04

Rev. Date: 6/13/06

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/9/09	YH	JA26463-4	Airbag	0	0	1	A496	1000	100	14.7	2000	20	20
9/9/09	YH	JA27379-1	Airbag	0	0	1	A419	1000	20	14.7	2000	100	100
9/9/09	YH	JA27379-2	Airbag	0	0	1	A537	1000	20	14.7	2000	100	100
9/9/09	YH	JA27379-3	Airbag	0	0	1	A593	1000	20	14.7	2000	100	100
9/9/09	YH	JA27379-5	Airbag	0	0	1	A714	1000	20	14.7	2000	100	100
9/9/09	YH	JA27422-1	A281	-0.5	1.2	1.1	A573	1000	80	14.7	2000	25	22.5

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

ACCUTEST

TO-14/TO-15

Batch ID: V2W 1075

Date: 09/11/2009

Analyst Signature: RKJ

Columns: RTx-1, 60mx0.32mmx1.0um
Method: TO15 2W. M
Seq. File: 2W091109.S
Initial Cal. Method: M2W1070

AS Data

Method: TO15. MPT

Standard Data

Lot #	Description	Conc.

Standard Data

	Lot #	Description	Conc.
AS	4004	IS/Surr	40/200ppbv
AS	4018	TO15 STD	40ppbv
AS	4017	TO15 LCS	40ppbv

6.8.4 6

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/14/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25471	BFB		A885	100					OK	
2	2W25472	CC 1070-10		A663	100			✓	✓	OK	
3	2W25473	BS		A816	100			✓	✓	OK	
3	2W25474	BSD		A816	100			✓	✓	OK	
5	2W25475	MB		A885	400			✓	✓	OK	
6	2W25476	JA26162-1CF	STD	A404	20	1		✓	↑	OK	
7	2W25477	JA26162-2CF	↓	A501, A681	200	29		✓	↑	OK	
8	2W25478	JA26162-3	↓	A504, A394	100	31		✓	✓	OK	
9	2W25479	JA27262-4	SL	A460	100	1		✓	✓	OK	
10	2W25480	JA27262-2	↓	A510	100	1		✓	✓	OK	
11	2W25481	JA27262-3	↓	A572	100	1		✓	✓	OK	
12	2W25482	SCC		A674	400	1		✓	✓	OK	
13	2W25483	JA26852-1	STD	A277, A549	160	23		✓	✓	OK	RR 50ml
13	2W25484	JA26852-10up	↓	A277, A549	160	23		✓	✓	OK	
14	2W25485	JA26852-2	↓	A468	100	1		✓	✓	OK	
15	2W25486	JA26852-3	↓	A359	100	1		✓	✓	OK	
16	2W25487	JA26958-1	BTXM	A411	YH ~~LAS~~	1.13		✓	✓	OK	113ml
1	2W25488	JA26958-2	↓	A712	YH ~~LAS~~	1.13		✓	✓	OK	113ml
3	2W25489	JA26879-1	STD+	A353	400	1		✓	✓	OK	
4	2W25490	JA26879-2	↓	A475	400	1		✓	✓	OK	
6	2W25491	JA26879-3	↓	A340	400	1		✓	✓	OK	
7	2W25492	JA26879-4	↓	A661	400	1		✓	✓	OK	
8	2W25493	JA26879-5	↓	A856	50	1		✓	✓	YH ~~LAS~~ RR	RR 100ml tentativeted
9	2W25494	JA26879-6	↓	A826	100	1		✓	✓	OK	
10	2W25495	JA27118-1	STD	A780	20	1		✓	✓	OK	
11	2W25496	JA27118-2	↓	A898	80	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/11/09	YH	JA26852-1	A277	-2.0	1.1	1.15	A549	1000	100	14.7	2000	20	23

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalclulation, # 4 = Analyst's Correction Error

Form: AT003-03

ACCUTEST

TO-14/TO-15

Batch ID: V2W1075

Date: 9/11/09

Analyst Signature: [illegible]

Columns: RTX-1 60M X.32mm ID

Method: TO15 2W.M

Seq. File: 2W091109.S

Initial Cal. Method: M2W1070

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS 4004	IS/SURR	40/20ppbv
AS 4018	TO15 STD	40ppbv
AS 4017	TO15 CCS	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 9/14/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
12	2W25497	~~A6~~ YH	STD	A639	20	1		✓	✓	OK	JA27118-3
5	2W25498	SCC		A886	400	1		✓	✓	RR	Carryover
						YH					

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: V2W1080

Date: 9/22/09

Analyst Signature: [illegible]

Columns: RTX-1 60MX.32mmID

Method: TO15 2W.M

Seq. File: 2W092209.S

Initial Cal. Method: M2W1080

AS Data

Method:	TO15.MPT

Standard Data

Lot #	Description	Conc.
AS 4004	IS/Surr	40/20ppbv
AS 4047	Naphthalene	40ppbv
AS 4048	Naphthalene	20ppbv

Standard Data

Lot #	Description	Conc.
AS 4050	TO15STD	40ppbv
AS 4051	TO15STD	2.0ppbv
AS 4052	TO15STD	0.4ppbv
AS 4049	TO15LCS	40ppbv

6.8.5

6

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 9/28/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25643	BFB		A777	100					ok	
2	2W25644	ICC1080-10		A663	100			✓	✓	ok	
1	2W25645	IC1080-0.5		A460	100			✓	✓	ok	
2	2W25646	IC1080-5.0		A663	50			✓	✓	ok	
1	2W25647	IC1080-0.2		A460	40			✓	✓	ok	
2	2W25648	IC1080-20		A663	200			✓	✓	ok	
2	2W25649	IC1080-5.0		A663	50			✓	✓	notused	
4	2W25650	IC1080-0.1		A331	100			✓	✓	ok	
4	2W25651	IC1080-0.04		A331	40			✓	✓	ok	
6	2W25652	Nap-5.0		A636	50			✓	✓	ok	
6	2W25653	Nap-10		A636	100			✓	✓	ok	
2	2W25654	IC1080-40		A663	400			✓	✓	ok	
7	2W25655	Nap-0.5		A737	100			✓	✓	ok	
7	2W25656	Nap-0.2		A737	40			✓	✓	ok	
6	2W25657	Nap-20		A636	200			✓	✓	ok	
6	2W25658	Nap-40		A636	400					notused	instrumentstopped
					YH						

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: ~~V2W1080~~ V2W1081

Date: 9/24/09

Analyst Signature: [signature]

Columns: RTX-1 60M X .32mm ID

Method: TO15W.M

Seq. File: 2W092409.S

Initial Cal. Method: M2W1080

AS Data

Method:	TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4050	TO15STD	40ppbv
AS4049	TO15LCS	40ppbv
AS4047	Naphthalene	40ppbv
AS4004	IS/SURR	40/200ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/28/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25659	BFB		A885	100					OK	
2	2W25660	CC1080-10		A663	100			✓	✓	OK	
6	2W25661	Nap-10		YH ~~AS~~ A274	100			✓	✓	OK	
3	2W25662	BS		A816	100			✓	✓	OK	
3	2W25663	BSD		A816	100			✓	✓	OK	
5	2W25664	MB/SCC		A234	400			✓	✓	OK	
6	2W25665	JA27234-1	BTXMN	A106, A380	100	125		✓	✓	RR	RR 100X
7	2W25666	JA27234-2	↓	A482	100	1		✓	✓	OK	
8	2W25667	JA27234-3		A324	100	1		✓	✓	OK	
8	2W25668	JA27234-30uM		A324	100	1		✓	✓	OK	
9	2W25669	JA27234-4		A876	100	1		✓	✓	OK	
10	~~2W25667~~	JA28631-1	STD	A389	40	1		✓	✓	~~OK~~ RR	2W25670
11	2W25671	JA28631-2		A597	40	1		✓	✓	~~OK~~ RR	
12	2W25672	JA28631-3		A871	80	1		✓	✓	~~OK~~ RR	
13	2W25673	JA28486-1	STD	A405, A686	100	22.4		✓	✓	~~OK~~ RR	OK YH
14	2W25674	JA28486-2		A785	112	1.12		✓	✓	OK/DL	RR ~~20ml~~ 50X
15	2W25675	JA28486-3		A620	112	1.12		✓	✓	OK/DL	RR 20ml
16	2W25676	JA28486-4		A569	112	1.12		↑	✓	RR	RR 20ml
1	2W25677	JA28486-5		A527	112	1.12		↑	✓	RR	RR 50ml
3	2W25678	JA28486-6		A555	110	1.10		↑	✓	RR	RR 5ml
4	2W25679	JA28486-7	↓	A621	112	1.12		↑	✓	RR	RR 20ml
5	2W25680	SCC		A562	400	1		↑	✓	RR	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/24/09	YH	JA27234-1	A106	-4.0	1.2	1.25	A380	1000	20	14.7	2000	100	125
9/24/09	YH	JA28486-1	A405	-1.0	1.2	1.12	A686	1000	100	14.7	2000	20	22.4

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

62 Form: AT003-03
Rev. Date: 6/13/06

TO-14/TO-15

ACCUTEST

Batch ID: V2W1083

Date: 9/28/04

Analyst Signature: [illegible]

Columns: RTX-1 60M X 32mm ID

Method: T015 2W.M

Seq. File: 2W092804.S

Initial Cal. Method: M2W1080

AS Data

Method:	T015.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS 4050	T015 STD	40ppbv
AS 4049	T015 LCS	40ppbv
AS 4004	IS/SURR	40/20ppbv

6.8.7 6

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 9/29/04

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25708	BFB		A849	100					OK	
2	2W25709	CC1080-10		A663	100			✓	✓	OK	
3	2W25710	BS		A816	100			✓	✓	OK	
3	2W25711	BSD		A816	100			✓	✓	OK	
5	2W25712	MB/SCC		~~A562~~	400			✓	✓	OK	A268
6	2W25713	JA28486-7	STD	A621,A572	100	22.4		✓	✓	OK	
7	2W25714	JA28624-2	STD	A751,A704	200	22.4		✓	✓	OK	
8	2W25715	JA27385-2	STD	A293	50	1.48		✓	✓	OK	
9	2W25716	JA28629-3	STD	A660	100	1		✓	✓	OK	
10	2W25717	JA28271-1	STD	A240,A797	100	220		✓	✓	OK	
11	2W25718	JA28271-2		A748,A567	100	220		✓	✓	OK	
12	2W25719	JA28271-3		A848,A684	100	310		✓	✓	RR	RR50DX
13	2W25720	JA28271-4		A303	20	1		✓	✓	OK/DL	RR50X
14	2W25721	JA28271-5		A873	20	1		✓	✓	OK/DL	RR50X
14	2W25722	JA28271-5Dup		A873	20	1		✓	✓	OK	
15	2W25723	JA28271-6		A448	20	1		✓	✓	OK/DL	RR50X
16	2W25724	JA27920-1	SL2	A323	400	1		✓	✓	OK	
1	2W25725	JA28269-1	SL2	A263	400	1		✓	✓	OK	
3	2W25726	JA28238-1	STD	A101	400	1		✓	✓	OK	
4	2W25727	JA28238-2		A195	400	1		✓	✓	OK	
6	2W25728	JA28238-3		A332	400	1		✓	✓	OK	
7	2W25729	JA28238-4		A193	400	1		✓	✓	~~HIGH~~ RR	
8	2W25730	JA28238-5		A882	400	1		✓	✓	OK	
9	~~3~~2W25731	JA28238-6		A169	400	1		✓	✓	OK	
5	2W25732	SCC		A742	400	1		✓	✓	RR	Out of BFB Time
	~~2W25733~~										

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/28/09	YH	JA28486-7	A621	-1.0	1.2	1.12	A572	1000	100	14.7	2000	20	22.4
9/28/09	YH	JA28624-2	A751	-1.0	1.2	1.12	A704	1000	100	14.7	2000	20	22.4
9/28/09	YH	JA28271-1	A240	-0.5	1.2	1.1	A797	1000	10	14.7	2000	200	220
9/28/09	YH	JA28271-2	A748	-0.5	1.2	1.1	A567	1000	10	14.7	2000	200	220
9/28/09	YH	JA28271-3	A848	-9.0	1.2	1.55	A684	1000	10	14.7	2000	200	310

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT003-03
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: V2W1084

Date: 9/29/09

Analyst Signature: [signature]

Columns: RTX-1 60M X .32mm ID

Method: TO15 2W.M

Seq. File: 2W092909.S

Initial Cal. Method: M2W1080

AS Data

Method:	TO15MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS 4050	TO15STD	40ppbv
AS 4049	TO15LCS	40ppbv
AS 4004	IS/Surr	40/20ppbv

6.8.8 9

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/30/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25733	BFB		A849	100					OK	
2	2W25734	CC1080-10		A663	100			✓	✓	nitused	
2	2W25735	CC1080-10		A663	100			✓	✓	OK	
3	2W25736	BS		A816	100			✓	✓	OK	
3	2W25737	BSD		A816	100			✓	✓	OK	
5	2W25738	MB/SCC		A742	400			✓	✓	OK	
6	2W25739	JA29024-1	STD+	A827	400	1		✓	✓	OK	
7	2W25740	JA29024-2	↓	A761	400	1		✓	✓	OK	
8	2W25741	JA29024-3	↓	A316	400	1		✓	✓	OK	
9	2W25742	JA29024-4	↓	A836	400	1		✓	✓	OK	
10	2W25743	JA28271-3	STD	A848, A684	200	3.10		✓	✓	OK	
11	2W25744	JA28271-4	↓	A303, A414	200	22.4		✓	✓	OK	
12	2W25745	JA28271-5	↓	A873, A534	200	22.6		✓	✓	OK	
13	2W25746	JA28271-6	↓	A448, A683	200	23		✓	✓	OK	
14	2W25747	JA28238-4	STD	A193	400	1		✓	✓	OK	
15	2W25748	JA27891-10	STD	A788	100	1		✓	✓	OK	
16	2W25749	JA28598-1	STD	A188, A598	200	22.6		✓	✓	OK	
1	2W25750	JA28598-2	↓	A441	100	1		✓	✓	OK	
1	2W25751	JA28598-2 Dup	↓	A441	100	1		✓	✓	OK	
3	2W25752	JA28598-3	↓	A467	100	1		✓	✓	OK/OL	RR50X
4	2W25753	JA28550-1	STD	A265	400	1		✓	✓	OK/OL	RR 40ml
6	2W25754	JA28550-2	↓	A627	400	1		✓	✓	OK	
7	2W25755	JA28550-3	↓	A442	400	1		✓	✓	OK	
8	2W25756	JA28550-4	↓	A059	400	1		✓	✓	OK	
9	2W25757	JA28550-5	↓	A486	400	1		✓	✓	OK	
5	2W25758	SCC		A813	400	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/29/09	YH	JA28771-4	A303	-1.0	1.2	1.12	A414	1000	100	14.7	2000	20	22.4
9/29/09	YH	JA28771-5	A873	-1.5	1.0	1.13	A534	1000	100	14.7	2000	20	22.6
9/29/09	YH	JA28771-6	A448	-2.0	1.1	1.15	A683	1000	100	14.7	2000	20	23
9/29/09	YH	JA28598-1	A188	-1.5	1.0	1.13	A598	1000	100	14.7	2000	20	22.6

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT003-03

ACCUTEST

TO-14/TO-15

Batch ID: V2W1085

Date: 10/2/09

Analyst Signature: [illegible]

Columns: RTX-160MX.32mmID

Method: TO15W.M

Seq. File: 2W100209.S

Initial Cal. Method: M2W1085

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.
AS 4084	IS/surr	40/20ppbv
AS 4070	Naphthalene	40ppbv
AS 4071	Naphthalene	2.0ppbv

Standard Data

Lot #	Description	Conc.
AS 4072	TO15 LCS	40ppbv
AS4073	TO15 STD	40ppbv
AS4074	TO15 STD	2.0ppbv
AS 4075	TO15 STD	0.4ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 10/2/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25759	BFB		A885	100					OK	
2	2W25760	CC1080-10		A663	100					NG	
5	2W25761	8YMBFB		A885	100					OK	
2	2W25762	CC1080-10		A663	100					NG	
5	2W25763	BFB		A885	100					OK	
10	2W25764	ICC1085-10		A663	100			✓	✓	OK	
9	2W25765	IC1085-0.5		A742	100			✓	✓	OK	
10	2W25766	IC1085-5.0		A663	50			✓	✓	OK	
9	2W25768/7	IC1085-0.2		A742	40			✓	✓	OK	
10	2W25768/8	IC1085-20		A663	200			✓	✓	OK	
10	2W25769	IC1085-5.0		A663	50			✓	✓	intusal	
12	2W25770	IC1085-0.1		A331	100			✓	✓	OK	
12	2W25771	IC1085-0.04		A331	40			✓	✓	OK	
14	2W25772	Nap-5.0		A636	50			✓	✓	OK	
14	2W25773	Nap-10		A636	100			✓	✓	OK	
10	2W25774	IC1085-40		A663	400			✓	✓	OK	
15	2W25775	Nap-0.5		A737	100			✓	✓	OK	
15	2W25776	Nap-0.2		A737	40			✓	✓	OK	
14	2W25777	Nap-20		A636	200			✓	✓	OK	
14	2W25778	Nap-40		A636	400			✓	✓	OK	
5	2W25779	SCC		A441	400			✓	✓	OK	
6	2W25780	SCC		A293	400			✓	✓	RR	
7	2W25781	SCC		A425	400			✓	✓	RR	
					YH						

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

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Form: AT008-04
Rev. Date: 6/13/06

6.8.9

ACCUTEST

TO-14/TO-15

Batch ID: V2W1086

Date: 10/5/09

Analyst Signature: [illegible] 7/4

Columns: RTX-1 60M X .32mm ID

Method: TO15 2W.M

Seq. File: 2W100509.S

Initial Cal. Method: M2W1085

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4073	TO15STD	40ppbv
AS4072	TO15LCS	40ppbv
AS4084	IS/SURR	40/20ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 10/5/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25782	EFB		A885	100					OK	
2	2W25783	CC1085-10		A663	100			✓	✓	OK	
3	2W25784	BS		A837	100			✓	✓	OK	
3	2W25785	BSD		A837	100			✓	✓	OK	
5	2W25786	MB/SCC		A827	400			✓	✓	OK	
6	2W25787	JA28238-7	STD	A225	400	1		✓	✓	OK	
7	2W25788	JA28238-8	↓	A745	400	1		✓	✓	OK	
8	2W25789	JA28238-9		A502	50	1		✓	✓	OK	
9	2W25790	JA28238-10		A400	50	1.53		✓	✓	OK/DL	RR50X
10	2W25791	JA28238-11		A594	100	1		✓	✓	OK/DL	RR40ml
11	2W25792	JA28238-12		A422	148	1.48		✓	✓	OK/DL	RR50ml
12	2W25793	JA28238-13	↓	A730	100	1		✓	✓	OK/DL	RR40ml
13	2W25794	JA28739-1	STD	A864	100	1		✓	✓	OK	
13	2W25795	JA28739-2 1:4	↓	A864	100	1		✓	✓	OK	
14	2W25796	JA28739-2		A889	100	1		✓	✓	OK	
15	2W25797	JA28739-3		A671	100	1		✓	✓	OK	
16	2W25798	JA28739-4	↓	A456	148	1.48		✓	✓	OK	
1	2W25799	JA28238-10	STD	A400, A425	200	43		✓	✓	OK	
3	2W25800	JA28238-11	↓	A594	40	1		✓	✓	OK	
4	2W25801	JA28238-12	↓	A422	50	1.48		✓	✓	OK	
6	2W25802	JA28238-13	↓	A730	40	1		✓	✓	OK	
7	2W25803	JA29328-1	STD	A865	400	1		✓	✓	OK	
8	2W25804	JA29328-2	↓	A216	400	1		✓	✓	OK	
9	2W25805	JA28515-1	STD	A444	400	1		✓	✓	OK	
10	2W25806	JA28515-2	↓	A471	400	1		✓	✓	OK	
11	2W25807	JA28515-3	↓	A485	400	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

5	2W25808	SCC	A608	400	1		↓		AR

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Form: AT008-04

Rev. Date: 6/13/06

6.8.10 6

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
10/5/09	YH	JA28238-10	A400	-15.0	1.1	2.15	A425	1000	100	14.7	2000	20	43
10/													

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalclulation, # 4 = Analyst's Correction Error

Form: AT003-03
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: V3W523

Date: 10/02/2009

Analyst Signature: RT

Columns: RTX-1, 60m/0.32mm/1.0um

Method: TO153W.M

Seq. File: 3W100209.S

Initial Cal. Method: M3W518

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.
AS 4065	IS/Surr	40/20ppbv
AS 4076	Naphthalene	40ppbv
AS 4077	Naphthalene	YH ~~40~~ 2.0ppbv

Standard Data

Lot #	Description	Conc.
AS4079	TO15 STD	40ppbv
AS4080	TO15 STD	2.0ppbv
AS4081	TO15 STD	0.4ppbv
AS4078	TO15 LCS	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044

Supervisor Signature: [signature] Date: 10/2/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	3W12850	BFB		A849	100					ok	
2	3W12851	ICC523-10		A287	100			/	/	ok	
1	3W12852	IC523-0.5		A855	YH ~~50~~ 100			/	/	ok	
2	3W12853	IC523-5		A287	50			/	/	notusal	
1	3W12854	IC523-0.2		A855	40			/	/	ok	
2	3W12855	IC523-20		A287	200			/	/	ok	
2	3W12856	IC523-30		A287	50			/	/	ok	
4	3W12857	IC523-0.1		A895	100			/	/	ok	
4	3W12858	IC523-0.04		A895	40			/	/	ok	
6	3W12859	Nap-5.0		A274	50			/	/	ok	
6	3W12860	Nap-10		A274	100			/	/	ok	
2	3W12861	IC523-40		A287	400			/	/	ok	
7	3W12862	Nap-0.5		A899	100			/	/	ok	
7	3W12863	Nap-0.2		A899	40			/	/	ok	
6	3W12864	Nap-20		A274	200			/	/	ok	
6	3W12865	Nap-40		A274	400			/	/	ok	
						YH					

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: V3W524

Date: 10/5/09

Analyst Signature: [illegible]

Columns: RTX-1 60MX .32mmID

Method: T0153W.M

Seq. File: 3W100509.S

Initial Cal. Method: M3W523

AS Data

Method: T015.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4079	T015STD	40ppbv
AS4078	T015LCS	40ppbv
AS4085	IS/SURR	40/20ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 10/5/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	3W12866	BFB		A885	100					OK	
2	3W12867	CC523-10		A281	100			✓	✓	OK	
3	3W12868	BS		A816	100			✓	✓	OK	
3	3W12869	BSD		A816	100			✓	✓	OK	
5	3W12870	MB/SCC		A425	400	1		✓	✓	OK	
6	3W12871	JA28237-1	STD	A410	100	1		✓	✓	OK/DL	RR20ml
7	3W12872	JA28237-2	↓	A802	100	1		✓	✓	OK/DL	RR40ml
8	3W12873	JA28237-3	↓	A791	100	1		✓	✓	OK/DL	RR25ml
9	3W12874	SCC		A293	400	1		✓	✓	OK	
10	3W12875	JA28237-1	STD	A410	20	1		✓	✓	OK	
11	3W12876	JA28237-2	↓	A802	40	1		✓	✓	OK	
12	3W12877	JA28237-3	↓	A791	25	1		✓	✓	OK	
13	3W12878	JA28296-1	STD	A699	160	1.60		✓	✓	OK	
13	3W12879	JA28296-1Dup	↓	A699	160	1.60		✓	✓	OK	
14	3W12880	JA28296-2	↓	A564	148	1.48		✓	✓	OK	
15	3W12881	JA28296-3	↓	A529	100	1		✓	✓	OK	
16	3W12882	JA28296-4	↓	A590	155	1.55		✓	✓	OK/DL	RR40ml
1	3W12883	JA28296-5	↓	A514	100	1		✓	✓	OK	
3	3W12884	JA28296-6	↓	A438	100	1		✓	✓	OK	
4	3W12885	JA28296-7	↓	A843	744	1.86		✓	✓	OK/DL	RR200ml
6	3W12886	JA28296-8	↓	A135	632	1.58		✓	✓	OK/DL	RR200ml
7	3W12887	JA28296-9	↓	A317	592	1.48		✓	✓	OK	
8	3W12888	JA28296-10	↓	A119	400	1		↑	✓	RR	RR400/100ml
9	3W12889	JA28296-11	↓	A462	400	1		✓	✓	OK/DL	RR200ml
10	3W12890	JA28296-12	↓	A133	400	1		✓	✓	OK/DL	RR200ml
11	3W12891	JA28296-13	↓	A464	400	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

5	3W12892	SCC		A239	400	1		✓	✓	OK	

Form: AT008-04

Rev. Date: 6/13/06

APPENDIX D

FIELD DATA RECORDS AND FIELD LOGS

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS/MADISON Client: ciba Location ID: IA-01/SG-01

Project Number: 365080108 Collector: Emily Jackson Date: 9/15/09 - 9/17/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	FC110	Flow Regulator No:		Flow Regulator No:	FC-080	Flow Regulator No:	
Flow Rate (mL/min):	1/2 hour	Flow Rate (mL/min):		Flow Rate (mL/min):	~~7/15/09~~ 24 hr	Flow Rate (mL/min):	
Canister Serial No:	A602	Canister Serial No:		Canister Serial No:	A101	Canister Serial No:	
Start Date/Time:	9/17/09 10:13	Start Date/Time:		Start Date/Time:	9/15/09/9:57	Start Date/Time:	
Start Pressure ("Hg):	30	Start Pressure ("Hg):		Start Pressure ("Hg):	31	Start Pressure ("Hg):	
Stop Date/Time:	9/17/09 10:47	Stop Date/Time:		Stop Date/Time:	~~9/16/09~~ 9:41	Stop Date/Time:	
Stop Pressure ("Hg):	1	Stop Pressure ("Hg):		Stop Pressure ("Hg):	0	Stop Pressure ("Hg):	
Sample ID: SG-01		Sample ID:		Sample ID: IA-01		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	slab on grade	Story/Level:		Story/Level:	1	Direction from Building:	
Floor Slab Thickness:	10"	Room:		Room:	warehouse W 30' cieling	Distance from Building:	
Potential Vapor Entry Points:	cracks in floor	Potential Vapor Entry Points:		Potential Vapor Entry Points:	cracks in floor	Distance from Roadway:	
Floor Surface:	concrete	Floor Surface:		Floor Surface:	concrete	Ground Surface:	
Noticable Odor:	none	Noticable Odor:		Noticable Odor:	none	Noticable Odor:	
PID Reading (ppb):	0	PID Reading (ppb):		PID Reading (ppb):	–	PID Reading (ppb):	
Intake Depth/Height:	~~N/A~~ 15' bgs	Intake Height:		Intake Height:	4' 6"	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:	Y; 0	Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

IA on scaffolding, crack observed in floor nearby

SG near scaffolding

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107 Audubon Road, Wakefield, MA 01880

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS/Madison Client: Ciba Location ID: 1A-02/SG-02

Project Number: 3650080108 Collector: Emily Jackson Date: 9/15-16/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	FC372	Flow Regulator No:		Flow Regulator No:	FC051	Flow Regulator No:	
Flow Rate (mL/min):	1/2 hr	Flow Rate (mL/min):		Flow Rate (mL/min):	24 hr	Flow Rate (mL/min):	
Canister Serial No:	A400	Canister Serial No:		Canister Serial No:	A195	Canister Serial No:	
Start Date/Time:	9/17/09 10:26	Start Date/Time:		Start Date/Time:	9/15 10:05	Start Date/Time:	
Start Pressure ("Hg):	30	Start Pressure ("Hg):		Start Pressure ("Hg):	30	Start Pressure ("Hg):	
Stop Date/Time:	11:40	Stop Date/Time:		Stop Date/Time:	9/16 9:43	Stop Date/Time:	
Stop Pressure ("Hg):	12	Stop Pressure ("Hg):		Stop Pressure ("Hg):	5	Stop Pressure ("Hg):	
Sample ID: SG-02		Sample ID:		Sample ID: 1A-02		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	slab on grade	Story/Level:		Story/Level:	1	Direction from Building:	
Floor Slab Thickness:	8"	Room:		Room:	warehouse	Distance from Building:	
Potential Vapor Entry Points:	cracks in floor	Potential Vapor Entry Points:		Potential Vapor Entry Points:	cracks	Distance from Roadway:	
Floor Surface:	concrete	Floor Surface:		Floor Surface:	concrete	Ground Surface:	
Noticable Odor:	none	Noticable Odor:		Noticable Odor:	ammonia	Noticable Odor:	
PID Reading (ppb):	0	PID Reading (ppb):		PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:		Intake Height:		Intake Height:	3'	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:	yes, 0%	Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

indoor air on trash can by bay doors; drums of Tolcide (industrial antimicrobial), metaflo-2 and FEREMEDE-700 stored in this area

SG-02 sample filled slowly; regulator turned off before sample finished collecting b/c water was observed in tubing.

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AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS/Madison Client: Ciba Location ID: SG-03/IA-03

Project Number: 3605080108 Collector: Emily Jackson Date: 9/15/09 - 9/17/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	FC392	Flow Regulator No:		Flow Regulator No:	FC-088	Flow Regulator No:	
Flow Rate (mL/min):	1 hr	Flow Rate (mL/min):		Flow Rate (mL/min):	24 hr	Flow Rate (mL/min):	
Canister Serial No:	A594	Canister Serial No:		Canister Serial No:	A332	Canister Serial No:	
Start Date/Time:	9/17 12:18	Start Date/Time:		Start Date/Time:	9/15/09 10:10	Start Date/Time:	
Start Pressure ("Hg):	30	Start Pressure ("Hg):		Start Pressure ("Hg):	24	Start Pressure ("Hg):	
Stop Date/Time:	9/17 13:15	Stop Date/Time:		Stop Date/Time:	9/16/09 9:45	Stop Date/Time:	
Stop Pressure ("Hg):	0	Stop Pressure ("Hg):		Stop Pressure ("Hg):	0	Stop Pressure ("Hg):	
Sample ID: SG-03		Sample ID:		Sample ID: IA-03		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	Slab on grade	Story/Level:		Story/Level:	1	Direction from Building:	
Floor Slab Thickness:	6"	Room:		Room:	office	Distance from Building:	
Potential Vapor Entry Points:	none observed	Potential Vapor Entry Points:		Potential Vapor Entry Points:	none observed	Distance from Roadway:	
Floor Surface:	carpet	Floor Surface:		Floor Surface:	carpeted	Ground Surface:	
Noticable Odor:	none	Noticable Odor:		Noticable Odor:	none	Noticable Odor:	
PID Reading (ppb):	510 max downhole	PID Reading (ppb):		PID Reading (ppb):	—	PID Reading (ppb):	
Intake Depth/Height:	8" bgs	Intake Height:		Intake Height:	3'	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:	N_2 0%	Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

CPS building in office space; dup taken @ this location

SG probe installed immediately below slab due to water table.

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200 American Metro Blvd., Suite 113, Hamilton, NJ 08901

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS/Madison Client: Ciba Location ID: IA-03 DUP

Project Number: 36500080108 Collector: Emily Jackson Date: 9/15-9/17/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	FC292	Flow Regulator No:		Flow Regulator No:	FC113	Flow Regulator No:	
Flow Rate (mL/min):	1 hr	Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial No:	A422	Canister Serial No:		Canister Serial No:	A193	Canister Serial No:	
Start Date/Time:	9/17/09 12:18	Start Date/Time:		Start Date/Time:	9/15/09 10:12	Start Date/Time:	
Start Pressure ("Hg):	30	Start Pressure ("Hg):		Start Pressure ("Hg):	31	Start Pressure ("Hg):	
Stop Date/Time:	9/17/09 13:15	Stop Date/Time:		Stop Date/Time:	9/16/09 9:46	Stop Date/Time:	
Stop Pressure ("Hg):	8	Stop Pressure ("Hg):		Stop Pressure ("Hg):	6	Stop Pressure ("Hg):	
Sample ID: SG-03 DUP		Sample ID:		Sample ID:		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	slab on grade	Story/Level:		Story/Level:	1	Direction from Building:	
Floor Slab Thickness:	6"	Room:		Room:	office	Distance from Building:	
Potential Vapor Entry Points:	–	Potential Vapor Entry Points:		Potential Vapor Entry Points:	–	Distance from Roadway:	
Floor Surface:	carpet	Floor Surface:		Floor Surface:	carpet	Ground Surface:	
Noticable Odor:	–	Noticable Odor:		Noticable Odor:	–	Noticable Odor:	
PID Reading (ppb):	570 manhole, 0 ambient	PID Reading (ppb):		PID Reading (ppb):	–	PID Reading (ppb):	
Intake Depth/Height:	8" bgs	Intake Height:		Intake Height:	3' stairwell landing	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:	N, 0%	Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

In office area

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107 Audubon Road, Wakefield, MA 01880

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS/Madison Client: Ciba Location ID: IA-04/SG-04

Project Number: 3650080108 Collector: Emily Jackson Date: 9/15/09 - 9/17/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	FC094	Flow Regulator No:		Flow Regulator No:	FC064	Flow Regulator No:	
Flow Rate (mL/min):	30 min	Flow Rate (mL/min):		Flow Rate (mL/min):	2 l/hr	Flow Rate (mL/min):	
Canister Serial No:	A730	Canister Serial No:		Canister Serial No:	A882	Canister Serial No:	
Start Date/Time:	9/17/09 10:45	Start Date/Time:		Start Date/Time:	9/15 10:15	Start Date/Time:	
Start Pressure ("Hg):	29	Start Pressure ("Hg):		Start Pressure ("Hg):	28	Start Pressure ("Hg):	
Stop Date/Time:	9/17/09 11:15	Stop Date/Time:		Stop Date/Time:	9/16 9:58	Stop Date/Time:	
Stop Pressure ("Hg):	1	Stop Pressure ("Hg):		Stop Pressure ("Hg):	5	Stop Pressure ("Hg):	
Sample ID: SG-04		Sample ID:		Sample ID: IA-04		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	1st floor	Story/Level:		Story/Level:	1	Direction from Building:	
Floor Slab Thickness:	6"	Room:		Room:	lab	Distance from Building:	
Potential Vapor Entry Points:	Floor drains	Potential Vapor Entry Points:		Potential Vapor Entry Points:	~~ven~~ to drain cracks	Distance from Roadway:	
Floor Surface:	concrete	Floor Surface:		Floor Surface:	concrete	Ground Surface:	
Noticable Odor:	none	Noticable Odor:		Noticable Odor:	musty	Noticable Odor:	
PID Reading (ppb):	0 ambient 900 max down hole	PID Reading (ppb):		PID Reading (ppb):	0	PID Reading (ppb):	
Intake Depth/Height:	18"	Intake Height:		Intake Height:	3' 1"	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:	yes, 0	Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

laboratory. floor drains and cracks visible in painted cement floor, see photos for details

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AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS Madison Client: Ciba Location ID: 1A-BG-05

Project Number: 3650080108 Collector: Emily Jackson Date: 9/15-16/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:		Flow Regulator No:		Flow Regulator No:	FC349	Flow Regulator No:	
Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	24hr	Flow Rate (mL/min):	
Canister Serial No:		Canister Serial No:		Canister Serial No:	A169	Canister Serial No:	
Start Date/Time:		Start Date/Time:		Start Date/Time:	9/15 10:20	Start Date/Time:	
Start Pressure ("Hg):		Start Pressure ("Hg):		Start Pressure ("Hg):	31	Start Pressure ("Hg):	
Stop Date/Time:		Stop Date/Time:		Stop Date/Time:	9/16 10:00	Stop Date/Time:	
Stop Pressure ("Hg):		Stop Pressure ("Hg):		Stop Pressure ("Hg):	8	Stop Pressure ("Hg):	
Sample ID:		Sample ID:		Sample ID: 1A-BG-05		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement		Story/Level:		Story/Level:	2	Direction from Building:	
Floor Slab Thickness:		Room:		Room:	Stairwell	Distance from Building:	
Potential Vapor Entry Points:		Potential Vapor Entry Points:		Potential Vapor Entry Points:	none observed	Distance from Roadway:	
Floor Surface:		Floor Surface:		Floor Surface:	concrete	Ground Surface:	
Noticable Odor:		Noticable Odor:		Noticable Odor:	none	Noticable Odor:	
PID Reading (ppb):		PID Reading (ppb):		PID Reading (ppb):	0	PID Reading (ppb):	
Intake Depth/Height:		Intake Height:		Intake Height:	floor of stairwell landing	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:		Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

staircase w/1 landing; closest to 1A-04

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107 Audubon Road, Wakefield, MA 01880

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CRS/Madison Client: Ciba Location ID: IA-BG-06

Project Number: 3650080108 Collector: Emily Jackson Date: 9/15-16/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:		Flow Regulator No:		Flow Regulator No:	FC 300	Flow Regulator No:	
Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	24/hr	Flow Rate (mL/min):	
Canister Serial No:		Canister Serial No:		Canister Serial No:	A225	Canister Serial No:	
Start Date/Time:		Start Date/Time:		Start Date/Time:	9/15 10:25	Start Date/Time:	
Start Pressure ("Hg):		Start Pressure ("Hg):		Start Pressure ("Hg):	30	Start Pressure ("Hg):	
Stop Date/Time:		Stop Date/Time:		Stop Date/Time:	9/16 10:05	Stop Date/Time:	
Stop Pressure ("Hg):		Stop Pressure ("Hg):		Stop Pressure ("Hg):	6	Stop Pressure ("Hg):	
Sample ID:		Sample ID:		Sample ID: IA-BG-06		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement		Story/Level:		Story/Level:	2	Direction from Building:	
Floor Slab Thickness:		Room:		Room:	stairwell	Distance from Building:	
Potential Vapor Entry Points:		Potential Vapor Entry Points:		Potential Vapor Entry Points:	none	Distance from Roadway:	
Floor Surface:		Floor Surface:		Floor Surface:	concrete	Ground Surface:	
Noticable Odor:		Noticable Odor:		Noticable Odor:	none	Noticable Odor:	
PID Reading (ppb):		PID Reading (ppb):		PID Reading (ppb):	–	PID Reading (ppb):	
Intake Depth/Height:		Intake Height:		Intake Height:	stairwell landing	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:		Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

staircase w/2 landings; on side of building closest to IA-03

MACTEC

107 Audubon Road, Wakefield, MA 01880

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS / Madison Client: Ciba Location ID: 1A-BG-07

Project Number: 3650080108 Collector: Emily Jackson Date: 9/15-16/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:		Flow Regulator No:		Flow Regulator No:	FC086	Flow Regulator No:	
Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	24 hr	Flow Rate (mL/min):	
Canister Serial No:		Canister Serial No:		Canister Serial No:	A745	Canister Serial No:	
Start Date/Time:		Start Date/Time:		Start Date/Time:	9/15 10:30	Start Date/Time:	
Start Pressure ("Hg):		Start Pressure ("Hg):		Start Pressure ("Hg):	29	Start Pressure ("Hg):	
Stop Date/Time:		Stop Date/Time:		Stop Date/Time:	9/16 10:10	Stop Date/Time:	
Stop Pressure ("Hg):		Stop Pressure ("Hg):		Stop Pressure ("Hg):	1	Stop Pressure ("Hg):	
Sample ID:		Sample ID:		Sample ID: 1A-BG-07		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement		Story/Level:		Story/Level:	1	Direction from Building:	
Floor Slab Thickness:		Room:		Room:	outside ambient	Distance from Building:	
Potential Vapor Entry Points:		Potential Vapor Entry Points:		Potential Vapor Entry Points:	outside ambient	Distance from Roadway:	
Floor Surface:		Floor Surface:		Floor Surface:	metal steps	Ground Surface:	
Noticable Odor:		Noticable Odor:		Noticable Odor:	none	Noticable Odor:	
PID Reading (ppb):		PID Reading (ppb):		PID Reading (ppb):	-	PID Reading (ppb):	
Intake Depth/Height:		Intake Height:		Intake Height:	4'	Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:		Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

outside on steps by train tracks, upwind of building

MACTEC

107 Audubon Road, Wakefield, MA 01880

Attachment D-2

Off-Site Vapor Intrusion Investigation Report (MACTEC, 2009)

OFF-SITE VAPOR INTRUSION INVESTIGATION REPORT
SOIL GAS SAMPLING RESULTS

CPS/MADISON SUPERFUND SITE
OLD BRIDGE TOWNSHIP
MIDDLESEX COUNTY, NEW JERSEY

MACTEC

DECEMBER 2009

OFF-SITE VAPOR INTRUSION INVESTIGATION REPORT
SOIL GAS SAMPLING RESULTS

CPS/MADISON SUPERFUND SITE
OLD BRIDGE TOWNSHIP
MIDDLESEX COUNTY, NEW JERSEY

Submitted to:

United States Environmental Protection Agency
Region 2
290 Broadway
New York, New York 10007-1866

Submitted by:

CIBA Specialty Chemicals
Corporate Remediation
Toms River, New Jersey

Prepared By:

MACTEC

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200 American Metro Boulevard, Suite 113
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Project No. 3650080108

December 9, 2009

Michael Murphy
Project Manager

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Project Scientist

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GLOSSARY OF ACRONYMS

bgs	Below Ground Surface
CIBA	CIBA Specialty Chemicals
COC	Contaminants of Concern
ft	Feet
FSPM	Field Sampling Procedures Manual
GWQS	Groundwater Quality Standards
GWSL	Groundwater Screening Level for Vapor Intrusion
HASP	Health and Safety Plan
MACTEC	MACTEC Engineering and Consulting, Inc.
MSL	Mean Sea Level
NAPL	Non-aqueous Phase Liquid
ND	Not Detected
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
RI	Remedial Investigation
SGSL	Soil Gas Screening Level
USEPA	United States Environmental Protection Agency
VI	Vapor Intrusion
VOC	Volatile Organic Compound

1.0 INTRODUCTION

This Vapor Intrusion (VI) Investigation Report was prepared by MACTEC Engineering and Consulting, Inc. (MACTEC) on behalf of CIBA Specialty Chemicals (CIBA) to document the results of the off-site VI investigation activities from the CPS/Madison Superfund Site (Site). These investigation activities were conducted consistent with the CPS Off-Site Vapor Intrusion Investigation Work Plan, CPS/Madison Superfund Site, Old Bridge Township, Madison County New Jersey, submitted June 30, 2009 and approved by email from the United States Environmental Protection Agency (USEPA) on August 20, 2009. The Site is a former solvent recovery/chemical processing/chemical manufacturing facility that is currently unoccupied located on Old Waterworks Road in Old Bridge Township, Middlesex County, New Jersey. The offsite investigation was conducted at the Madison Industries property. Madison Industries is a metals recovery facility.

This report presents results of Phase I of the CPS off-site VI activities and discusses offsite impacts of the volatile organic compound (VOC) plume. VI investigation activities consisted of sub-slab soil gas sampling completed during September 2009. Work included sampling beneath the laboratory and break room portions of the Copper Building at the Madison Industries facility and submittal of samples for laboratory analysis of VOCs. Sampling results were evaluated with respect to the applicable New Jersey Department of Environmental Protection (NJDEP) Soil Gas Screening Levels (SGSLs) and the NJDEP Decision Flow Chart for the VI Pathway (NJDEP, 2005a).

Based on the findings as discussed herein, an offsite indoor air impact from the VOC plume is not likely and no further evaluation of off-site VI impacts is recommended at this time. Site background information is provided in Section 2. The VI investigation work and results are discussed in Section 3. A summary of findings and recommendations is presented in Section 4.

2.0 SITE BACKGROUND

2.1 ENVIRONMENTAL SETTING

The Site location is shown in **Figure 1**. A brief summary of Site geology, Site hydrogeology, and Site topography are presented below (CIBA, 2008).

Geology:

The CPS site lies in the northeastern part of the Coastal Plain Physiographic Province which consists of a large, regional wedge of unconsolidated and poorly-consolidated sands, gravels, silts and clays. The depth to the top of bedrock near the CPS site is approximately 270 to 300 feet below ground surface (ft-bgs).

At the CPS site, the Old Bridge Sand, a member of the Cretaceous-age Raritan Formation, occurs from just below ground surface to 55 ft-bgs. The Old Bridge Sand is primarily a fine- to coarse-grained, well-sorted sand with occasional, discontinuous, thin beds of clay. Locally, a veneer of the Quaternary-age Cape May Formation overlies the Old Bridge Sand. The two units are lithologically similar and are in direct hydraulic connection.

The Old Bridge Sand is underlain by the South Amboy Fire Clay. Where present, the South Amboy Fire Clay is found at a depth varying from 55 to 85 ft-bgs. The clay was found to be thin or absent beneath portions of the CPS and Madison sites. Underlying the South Amboy Fire Clay is a thin layer of the Sayreville Sand, which has a composition similar to the Old Bridge Sand. The laterally continuous Woodbridge Clay with an average thickness of about 100 feet lies beneath the Sayreville Sand and is the confining unit between the Old Bridge Sand and Farrington Sand aquifers. The underlying Farrington Sand is a fine- to medium-grained unit of variable thickness.

Hydrogeology:

The Cape May, Old Bridge and Sayreville Sand units comprise the Old Bridge water-table aquifer at the CPS facility and the Runyon Well Field. The South Amboy Fire Clay is a confining unit existing within the Old Bridge aquifer, but is not laterally continuous. The Woodbridge Clay, a continuous confining unit with a thickness of about 100 feet, separates the Old Bridge Sand and Farrington Sand aquifers. The Farrington Sand is also a major regional aquifer.

Based on local aquifer pumping tests, the average hydraulic conductivity (K) of the Old Bridge aquifer in the vicinity of the CPS site ranges from approximately 74 to 100 feet/day, and the effective porosity is approximately 40 percent. Storage values range from 0.02 to 0.05, which are typical for unconfined aquifers containing clay layers.

Ground water levels are shallow, encountered from approximately 6 to 10 ft-bgs in monitoring wells located on and downgradient of the CPS site. Water level fluctuations are coincident with precipitation events due to the permeable recharge characteristics of the ground surface.

Ground water elevation contours indicate a southwest flow direction under both static and pumping conditions. The hydraulic gradient of the water table appears to be consistent and relatively flat at an average value of 0.004 foot/foot. Water table levels measured adjacent to Pricketts Pond indicate that ground water from the north discharges into the pond; to the south the pond appears to recharge the aquifer.

Based on ground water data collected at the CPS site, the flow direction and hydraulic gradient are similar to the regional values.

Topography:

Regional topography around the CPS site is relatively flat with little natural relief. The land surface elevation is approximately 25 feet above mean sea level (ft-msl). Local topography slopes gently to the south and southwest, towards Pricketts and Tennent Ponds.

2.2 Site Conceptual Model – Potential Exposure Pathways

A Site conceptual exposure model was developed based on the Site conditions, fate and transport characteristics of the Site-related contaminants, mechanisms of toxicity of Site-related contaminants, and potential receptors. A complete exposure pathway is defined as one in which the Site-related constituents can be traced or expected to travel from the source to a receptor that can be affected by each contaminant. If any of these conditions are missing, the pathway is considered to be incomplete. An ecological exposure pathway is considered incomplete if habitat is not present. Potential complete exposure pathways at the Site include potential direct contact with contaminated soils or groundwater or vapor exposure by construction workers and potential for indoor air quality impacts via subsurface vapor transport. Potential exposure pathways were evaluated as follows.

Vapor Transport

Exposure to indoor air impacted by VI from groundwater and/or subsurface soil into buildings is recognized as a potential human health risk, particularly where volatiles are present in water table ground water, in subsurface soil, or where free product or non-aqueous phase liquid (NAPL) is present. Federal and state regulatory requirements and guidance (USEPA, 2001, 2002, 2004, NJDEP, 2005a, 2005b, 2006) for evaluation of indoor air list three major techniques or tools for assessing VI impacts to indoor air: vapor transport modeling (including the Johnson and Ettinger Vapor Intrusion Model (Johnson & Ettinger, 1991) with numerous technical updates); Soil Gas Sampling; and Indoor Air Monitoring.

Based on the Remedial Investigation (RI) data, VOC-impacted groundwater appears to be limited to the main process area of the CPS site. Hydropunch and ground water sampling have isolated the most VOC-impacted area to the southern portion of the main process area and Tank Farms 1 through 5. The "hotspot" of the contaminant plume is directly south of the CPS building, with an extent (west to east) of less than 140 feet. The full areal extent of the impact area above MCLs is shown on Figure 2. Groundwater at the site tends to flow in an approximately southwestern direction, and the plume in general moves away from the CPS building. However, site related contaminants have been found in one well (WCC-1M) located northeast of the CPS building, see section 3.2 for more details. The vertical distribution of contaminant compounds is based primarily on hydropunch sampling data. In general, total VOC concentrations were highest at the water table and decreased with depth. The vertical extent of the hotspot is approximately 40 ft-bgs, but may extend to depths up to 90 ft bgs. Quarterly groundwater sampling was performed during 2007, and groundwater sample results were reviewed for an initial evaluation of VI pathway (see Section 3.2). Additional VI investigation was completed during 2009 and is the subject of this report.

2.3 Groundwater Sampling Results

Ground water sampling is conducted quarterly at the site as part of the PMP. In June 2007, CIBA performed work that included a round of water level measurements and sampling of 26 wells. Results of that sampling event will be used to evaluate the VI pathway. The most recent PMP report was submitted in September 2007 for the First and Second Quarter 2007.

Ground water data indicate that chlorinated solvents are the primary contaminants of concern (COCs) for the potential on-site VI pathway, consistent with previous RI results. Another on-site

COC is benzene. The constituents identified in **Table 1** were detected in monitoring wells at concentrations above the current NJDEP Groundwater Screening Levels (GWSL) for vapor intrusion in the second quarter 2007. For non-detects, reporting limits that are above the GWSLs are included as a conservative measure.

Groundwater sample results for the primary Site-related COCs detected above the NJDEP Groundwater Quality Standards (GWQS) and the GWSL (where applicable) are shown in **Appendix A**. Site-wide groundwater level measurements indicate that the average depth to the groundwater table ranged from approximately 5.6-9.6 feet bgs, during 2008. Based on the June 2008 measured groundwater contours, two buildings on the Madison Industries site, the Copper Building and the Maintenance Building, are down gradient or side gradient of the highest groundwater contaminant concentrations. A third building, for zinc and brass processing, is located on the Madison Industries site, but over 50' up-gradient and across the creek from the plume. Several wells, CPS-3A, CPS-1, and WE-2BR are located within 100' of the Copper Building and have VOC concentrations above the GWSLs for benzene and several chlorinated VOCs. Although there are no up-gradient wells within 100' of the Maintenance Building, further evaluation of the VI pathway may be warranted in the building if soil gas and groundwater sample results are above criteria in the Copper Building.

Therefore, consistent with the Work Plan, the use of a phased sampling approach was implemented for evaluation of the VI pathway. The first phase of VI sampling on the Madison site consisted of sub-slab soil gas samples in the Copper Plant (nearest down gradient off-site receptors) to determine if additional off-site VI investigation is warranted. The phased approach for subsequent sampling activities is summarized in Figure 6 of the Off-Site Vapor Intrusion Work Plan.

Ground water sample results and elevation data for samples collected during the first and second quarter 2007 were included in the Phase II VI Work Plan. Complete results for the off-site ground water investigation were transmitted to the USEPA and NJDEP (CIBA, 2007). Groundwater sample results for VOCs exceeding both the NJDEP GWQS and GWSLs are indicated on tables and figures in **Appendix A**.

3.0 VAPOR INTRUSION INVESTIGATION AND RESULTS

3.1 Technical Overview

The Off-Site VI investigation was conducted in accordance with the Off-Site VI Work Plan dated June 30, 2009 and approved by the NJDEP via email on August 20, 2009. The work activities completed and discussed in this section are summarized below:

- Site-walk to determine appropriate sampling locations;
- Field mobilization including utility mark-out/geophysical survey to verify the absence of underground utilities at proposed drilling and sample locations;
- Collection of soil gas samples and submittal of samples for laboratory analyses of VOCs using Method TO-15; and,
- Data evaluation of results with respect to applicable regulatory criteria.

Field sampling activities during September 2009 included sub-slab sampling within the laboratory and breakroom portions of the copper building (2 sample locations). Sample locations are identified on Figure 2. In addition, a duplicate sample was collected from location SG-02-OS (laboratory) as part of the sampling program. A photo log detailing sampling locations is included in **Appendix B**, and field sampling forms are included in **Appendix C**.

Field sampling and laboratory analysis was performed in accordance with the work plan and applicable protocols contained in the NJDEP Vapor Intrusion Guidance Document (October 2005) and Field Sampling Procedures Manual (FSPM) (August 2005). Sub-slab soil gas sampling was conducted as the first step in a phased approach to determine the potential for off-site VI impacts.

All samples were submitted to Accutest Laboratories (Accutest) of Dayton, New Jersey for analysis of VOCs using Method TO-15. The sampling and laboratory analytical program included applicable quality assurance/quality control requirements specified in the NJDEP VI Guidance and the analytical method, including completion of TO-15 field test data sheets, clean canister certification, method blanks, instrument blanks, and laboratory control samples. Data validation is being performed by CIBA and data validation summary reports will be included in the Final Supplemental RI Report. Laboratory data reports are included in Appendix D.

The sampling program is summarized on **Table 2**. Sub-slab soil gas sample results for the sampling during September 2009 are presented in **Table 3**. Sample results exceeding applicable screening levels are indicated on **Figure 2**.

Sampling activities and results are discussed in Sections 3.2 and 3.3. A summary of findings and recommendations is presented in Section 4. Based on the VI investigation results, no further investigation of the off-site VI impacts is recommended.

3.2 Field Mobilization and Sampling

A site walk and building inspections were performed on April 8, 2009 for the Copper Plant and Maintenance Buildings at the Madison Industries site. Both buildings are currently occupied and the building inspections addressed the following items consistent with NJDEP VI guidance:

- Determination and analysis of building construction;
- Analysis of potential background sources of VOCs;
- Identification of potential VI pathways into a structure and possible sampling locations; and,
- Review of VI sampling procedures with building occupants/owners.

Field mobilization and installation of the permanent soil gas probes began September 16th and sampling was completed September 17th, 2009. Activities for the VI investigation included:

- Review of the Site's Health and Safety Plan (HASP) and field mobilization including utility mark-out/geophysical survey to verify the absence of underground utilities at proposed intrusive drilling locations prior to intrusive activities;
- Collection of soil gas samples using Summa canisters at selected locations;
- Submittal of samples for laboratory analysis of VOCs; and,
- Field mobilization began September 16th and sampling was completed September 17th, 2009.

The VI work plan called for a phased approach with the first phase of the VI sampling to include sub-slab soil gas sampling in the Copper building, with additional sampling proposed if warranted. The Copper Building is slab-on grade construction (6 to 8-inch thick concrete) and is divided into multiple use areas, including laboratory, manufacturing, maintenance, break room, lunch, locker and storage spaces (see **Figure 2**). Sub-slab sampling locations were selected in the laboratory and break room based on occupied spaces, segmented areas within larger areas, current uses, and the

identification of preferential vapor pathways (floor drains that are connected to the sanitary sewer) in these areas.

3.3 Soil Gas Sampling – September 2009

This section summarizes the sub-slab soil gas sampling and analysis and the evaluation of the associated analytical data.

3.3.1 Sampling and Analysis

Permanent sub-slab soil gas probes were installed on September 16, 2009 and samples were collected September 17, 2009. Samples are identified in Table 2 – Summary of Off-Site Sampling Program.

Soil gas samples were installed using direct-push equipment and permanent soil vapor probes in accordance with the Work Plan and the NJDEP VI Guidance (NJDEP, 2005a) and Field Sampling Procedures Manual FSPM (NJDEP, 2005b). Drilling and soil vapor sampling equipment was provided by TPI Environmental, Inc. with field oversight and sample collection by MACTEC. Concrete coring equipment was used to provide access for probe installation. Field observation indicated that the concrete slab ranged from 6-8" bgs. Boreholes were advanced approximately 1 ft below slab and 6" double screened stainless steel vapor sampling implants were put in place, packed in sand, sealed with bentonite, and fitted with 3" aluminum flush mounts that were set in place with concrete. Appendix B includes photographs of the installation.

Prior to soil gas sample collection, the annular seal of each sampling point was tested for leaks using an inert trace compound (helium) to verify the integrity of the seal and confirm no surface air short-circuiting of the sampling point. Helium trace gas was not detected (ND) during the sampling activities indicating that all sampling points were effectively sealed. Each sampling point was purged of approximately 3 volumes of air using a purge rate <200 ml/minute, prior to sample collection. Soil gas samples were collected using laboratory-supplied, stainless steel, 1-Liter Summa canisters using a purge rate of approximately 33 milliliters per minute ml/minute (sample time 30 minutes). At location SG-02-OS, a duplicate sample was collected using a "Y" fitting and a flow rate set to one-half the flow of the field sample canisters (sample time 1 hour), thus ensuring that the combined flow rate was equal to the flow of one field sample. All samples were submitted to Accutest Laboratories in Dayton, NJ under chain of custody for analysis of VOCs using USEPA Method TO-15.

3.3.2 Data Evaluation

Data were compared to the NJDEP SGSLs to determine the need for further investigation or action in accordance with NJDEP VI Guidance and Decision Matrix Flow Chart, as shown in Table 2. Detected compounds and associated concentrations are indicated on Figure 2. Other data evaluation factors included the relative exceedance of the screening level, the presence and concentration of VOCs in groundwater samples and sub-slab soil gas samples, and possible effects of background contamination sources.

Only chloroform was detected in soil gas samples above SGSLs in both samples and the duplicate. Chloroform was not identified above the GWSL in any of the groundwater samples, indicating that the presence of this compound may not be associated with the groundwater plume. Concentrations of all other detected compounds in soil gas samples were below corresponding non-residential SGSLs.

Laboratory analytical reports for the September 2009 sampling event are provided in **Appendix D**.

4.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

4.1 FINDINGS

Sub-slab soil gas sample data was evaluated with respect to the NJDEP SGSLs to determine the need for further investigation or action in accordance with NJDEP VI Guidance and Decision Matrix Flow Chart. The findings can be summarized as:

- Only chloroform was detected in soil gas samples above SGSLs, but was not detected in ground water samples, indicating that the VI pathway is not complete for these compounds. The presence of chloroform detected in soil gas samples above SGSLs is likely associated with background or other sources. Chloroform was also detected in the on-site soil gas samples, but not in the indoor air samples, indicating that this compound is not attributable to the VI pathway.
- Concentrations of all other detected VOCs were below corresponding non-residential SGSLs.
- No VOCs were detected in sub-slab soil gas samples at levels greater than 10 times the SGSLs.

4.2 RECOMMENDATIONS

Consistent with the NJDEP Vapor Intrusion Guidance, multiple lines of evidence were evaluated to determine appropriate action for the VI pathway. Based on the VI investigation findings and review of data with respect to NJDEP screening levels and VI Guidance/Decision Flow Chart, there is no immediate adverse health risk or rapid response action required at this time.

Based on the low relative exceedance of the screening level for chloroform, the lack of correlation of soil gas and groundwater sample results, and potential contribution from other sources no further evaluation of the VI Pathway is recommended in the Copper Building or downgradient of the Copper Building.

VOC concentrations in groundwater are decreasing and periodic monitoring of the groundwater will continue to occur. VI pathway will be performed as noted above until VOC concentrations in groundwater decrease to below the NJDEP GWSLs for the VI pathway.

5.0 REFERENCES

CIBA Specialty Chemicals, 2007. Q1/Q2 Performance Monitoring Program (PMP) Report Performance Monitoring Plan Report, September.

CIBA, 2008. Supplemental Remedial Investigation Work Plan, CPS/Madison Superfund Site. March 2008.

Johnson, P.C., and R. A. Ettinger, 1991. Heuristic Model for Predicting the Intrusion Rate of Contaminant Vapors Into Buildings. Environ. Sci. Technol. 25: 1445-1452.

New Jersey Department of Environmental Protection (NJDEP), 2002. Technical Requirements for Site Remediation Readoption with Amendments: N.J.A.C. 7:26E. December 2002; Last Revised July 2005.

NJDEP, 2005a. Vapor Intrusion Guidance. Updated October 2005.

NJDEP, 2005b. Field Sampling Procedures Manual. Updated August 2005.

NJDEP, 2006. New Jersey Johnson & Ettinger Spreadsheets (NJDEP, 2006); online at http://www.nj.gov/dep/srp/guidance/vaporintrusion/njje.htm
U. S. Environmental Protection Agency.

NJDEP, 2007. Tables for the Vapor Intrusion Guidance (NJDEP, 2007); online at http://www.state.nj.us/dep//srp/guidance/vaporintrusion/vig.htm. Updated March 2007.

United States Environmental Protection Agency (USEPA), 2001. Johnson and Ettinger (1991) Model for Subsurface Vapor Intrusion into Buildings. Version 2.3. U.S. EPA, Office of Emergency and Remedial Response, Toxics Integration Branch, Washington, DC. Available online at: http://www.epa.gov/superfund/programs/risk/airmodel/johnson_ettinger.htm

USEPA, 2002. Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Ground Water and Soils (Subsurface Vapor Intrusion Guidance). Federal Register, Vol. 67, No. 230: 71169–72 and EPA530-F-02-052.

USEPA, 2004. User's Guide for Evaluating Subsurface Vapor Intrusion into Buildings. February 22, 2004.

TABLES

Table 1
2007 Groundwater Concentrations Above GWSL
Off-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, New Jersey

Constituent	GWSL	MI-8	RS-2B	RS-2C	CPS-3A	WCC-1M	WE-2RB	CPS-1
Benzene	15		21	32	69		27	64
Trichloroethene	1	2	3.2	3.9	7.7	1.6	8	4 U
1,2-Dichloroethane	2	5.6	13	25	98	5.8	54	14
Vinyl Chloride	1		4.7	5.5	17		3.3	5.8
Tetrachloroethene	1				1.1		2.9	4 U
1,4-Dichlorobenzene	75						85	
1,1,2,2-Tetrachloroethane	4						11	4 U
Chlorobenzene	770							810

Concentrations are reported in ug/l (micrograms per liter)
GWSL – Ground water screening levels
Highlight indicates wells that are relevant to off-site vapor intrusion evaluation.

Prepared by: EMJ
Checked by: DAB

Table 2
Summary of Off-Site Sampling Program - Soil Gas Samples
Off-Site Vapor Intrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Location	**Sub Slab Soil Gas Samples**
Break room	SG-02
Laboratory	SG-02-OS and duplicate

Table 3
Sub-Slab Soil Gas Sample Results
Off-Site Vapor Inrusion Investigation Report
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Name: **Sample Matrix:** **Sample Date:** **Lab ID:**		**NJDEP Nonresidential SGSLs**		SG-01OS JA28237-1 9/17/2009				SG-02OS JA28237-2 9/17/2009				SG-02OS DUP JA28237-3 9/17/2009			
Compound	**CAS #**	ppbv	*ug/m³*	ppbv	Q	*ug/m3*	Q	ppbv	Q	*ug/m3*	Q	ppbv	Q	*ug/m3*	Q
1,1,1-Trichloroethane	71-55-6	13,000	72,000	0.098	U	0.53	U	0.098	U	0.53	U	0.098	U	0.53	U
1,1,2,2-Tetrachloroethane	79-34-5	5	34	0.091	U	0.62	U	0.091	U	0.62	U	0.091	U	0.62	U
1,1,2-Trichloro-1,2,2-trifluoroethane (F	76-13-1	290,000	#######	1.7		13.0		0.088	U	0.67	U	0.088	U	0.67	U
1,1,2-Trichloroethane	79-00-5	5	27	0.085	U	0.46	U	0.085	U	0.46	U	0.085	U	0.46	U
1,1-Dichloroethane	75-34-3	8,800	36,000	0.13	U	0.53	U	0.13	U	0.53	U	0.13	U	0.53	U
1,1-Dichloroethene	75-35-4	3,900	15,000	0.18	U	0.71	U	0.18	U	0.71	U	0.18	U	0.71	U
1,2,4-Trichlorobenzene	120-82-1	340	2,600	0.26	U	1.93	U	0.26	U	1.93	U	0.26	U	1.93	U
1,2,4-Trimethylbenzene	95-63-6	na	na	14.8		72.8		11.9		58.5		16.2		79.6	
1,2-Dibromoethane	106-93-4	5	38	0.082	U	0.63	U	0.082	U	0.63	U	0.082	U	0.63	U
1,2-Dichlorobenzene	95-50-1	1,700	10,000	0.15	U	0.90	U	0.15	U	0.90	U	0.15	U	0.90	U
1,2-Dichloroethane	107-06-2	5	20	0.14	U	0.57	U	0.14	U	0.57	U	0.14	U	0.57	U
1,2-Dichloroethene (cis)	156-59-2	640	2,600	0.11	U	0.44	U	0.11	U	0.44	U	0.11	U	0.44	U
1,2-Dichloroethene (trans)	156-60-5	1,300	5,100	0.14	U	0.56	U	0.14	U	0.56	U	0.14	U	0.56	U
1,2-Dichloropropane	78-87-5	5	23	0.11	U	0.51	U	0.11	U	0.51	U	0.11	U	0.51	U
1,2-Dichlorotetrafluoroethane (Freon 114	76-14-2	na	na	0.088	U	0.62	U	0.088	U	0.62	U	0.088	U	0.62	U
1,3,5-Trimethylbenzene	108-67-8	na	na	3.1		15.2		2.5		12.3		3.5		17.2	
1,3-Butadiene	106-99-0	5	11	0.14	U	0.31	U	0.14	U	0.31	U	0.14	U	0.31	U
1,3-Dichlorobenzene	541-73-1	130	770	0.13	U	0.78	U	0.13	U	0.78	U	0.13	U	0.78	U
1,4-Dichlorobenzene	106-46-7	5	32	0.13	U	0.78	U	0.13	U	0.78	U	0.13	U	0.78	U
1,4-Dioxane	123-91-1	na	na	0.25	U	0.90	U	0.25	U	0.90	U	0.25	U	0.90	U
2,2,4-Trimethylpentane	540-84-1	na	na	0.081	U	0.38	U	0.081	U	0.38	U	0.081	U	0.38	U
2-Butanone (Methyl ethyl ketone)	78-93-3	120,000	360,000	11.5		33.9		7.4		21.8		6.2		18.3	
2-Chlorotoluene (o-Chlorotoluene)	95-49-8	990	5,100	0.087	U	0.45	U	0.087	U	0.45	U	0.087	U	0.45	U
2-Hexanone	591-78-6	na	na	4.2		17.2		2.5		10.2		2.5		10.2	
3-Chloropropene (allyl chloride)	107-05-1	11	34	0.12	U	0.38	U	0.12	U	0.38	U	0.12	U	0.38	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8	na	na	6.4		31.5		5.5		27.0		7.7		37.9	
4-Methyl-2-pentanone (MIBK)	108-10-1	na	na	0.18	U	0.74	U	0.18	U	0.74	U	0.18	U	0.74	U
Acetone (2-propanone)	67-64-1	97,000	230,000	18.1		43.0		58.7		139.4		14.6		34.7	
Benzene	71-43-2	8	26	7.0		22.4		4.4		14.1		7.0		22.4	
Benzyl Chloride	100-44-7	na	na	0.13	U	0.67	U	0.13	U	0.67	U	0.13	U	0.67	U
Bromodichloromethane	75-27-4	5	34	0.11	U	0.74	U	0.11	U	0.74	U	0.11	U	0.74	U
Bromoethene	593-60-2	5	22	0.073	U	0.32	U	0.073	U	0.32	U	0.073	U	0.32	U
Bromoform	75-25-2	18	180	0.088	U	0.91	U	0.088	U	0.91	U	0.088	U	0.91	U
Bromomethane (Methyl bromide)	74-83-9	92	360	0.096	U	0.37	U	0.096	U	0.37	U	0.096	U	0.37	U
Carbon disulfide	75-15-0	16,000	51,000	0.13	U	0.40	U	0.13	U	0.40	U	0.13	U	0.40	U
Carbon tetrachloride	56-23-5	5	31	0.088	U	0.55	U	0.62	J	3.90	J	0.76	J	4.78	J
Chlorobenzene	108-90-7	780	3,600	0.10	U	0.46	U	0.10	U	0.46	U	0.10	U	0.46	U
Chloroethane	75-00-3	93	250	0.16	U	0.42	U	0.16	U	0.42	U	0.16	U	0.42	U
Chloroform	67-66-3	5	24	**8.8**		**43.0**		**5.8**		**28.3**		**7.5**		**36.6**	
Chloromethane (Methyl chloride)	74-87-3	3,200	6,600	0.19	U	0.39	U	0.19	U	0.39	U	0.19	U	0.39	U
cis-1,3-Dichloropropene	10061-01-5	na	na	0.076	U	0.35	U	0.076	U	0.35	U	0.076	U	0.35	U
Cyclohexane	110-82-7	130,000	430,000	0.24	U	0.83	U	0.24	U	0.83	U	0.24	U	0.83	U
Dibromochloromethane	124-48-1	5	43	0.14	U	1.19	U	0.14	U	1.19	U	0.14	U	1.19	U
Dichlorodifluoromethane	75-71-8	2,600	13,000	0.44	J	2.18	J	0.48	J	2.37	J	0.095	U	0.47	U
Ethanol	64-17-5	na	na	25.0		47.1		33.5		63.1		17.1		32.2	
Ethyl Acetate	141-78-6	na	na	22.4		80.6		1.8		6.48		0.21	U	0.76	U
Ethylbenzene	100-41-4	17,000	74,000	18.5		80.4		13.9		60.4		18.2		79.1	
Hexachlorobutadiene	87-68-3	5	53	0.17	U	1.81	U	0.17	U	1.81	U	0.17	U	1.81	U
Isopropyl Alcohol	67-63-0	na	na	17.2		42.3		3.0		7.37		1.3		3.20	
Methylene chloride	75-09-2	120	430	1.3		4.52		0.87		3.02		0.10	U	0.35	U
MTBE (Methyl tert-butyl ether)	1634-04-4	50	180	0.089	U	0.32	U	0.089	U	0.32	U	0.089	U	0.32	U
n-Heptane	142-82-5	na	na	2.4		9.84		1.5		6.15		1.8		7.38	
n-Hexane	110-54-3	14,000	51,000	2.8		9.87		1.8		6.34		2.2		7.75	
Propylene	115-07-1	na	na	0.25	U	0.43	U	1.9	J	3.26	J	0.92	J	1.58	J
Styrene	100-42-5	17,000	73,000	0.51	J	2.17	J	0.46	J	1.96	J	0.60	J	2.55	J
Tertiary butyl alcohol (TBA)	75-65-0	1500	4600	0.97		2.94		0.092	U	0.28	U	0.092	U	0.28	U
Tetrachloroethene (PCE)	127-18-4	5	36	0.69		4.68		0.52		3.53		2.1		14.2	
Tetrahydrofuran	109-99-9	na	na	0.13	U	0.38	U	0.13	U	0.38	U	0.13	U	0.38	U
Toluene	108-88-3	95,000	360,000	221		832.8		191		719.8		183		689.6	
trans-1,3-Dichloropropene	10061-02-6	na	na	0.064	U	0.29	U	0.064	U	0.29	U	0.064	U	0.29	U
Trichloroethene (TCE)	79-01-6	5	27	0.93		5.00		0.074	U	0.40	U	1.7		9.14	
Trichlorofluoromethane (Freon 11)	75-69-4	9,100	51,000	0.78	J	4.38	J	0.86		4.83		0.53	J	2.98	J
Vinyl Acetate	108-05-4	na	na	0.18	U	0.63	U	0.18	U	0.63	U	0.18	U	0.63	U
Vinyl chloride	75-01-4	19	48	0.092	U	0.24	U	0.092	U	0.24	U	0.092	U	0.24	U
Xylenes (m&p)	1330-20-7	na	na	83.3		361.8		64.7		281.0		86.7		376.6	
Xylenes (o)	95-47-6	na	na	18.3		79.5		14.4		62.5		19.4		84.3	
Xylenes (total)	1330-20-7	1800	7700	102		443.0		79.0		343.1		106		460.4	

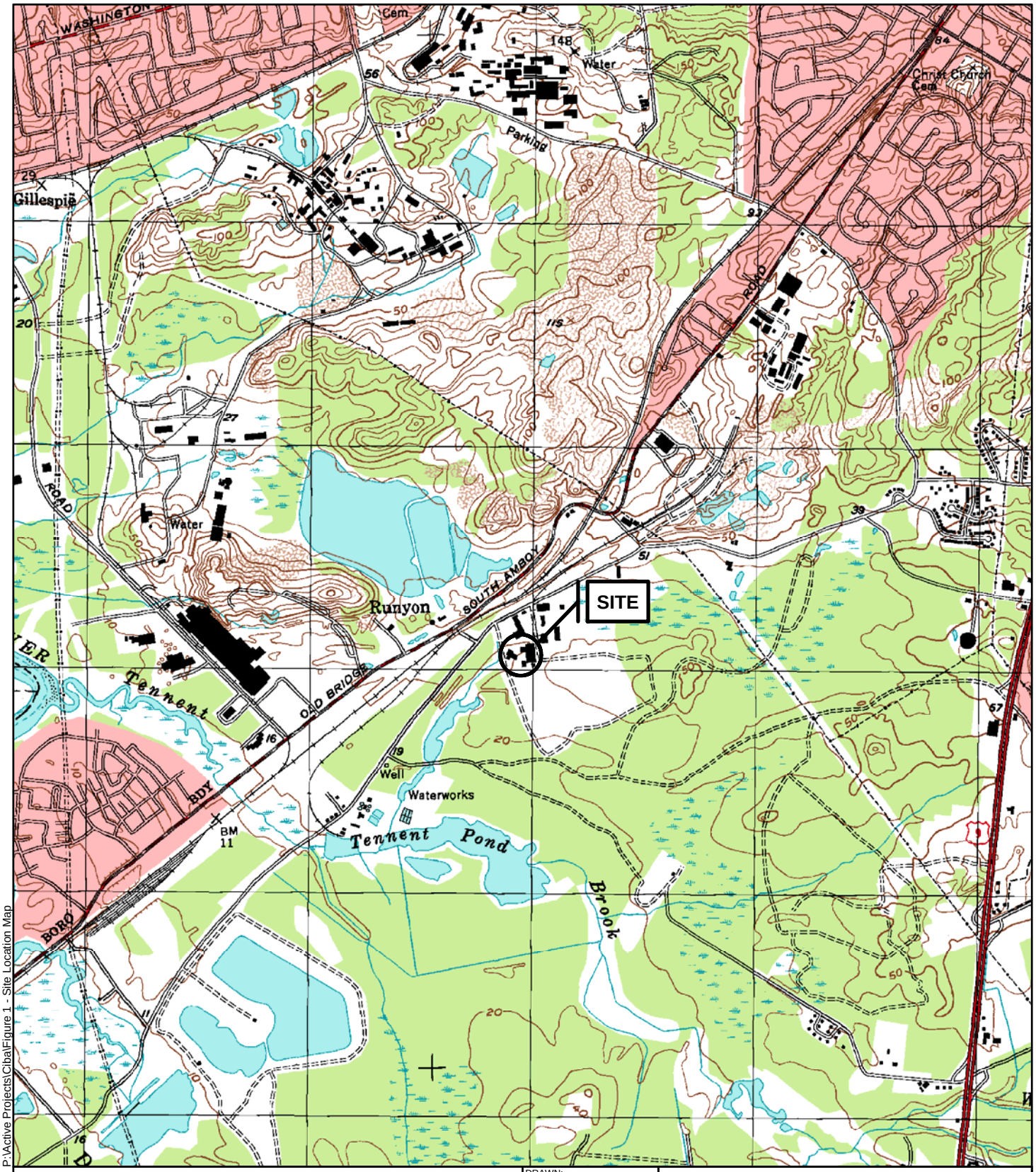
Notes:
SGSLs - Soil Gas Screening Levels
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level

Prepared By: EMJ
Checked By: MWV

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

P:\CIBAoldBRIDGE\Project Deliverables\Reports\VIPhaseIReports-Draft\MI VIR\Tables\MI Table 3 in Excel 2003[1].xls

FIGURES



0 1,000 2,000 4,000
Feet

N

DRAWN:	WSL
JOB NUMBER:	3650080108
REVISION:	02/29/08

MACTEC
200 American Metro Blvd., Suite 113
Hamilton, New Jersey 08619

NOTES:
MAP SOURCE:
USGS QUADRANGLE 7.5 MINUTE SERIES.
SOUTH AMBOY, NEW JERSEY, 1995.

SCALE: 1:24,000

SITE COORDINATES:
NORTHING - 582841.761
EASTING - 539907.882

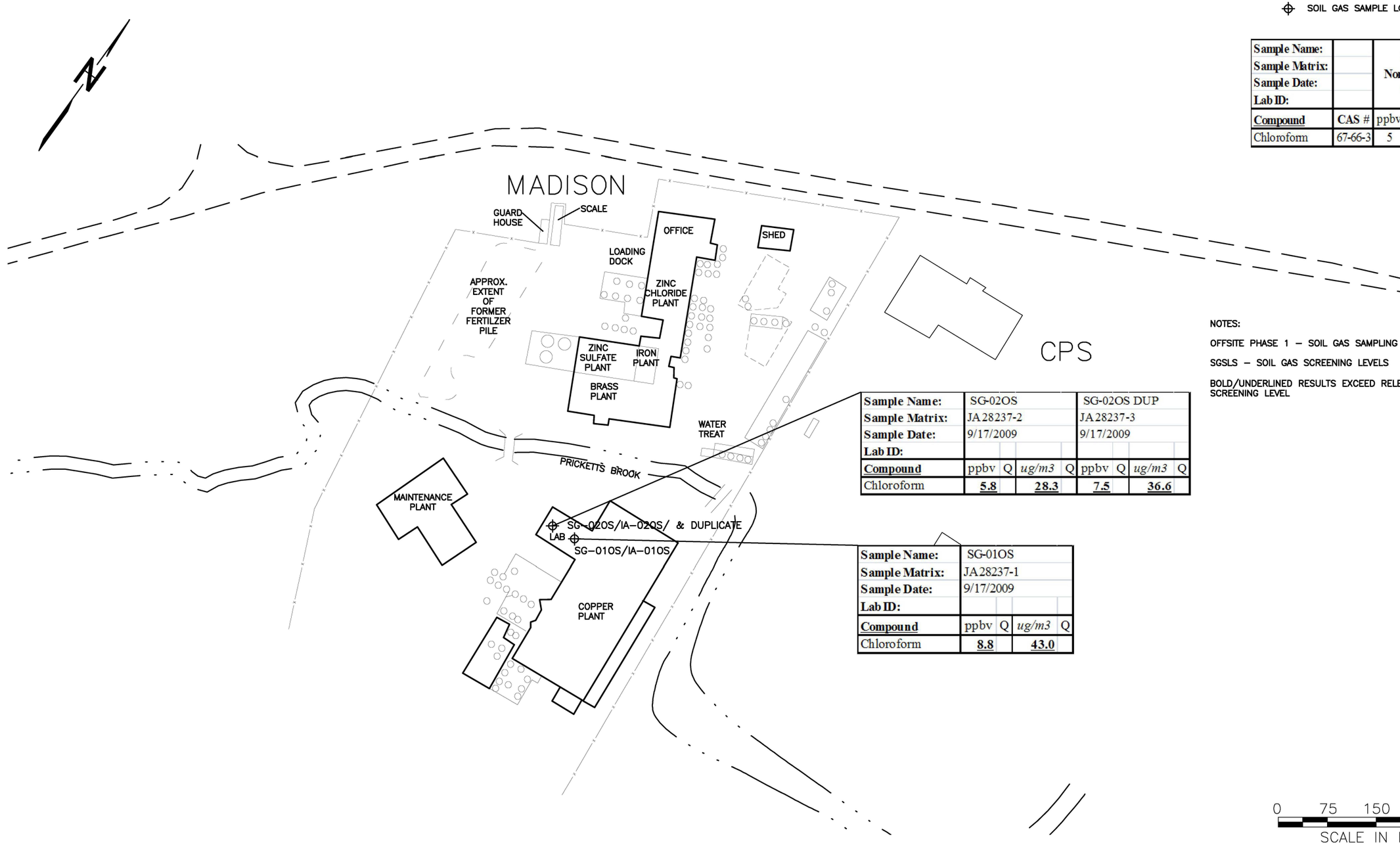
FIGURE 1
SITE LOCATION MAP
CPS/MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY

P:\Active Projects\Ciba\Figure 1 - Site Location Map

LEGEND

⊕ SOIL GAS SAMPLE LOCATION

Sample Name:		NJDEP Nonresidential SGSLs	
Sample Matrix:			
Sample Date:			
Lab ID:			
Compound	**CAS #**	ppbv	*µg/m³*
Chloroform	67-66-3	5	24



Sample Name:	SG-02OS				SG-02OS DUP			
Sample Matrix:	JA28237-2				JA28237-3			
Sample Date:	9/17/2009				9/17/2009			
Lab ID:								
Compound	ppbv	Q	*ug/m3*	Q	ppbv	Q	*ug/m3*	Q
Chloroform	**5.8**		**28.3**		**7.5**		**36.6**	

Sample Name:	SG-01OS			
Sample Matrix:	JA28237-1			
Sample Date:	9/17/2009			
Lab ID:				
Compound	ppbv	Q	*ug/m3*	Q
Chloroform	**8.8**		**43.0**	

NOTES:

OFFSITE PHASE 1 – SOIL GAS SAMPLING IN COPPER PLANT

SGSLS – SOIL GAS SCREENING LEVELS

BOLD/UNDERLINED RESULTS EXCEED RELEVANT VAPOR INTRUSION SCREENING LEVEL

0 75 150 300

SCALE IN FEET

REV.	DATE	STATUS	BY

MACTEC PROJECT No. 3650080108
DRAWING: OFF-SITE VIWP

PREPARED/DATE: STR 05/08/09

CHECKED/DATE: EJ 05/08/09

MACTEC

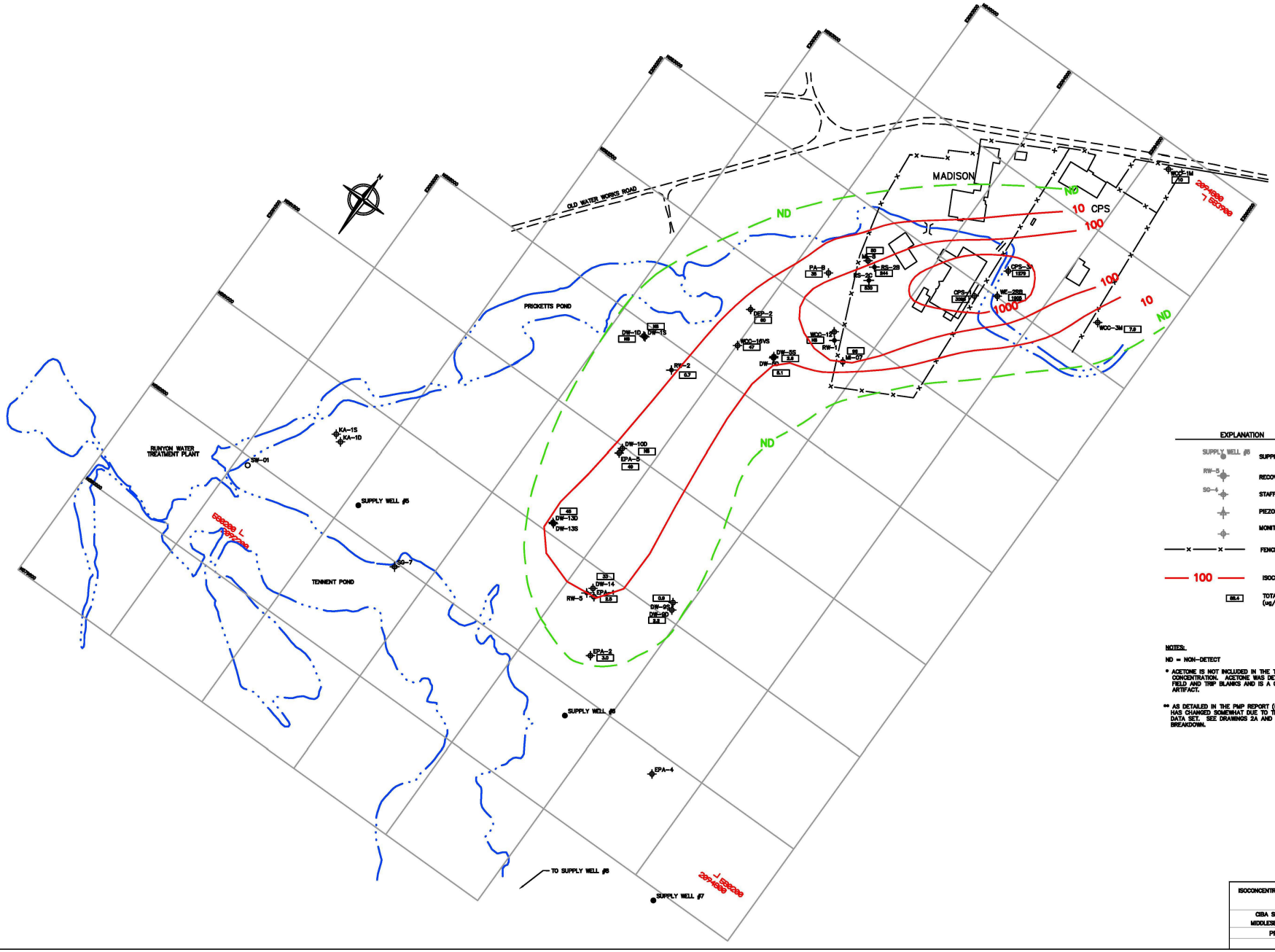
MACTEC Engineering and Consulting
200 American Metro Boulevard, Suite 113
Hamilton, NJ 08619

FIGURE 2
OFF-SITE SOIL GAS SAMPLE RESULTS
CPS / MADISON SUPERFUND SITE
OLD BRIDGE, NEW JERSEY

P:\CADD\CIBA\CURRENT DRAWINGS\FIG 2.DWG Mon, 07 Dec 2009 – 4:03pm strudkin

APPENDIX A

REFERENCE DATA: PREVIOUS GROUNDWATER INVESTIGATIONS



EXPLANATION

- SUPPLY WELL #6 — SUPPLY WELL
- RW-5 — RECOVERY WELL
- SG-4 — STAFF GAUGE
- PIEZOMETER
- MONITORING WELL
- FENCE LINE
- 100 — ISOCONCENTRATION CONTOUR
- 88.4 — TOTAL VOLATILE CONCENTRATION* (ug/l)

NOTES:

ND = NON-DETECT

* ACETONE IS NOT INCLUDED IN THE TOTAL VOLATILE CONCENTRATION. ACETONE WAS DETECTED IN THE FIELD AND TRIP BLANKS AND IS A COMMON LABORATORY ARTIFACT.

** AS DETAILED IN THE FMP REPORT (03/04) THE PLUME DELINEATION HAS CHANGED SOMEWHAT DUE TO THE INCLUSION OF MBTE INTO THE DATA SET. SEE DRAWINGS 2A AND 2B FOR THE CONSTITUENT BREAKDOWN.

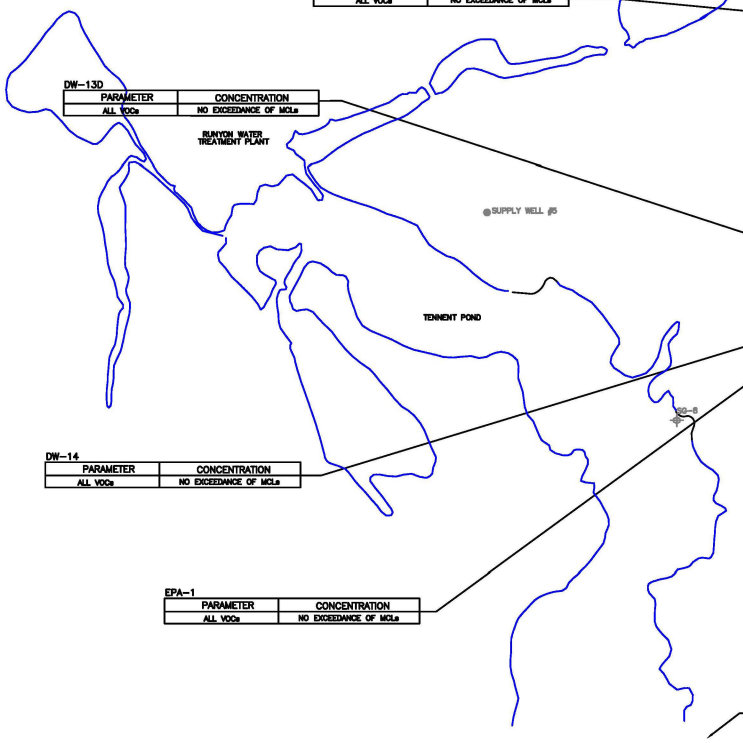
0 200 FT.
APPROXIMATE SCALE

ISOCONCENTRATION MAP OF TOTAL VOLATILE ORGANICS
JUNE 2007

CIBA SPECIALITY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

PREPARED AUGUST 2007

FIGURE: 3B



PA-8

PARAMETER	CONCENTRATION
BENZENE	2.3

MI-8

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	15
1,2-DICHLOROETHANE	5.6
1,1-DICHLOROETHENE	2.4
TRICHLOROETHENE	2.0
BENZENE	1.8

RS-2B

PARAMETER	CONCENTRATION
CHLOROBENZENE	60
1,2,4-TRICHLOROBENZENE	29
BENZENE	21
1,2-DICHLOROETHANE	13
VINYL CHLORIDE	4.7
TRICHLOROETHENE	3.2
1,1-DICHLOROETHENE	2.2
1,1,2,2-TETRACHLOROETHANE	1.4

RS-2C

PARAMETER	CONCENTRATION
CHLOROBENZENE	230
1,2,4-TRICHLOROBENZENE	33
BENZENE	32
1,2-DICHLOROETHANE	25
VINYL CHLORIDE	5.5
METHYLENE CHLORIDE	5.4
TRICHLOROETHENE	3.9
1,1,2,2-TETRACHLOROETHANE	1.5

CPS-3A

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	190
CHLOROBENZENE	180
cis-1,2-DICHLOROETHENE	130
1,2-DICHLOROETHANE	98
BENZENE	89
VINYL CHLORIDE	17
TRICHLOROETHENE	7.7
METHYLENE CHLORIDE	3.2
1,1,2,2-TETRACHLOROETHANE	2.4
TETRACHLOROETHENE	1.1

EXPLANATION

- SUPPLY WELL #8 — SUPPLY WELL
- RW-5 — RECOVERY WELL
- SG-4 — STAFF GAUGE
- PIEZOMETER
- MONITORING WELL
- FENCE LINE
- PLUME LINE BASED ON EXCEEDANCE OF MCL

CONCENTRATIONS ARE IN UG/L

WCC-1M

PARAMETER	CONCENTRATION
1,2-DICHLOROETHANE	5.8
TRICHLOROETHENE	1.6

WE-2RB

PARAMETER	CONCENTRATION
CHLOROBENZENE	390
1,2,4-TRICHLOROBENZENE	300
1,4-DICHLOROBENZENE	85
1,2-DICHLOROETHANE	54
BENZENE	27
1,1,2,2-TETRACHLOROETHANE	11
METHYLENE CHLORIDE	9.1
TRICHLOROETHENE	8.0
VINYL CHLORIDE	3.3
TETRACHLOROETHENE	2.9

DEP-2

PARAMETER	CONCENTRATION
BENZENE	4.0
1,1,2,2-TETRACHLOROETHANE	1.2

WCC-16VS

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-1S

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-1D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

RW-2

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

WCC-3M

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

CPS-1

PARAMETER	CONCENTRATION
TOLUENE	1800
CHLOROBENZENE	810
BENZENE	64
1,2,4-TRICHLOROBENZENE	31
METHYLENE CHLORIDE	21
1,2-DICHLOROETHANE	14
VINYL CHLORIDE	5.8
1,1,2,2-TETRACHLOROETHANE	4.0 U
1,1,2-TRICHLOROETHANE	4.0 U
1,1-DICHLOROETHENE	4.0 U
TRICHLOROETHENE	4.0 U
TETRACHLOROETHENE	4.0 U

WCC-12

PARAMETER	CONCENTRATION
NOT SAMPLED	

MI-7

PARAMETER	CONCENTRATION
MBTE	93

DW-5S

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-5D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-13D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-10D

PARAMETER	CONCENTRATION
NOT SAMPLED	

EPA-5

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-9D

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-9S

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

DW-14

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

EPA-1

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

EPA-2

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

NOTES:

PARAMETER	MCL – UG/L
METHYLENE CHLORIDE	3
VINYL CHLORIDE	2
1,1-DICHLOROETHENE	2
1,1-DICHLOROETHANE	50
1,2-DICHLOROETHENE (TOTAL)	(70–100)
1,2-DICHLOROETHANE	2
TRICHLOROETHENE	1
BENZENE	1
1,1,2-TRICHLOROETHANE	3
TETRACHLOROETHENE	1
1,1,2,2-TETRACHLOROETHANE	1
CHLOROBENZENE	50
1,2-DICHLOROBENZENE	600
1,4-DICHLOROBENZENE	75
1,2,4-TRICHLOROBENZENE	9
METHYL-T-BUTYL ETHER (MBTE)	70
TOLUENE	1000

MCL = MAXIMUM CONTAMINANT LEVEL

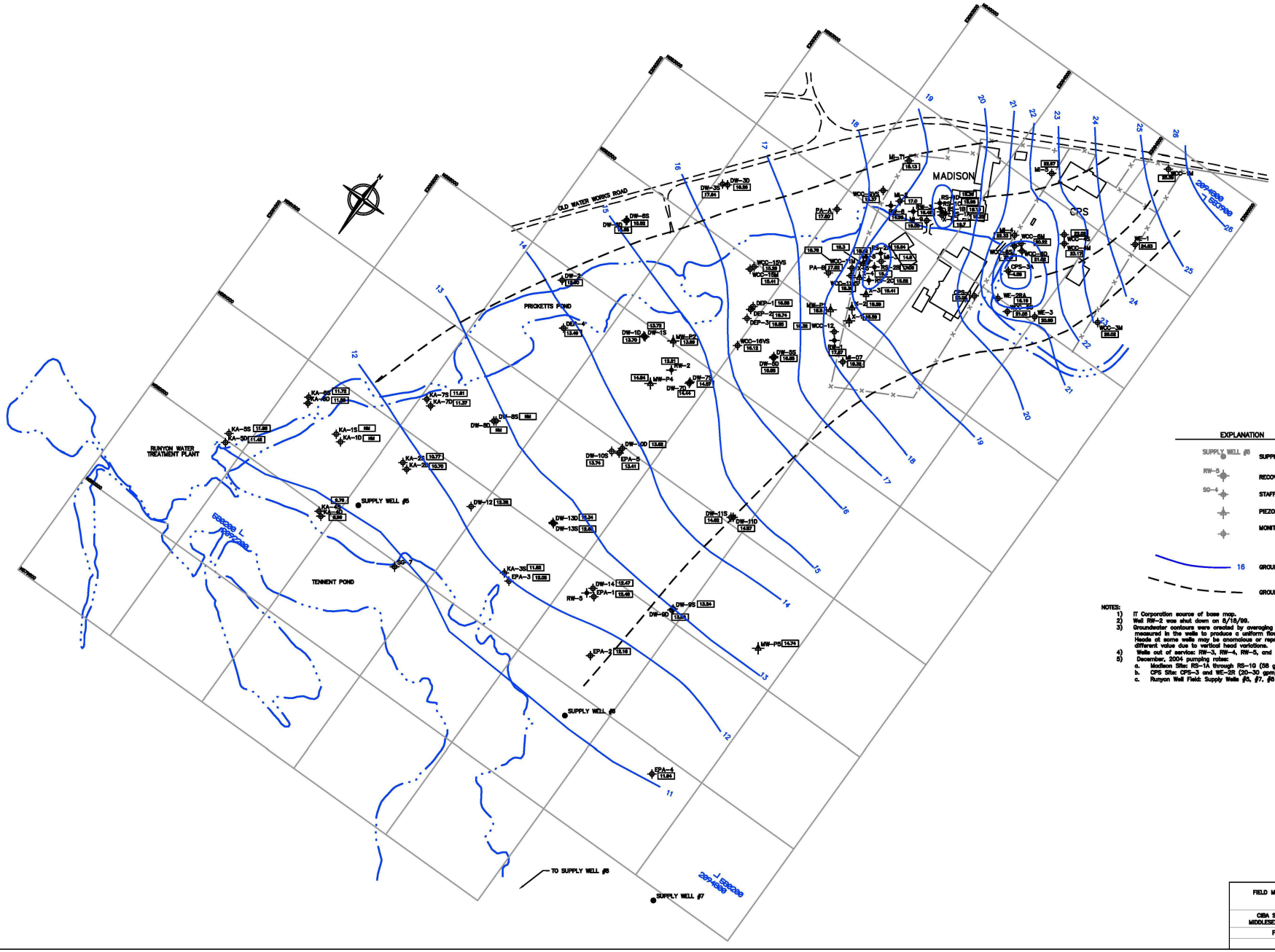
CONCENTRATIONS ARE IN UG/L

0 200 FT.
APPROXIMATE SCALE

PLUME OF VOLATILE ORGANICS
BASED ON EXCEEDANCE OF MCLs
JUNE 2007

CIBA SPECIALTY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

PREPARED AUGUST 2007
FIGURE: 2B



NOTES:

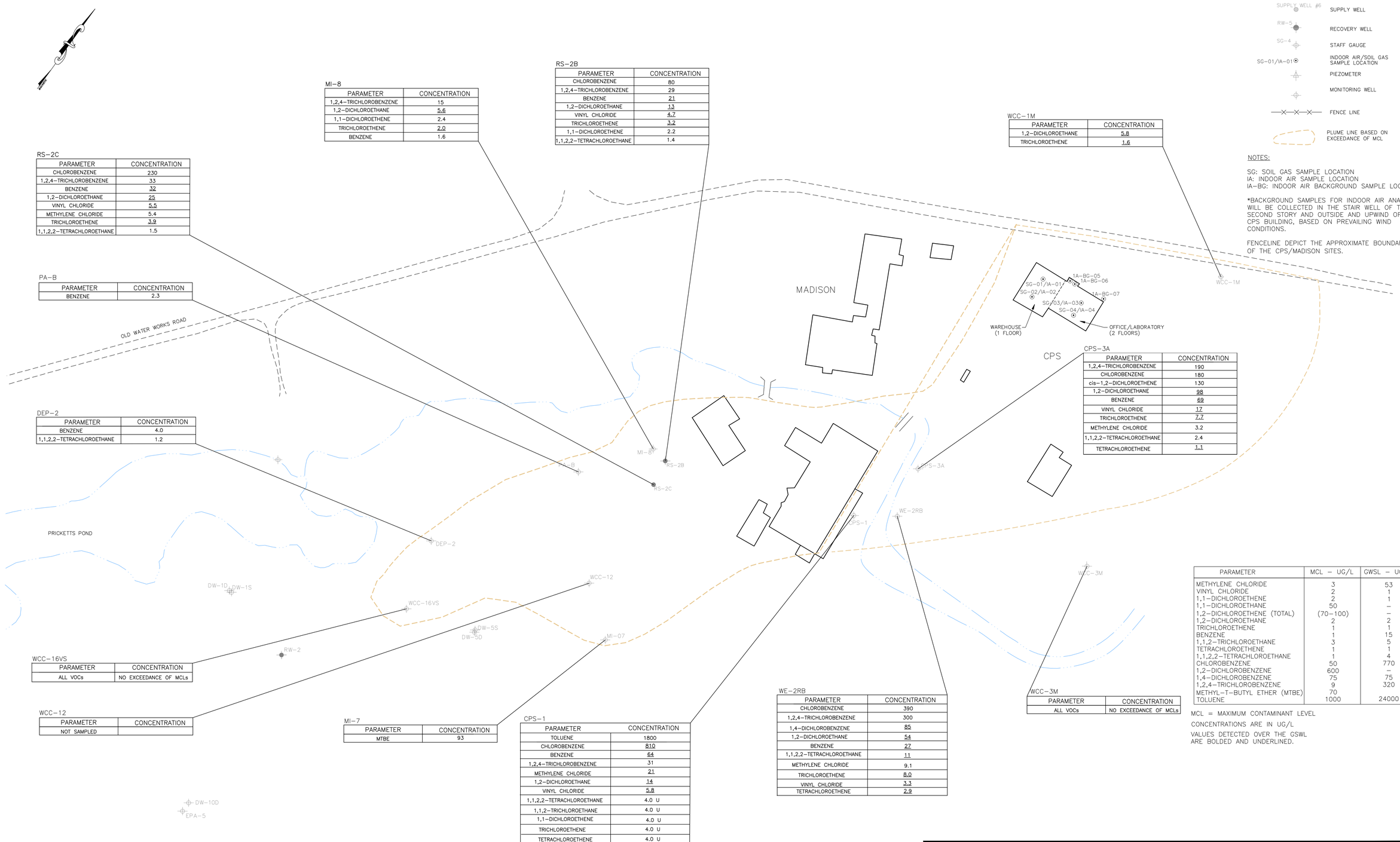
1) IT Corporation source of base map.
2) Well RW-2 was shut down on 6/18/99.
3) Groundwater contours were created by averaging the hydraulic heads measured in the wells to produce a uniform flow across the site. Heads at some wells may be anomalous or represent a slightly different value due to vertical head variations.
4) Wells out of service: RW-3, RW-4, RW-5, and RW-6.
5) December, 2004 pumping rates:
   a. Madison Site: RS-1A through RS-1G (55 gpm); RS-2B and -C (20 gpm)
   b. CPS Site: CPS-3 and WE-2R (20-30 gpm)
   c. Runyon Well Field: Supply Wells #5, #7, #8 and the Rainy Well (5,200 gpm)

FIELD MEASURED GROUND WATER CONTOURS
JUNE 2007

CIBA SPECIALTY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

PREPARED AUGUST 2007

FIGURE: 1B



LEGEND

- SUPPLY WELL #6 — SUPPLY WELL
- RW-5 — RECOVERY WELL
- SG-4 — STAFF GAUGE
- SG-01/IA-01 — INDOOR AIR/SOIL GAS SAMPLE LOCATION
- PIEZOMETER
- MONITORING WELL
- FENCE LINE
- PLUME LINE BASED ON EXCEEDANCE OF MCL

NOTES:

SG: SOIL GAS SAMPLE LOCATION
IA: INDOOR AIR SAMPLE LOCATION
IA-BG: INDOOR AIR BACKGROUND SAMPLE LOCATION

*BACKGROUND SAMPLES FOR INDOOR AIR ANALYSIS WILL BE COLLECTED IN THE STAIR WELL OF THE SECOND STORY AND OUTSIDE AND UPWIND OF THE CPS BUILDING, BASED ON PREVAILING WIND CONDITIONS.

FENCELINE DEPICT THE APPROXIMATE BOUNDARIES OF THE CPS/MADISON SITES.

MI-8

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	15
1,2-DICHLOROETHANE	5.6
1,1-DICHLOROETHENE	2.4
TRICHLOROETHENE	2.0
BENZENE	1.6

RS-2B

PARAMETER	CONCENTRATION
CHLOROBENZENE	80
1,2,4-TRICHLOROBENZENE	29
BENZENE	21
1,2-DICHLOROETHANE	13
VINYL CHLORIDE	4.7
TRICHLOROETHENE	3.2
1,1-DICHLOROETHENE	2.2
1,1,2,2-TETRACHLOROETHANE	1.4

WCC-1M

PARAMETER	CONCENTRATION
1,2-DICHLOROETHANE	5.8
TRICHLOROETHENE	1.6

RS-2C

PARAMETER	CONCENTRATION
CHLOROBENZENE	230
1,2,4-TRICHLOROBENZENE	33
BENZENE	32
1,2-DICHLOROETHANE	25
VINYL CHLORIDE	5.5
METHYLENE CHLORIDE	5.4
TRICHLOROETHENE	3.9
1,1,2,2-TETRACHLOROETHANE	1.5

PA-B

PARAMETER	CONCENTRATION
BENZENE	2.3

DEP-2

PARAMETER	CONCENTRATION
BENZENE	4.0
1,1,2,2-TETRACHLOROETHANE	1.2

CPS-3A

PARAMETER	CONCENTRATION
1,2,4-TRICHLOROBENZENE	190
CHLOROBENZENE	180
cis-1,2-DICHLOROETHENE	130
1,2-DICHLOROETHANE	98
BENZENE	69
VINYL CHLORIDE	17
TRICHLOROETHENE	7.7
METHYLENE CHLORIDE	3.2
1,1,2,2-TETRACHLOROETHANE	2.4
TETRACHLOROETHENE	1.1

WCC-16VS

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

WCC-12

PARAMETER	CONCENTRATION
NOT SAMPLED	

MI-7

PARAMETER	CONCENTRATION
MTBE	93

CPS-1

PARAMETER	CONCENTRATION
TOLUENE	1800
CHLOROBENZENE	810
BENZENE	64
1,2,4-TRICHLOROBENZENE	31
METHYLENE CHLORIDE	21
1,2-DICHLOROETHANE	14
VINYL CHLORIDE	5.8
1,1,2,2-TETRACHLOROETHANE	4.0 U
1,1,2-TRICHLOROETHANE	4.0 U
1,1-DICHLOROETHENE	4.0 U
TRICHLOROETHENE	4.0 U
TETRACHLOROETHENE	4.0 U

WE-2RB

PARAMETER	CONCENTRATION
CHLOROBENZENE	390
1,2,4-TRICHLOROBENZENE	300
1,4-DICHLOROBENZENE	85
1,2-DICHLOROETHANE	54
BENZENE	27
1,1,2,2-TETRACHLOROETHANE	11
METHYLENE CHLORIDE	9.1
TRICHLOROETHENE	8.0
VINYL CHLORIDE	3.3
TETRACHLOROETHENE	2.9

WCC-3M

PARAMETER	CONCENTRATION
ALL VOCs	NO EXCEEDANCE OF MCLs

PARAMETER	MCL – UG/L	GWSL – UG/L
METHYLENE CHLORIDE	3	53
VINYL CHLORIDE	2	1
1,1-DICHLOROETHENE	2	1
1,1-DICHLOROETHANE	50	–
1,2-DICHLOROETHENE (TOTAL)	(70-100)	–
1,2-DICHLOROETHANE	2	2
TRICHLOROETHENE	1	1
BENZENE	1	15
1,1,2-TRICHLOROETHANE	3	5
TETRACHLOROETHENE	1	1
1,1,2,2-TETRACHLOROETHANE	1	4
CHLOROBENZENE	50	770
1,2-DICHLOROBENZENE	600	–
1,4-DICHLOROBENZENE	75	75
1,2,4-TRICHLOROBENZENE	9	320
METHYL-T-BUTYL ETHER (MTBE)	70	
TOLUENE	1000	24000

MCL = MAXIMUM CONTAMINANT LEVEL

CONCENTRATIONS ARE IN UG/L

VALUES DETECTED OVER THE GSWL ARE BOLDED AND UNDERLINED.

MACTEC
200 AMERICAN METRO BLVD, SUITE 113
HAMILTON, NEW JERSEY 08619
609-936-0700

CLIENT

CIBA SPECIALITY CHEMICALS CORPORATION
MIDDLESEX COUNTY, OLD BRIDGE, NEW JERSEY

FIGURE 2
GROUND WATER SAMPLING RESULTS AND EXTENT OF THE IMPACT AREA ABOVE MCL's
CPS ON-SITE VAPOR INTRUSION INVESTIGATION WORK PLAN

PROJ. NO. 3480070242-01
DWG. NO.
REV. 0

P:\ACTIVE PROJECTS\CIBA\FIGURE 3 AND 4.DWG, DATE: 05/12/2009 03:11:09PM Layout: FIGURE 2 strudwin

APPENDIX B

PHOTO LOG

Photograph 1: Concrete core taken from laboratory for installation of permanent probe SG-02-OS

Photograph 2: Sample collection of SG-01-OS in break room.

Photograph 3: Sample collection of SG-02-OS and duplicate in laboratory.

APPENDIX C

FIELD LOGS

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS / Madison Client: Ciba Location ID: SG-01 OS

Project Number: 36508010 8 Collector: Emily Jackson Date: 9/17/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		INDOOR AIR - BASEMENT		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	FC236	Flow Regulator No:		Flow Regulator No:		Flow Regulator No:	
Flow Rate (mL/min):	2 in 30 min	Flow Rate (mL/min):		Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial No:	A410	Canister Serial No:		Canister Serial No:		Canister Serial No:	
Start Date/Time:	13:05	Start Date/Time:		Start Date/Time:		Start Date/Time:	
Start Pressure ("Hg):	24	Start Pressure ("Hg):		Start Pressure ("Hg):		Start Pressure ("Hg):	
Stop Date/Time:	13:32	Stop Date/Time:		Stop Date/Time:		Stop Date/Time:	
Stop Pressure ("Hg):	1	Stop Pressure ("Hg):		Stop Pressure ("Hg):		Stop Pressure ("Hg):	
Sample ID:		Sample ID:		Sample ID:		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	N/A 1st floor	Story/Level:		Story/Level:		Direction from Building:	
Floor Slab Thickness:	8"	Room:		Room:		Distance from Building:	
Potential Vapor Entry Points:	floor drains	Potential Vapor Entry Points:		Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:	tiled	Floor Surface:		Floor Surface:		Ground Surface:	
Noticable Odor:	none	Noticable Odor:		Noticable Odor:		Noticable Odor:	
PID Reading (ppb):	none	PID Reading (ppb):		PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:	1.5' bgs	Intake Height:		Intake Height:		Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:	Y, 0%	Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

Madison breakroom

MACTEC

107 Audubon Road, Wakefield, MA 01880

AIR AND SOIL VAPOR SAMPLING RECORD

Project Name: CPS Madison Client: Ciba Location ID: SB-0205

Project Number: 365080108 Collector: emily jackson Date: 9/17/09

SUMMA Canister Record Information:

SUBSLAB SOIL VAPOR SAMPLE		~~INDOOR AIR - BASEMENT~~ DUP		INDOOR AIR - FIRST FLOOR		ASSOCIATED AMBIENT	
Flow Regulator No:	FC106	Flow Regulator No:	FC379	Flow Regulator No:		Flow Regulator No:	
Flow Rate (mL/min):	1hr	Flow Rate (mL/min):	1hr	Flow Rate (mL/min):		Flow Rate (mL/min):	
Canister Serial No:	A802	Canister Serial No:	A791	Canister Serial No:		Canister Serial No:	
Start Date/Time:	12:53	Start Date/Time:	12:53	Start Date/Time:		Start Date/Time:	
Start Pressure ("Hg):	30	Start Pressure ("Hg):	30	Start Pressure ("Hg):		Start Pressure ("Hg):	
Stop Date/Time:	13:57	Stop Date/Time:	13:57	Stop Date/Time:		Stop Date/Time:	
Stop Pressure ("Hg):	5	Stop Pressure ("Hg):	4	Stop Pressure ("Hg):		Stop Pressure ("Hg):	
Sample ID:		Sample ID:		Sample ID:		Sample ID:	

Other Sampling Information:

Finished Basement, Crawl Space, Unfinished Basement	1st floor	Story/Level:		Story/Level:		Direction from Building:	
Floor Slab Thickness:	8"	Room:		Room:		Distance from Building:	
Potential Vapor Entry Points:	Floor drains	Potential Vapor Entry Points:		Potential Vapor Entry Points:		Distance from Roadway:	
Floor Surface:	tiled	Floor Surface:		Floor Surface:		Ground Surface:	
Noticable Odor:	none	Noticable Odor:		Noticable Odor:		Noticable Odor:	
PID Reading (ppb):	none	PID Reading (ppb):		PID Reading (ppb):		PID Reading (ppb):	
Intake Depth/Height:	1.5' bgs	Intake Height:		Intake Height:		Intake Hieght Above Ground Surface:	
Helium Test Conducted? Breakthrough %:	Y, 0%	Indoor Air Temp:		Indoor Air Temp:		Intake Tubing Used?	

Comments/Location Sketch:

laboratory

MACTEC

200 American Metro Blvd., Suite 113, Hamilton, NJ 08901

APPENDIX D

SOIL GAS SAMPLES – SEPTEMBER 2009
LABORATORY ANALYTICAL DATA REPORTS

New Jersey ACCUTEST Laboratories

IT'S ALL IN THE CHEMISTRY

12/03/09

Technical Report for

Mactec

CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Accutest Job Number: JA28237

Sampling Date: 09/17/09

Report to:

Mactec

vhlieu@mactec.com

ATTN: Vanthuy Lieu

Total number of pages in report: **423**

ACCREDITED IN ACCORDANCE WITH nelac

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

David N. Speis
VP Ops, Laboratory Director

ACCUTEST LABORATORIES 50 YEARS 1956-2006

Client Service contact: Marty Vitanza 732-329-0200

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC, PA, RI, SC, TN, VA, WV

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Test results relate only to samples analyzed.

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Accutest LabLink@532794 13:31 03-Dec-2009

Sample Summary

Mactec

Job No: JA28237

CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
JA28237-1	09/17/09	13:32	EV	09/17/09	AIR	Air	SG-0105
JA28237-2	09/17/09	13:57	EV	09/17/09	AIR	Air	SG-0205
JA28237-3	09/17/09	13:57	EV	09/17/09	AIR	Air	SG-0205 DUP

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	Mactec	**Job No**	JA28237
Site:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ	**Report Date**	10/16/2009 3:41:57 P

On 09/17/2009, 3 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at Accutest Laboratories. Samples were intact and properly preserved, unless noted below. An Accutest Job Number of JA28237 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GCMS By Method TO-15

Matrix: AIR **Batch ID:** V3W524

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JA28296-1DUP were used as the QC samples indicated.
- RPD(s) for Duplicate for Propylene are outside control limits for sample JA28296-1DUP. Outside control limits due to matrix interference.

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover

Sample Results

Report of Analysis

Accutest LabLink@532794 13:31 03-Dec-2009

Report of Analysis

Client Sample ID: SG-0105
Lab Sample ID: JA28237-1 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A410 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W12871.D	1	10/05/09	YMH	n/a	n/a	V3W524
Run #2	3W12875.D	1	10/05/09	YMH	n/a	n/a	V3W524

	Initial Volume
Run #1	100 ml
Run #2	20.0 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	18.1	0.80	0.16	ppbv		43.0	1.9	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.80	0.14	ppbv		ND	1.8	ug/m3
71-43-2	78.11	Benzene	7.0	0.80	0.085	ppbv		22	2.6	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.80	0.11	ppbv		ND	5.4	ug/m3
75-25-2	252.8	Bromoform	ND	0.80	0.088	ppbv		ND	8.3	ug/m3
74-83-9	94.94	Bromomethane	ND	0.80	0.096	ppbv		ND	3.1	ug/m3
593-60-2	106.9	Bromoethene	ND	0.80	0.073	ppbv		ND	3.5	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.80	0.13	ppbv		ND	4.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.80	0.13	ppbv		ND	2.5	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.80	0.10	ppbv		ND	3.7	ug/m3
75-00-3	64.52	Chloroethane	ND	0.80	0.16	ppbv		ND	2.1	ug/m3
67-66-3	119.4	Chloroform	8.8	0.80	0.11	ppbv		43	3.9	ug/m3
74-87-3	50.49	Chloromethane	ND	0.80	0.19	ppbv		ND	1.7	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.80	0.12	ppbv		ND	2.5	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.80	0.087	ppbv		ND	4.1	ug/m3
56-23-5	153.8	Carbon tetrachloride	ND	0.80	0.088	ppbv		ND	5.0	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.80	0.24	ppbv		ND	2.8	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.80	0.13	ppbv		ND	3.2	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.80	0.18	ppbv		ND	3.2	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.80	0.082	ppbv		ND	6.1	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.80	0.11	ppbv		ND	3.7	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.80	0.25	ppbv		ND	2.9	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.44	0.80	0.095	ppbv	J	2.2	4.0	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.80	0.14	ppbv		ND	6.8	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.80	0.11	ppbv		ND	3.2	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.80	0.076	ppbv		ND	3.6	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.80	0.15	ppbv		ND	4.8	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.80	0.064	ppbv		ND	3.6	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-0105		
Lab Sample ID:	JA28237-1	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A410	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	25.0	2.0	0.31	ppbv		47.1	3.8	ug/m3
100-41-4	106.2	Ethylbenzene	18.5	0.80	0.077	ppbv		80.4	3.5	ug/m3
141-78-6	88	Ethyl Acetate	22.4	0.80	0.21	ppbv		80.6	2.9	ug/m3
622-96-8	120.2	4-Ethyltoluene	6.4	0.80	0.17	ppbv		31	3.9	ug/m3
76-13-1	187.4	Freon 113	1.7	0.80	0.088	ppbv		13	6.1	ug/m3
76-14-2	170.9	Freon 114	ND	0.80	0.088	ppbv		ND	5.6	ug/m3
142-82-5	100.2	Heptane	2.4	0.80	0.10	ppbv		9.8	3.3	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.80	0.17	ppbv		ND	8.5	ug/m3
110-54-3	86.17	Hexane	2.8	0.80	0.077	ppbv		9.9	2.8	ug/m3
591-78-6	100	2-Hexanone	4.2	0.80	0.12	ppbv		17	3.3	ug/m3
67-63-0	60.1	Isopropyl Alcohol	17.2	0.80	0.14	ppbv		42.3	2.0	ug/m3
75-09-2	84.94	Methylene chloride	1.3	0.80	0.10	ppbv		4.5	2.8	ug/m3
78-93-3	72.11	Methyl ethyl ketone	11.5	0.80	0.16	ppbv		33.9	2.4	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.80	0.18	ppbv		ND	3.3	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.80	0.089	ppbv		ND	2.9	ug/m3
115-07-1	42	Propylene	ND	2.0	0.25	ppbv		ND	3.4	ug/m3
100-42-5	104.1	Styrene	0.51	0.80	0.074	ppbv	J	2.2	3.4	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.80	0.098	ppbv		ND	4.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.80	0.091	ppbv		ND	5.5	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.80	0.085	ppbv		ND	4.4	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.80	0.26	ppbv		ND	5.9	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	14.8	0.80	0.086	ppbv		72.8	3.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	3.1	0.80	0.10	ppbv		15	3.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.80	0.081	ppbv		ND	3.7	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	0.97	0.80	0.092	ppbv		2.9	2.4	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.69	0.16	0.083	ppbv		4.7	1.1	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.80	0.13	ppbv		ND	2.4	ug/m3
108-88-3	92.14	Toluene	221 [a]	4.0	0.36	ppbv		833 [a]	15	ug/m3
79-01-6	131.4	Trichloroethylene	0.93	0.16	0.074	ppbv		5.0	0.86	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.78	0.80	0.085	ppbv	J	4.4	4.5	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.80	0.092	ppbv		ND	2.0	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.80	0.18	ppbv		ND	2.8	ug/m3
	106.2	m,p-Xylene	83.3	0.80	0.18	ppbv		362	3.5	ug/m3
95-47-6	106.2	o-Xylene	18.3	0.80	0.094	ppbv		79.5	3.5	ug/m3
1330-20-7	106.2	Xylenes (total)	102	0.80	0.094	ppbv		443	3.5	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	98%	90%	65-128%

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-0105			
Lab Sample ID:	JA28237-1		**Date Sampled:**	09/17/09
Matrix:	AIR - Air	Summa ID: A410	**Date Received:**	09/17/09
Method:	TO-15		**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ			

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest LabLink@532794 13:31 03-Dec-2009

Report of Analysis

Client Sample ID: SG-0205
Lab Sample ID: JA28237-2 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A802 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W12872.D	1	10/05/09	YMH	n/a	n/a	V3W524
Run #2	3W12876.D	1	10/05/09	YMH	n/a	n/a	V3W524

	Initial Volume
Run #1	100 ml
Run #2	40.0 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	58.7	0.80	0.16	ppbv		139	1.9	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.80	0.14	ppbv		ND	1.8	ug/m3
71-43-2	78.11	Benzene	4.4	0.80	0.085	ppbv		14	2.6	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.80	0.11	ppbv		ND	5.4	ug/m3
75-25-2	252.8	Bromoform	ND	0.80	0.088	ppbv		ND	8.3	ug/m3
74-83-9	94.94	Bromomethane	ND	0.80	0.096	ppbv		ND	3.1	ug/m3
593-60-2	106.9	Bromoethene	ND	0.80	0.073	ppbv		ND	3.5	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.80	0.13	ppbv		ND	4.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.80	0.13	ppbv		ND	2.5	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.80	0.10	ppbv		ND	3.7	ug/m3
75-00-3	64.52	Chloroethane	ND	0.80	0.16	ppbv		ND	2.1	ug/m3
67-66-3	119.4	Chloroform	5.8	0.80	0.11	ppbv		28	3.9	ug/m3
74-87-3	50.49	Chloromethane	ND	0.80	0.19	ppbv		ND	1.7	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.80	0.12	ppbv		ND	2.5	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.80	0.087	ppbv		ND	4.1	ug/m3
56-23-5	153.8	Carbon tetrachloride	0.62	0.80	0.088	ppbv	J	3.9	5.0	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.80	0.24	ppbv		ND	2.8	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.80	0.13	ppbv		ND	3.2	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.80	0.18	ppbv		ND	3.2	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.80	0.082	ppbv		ND	6.1	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.80	0.11	ppbv		ND	3.7	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.80	0.25	ppbv		ND	2.9	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	0.48	0.80	0.095	ppbv	J	2.4	4.0	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.80	0.14	ppbv		ND	6.8	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.80	0.11	ppbv		ND	3.2	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.80	0.076	ppbv		ND	3.6	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.80	0.15	ppbv		ND	4.8	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.80	0.064	ppbv		ND	3.6	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-0205		
Lab Sample ID:	JA28237-2	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A802	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	33.5	2.0	0.31	ppbv		63.1	3.8	ug/m3
100-41-4	106.2	Ethylbenzene	13.9	0.80	0.077	ppbv		60.4	3.5	ug/m3
141-78-6	88	Ethyl Acetate	1.8	0.80	0.21	ppbv		6.5	2.9	ug/m3
622-96-8	120.2	4-Ethyltoluene	5.5	0.80	0.17	ppbv		27	3.9	ug/m3
76-13-1	187.4	Freon 113	ND	0.80	0.088	ppbv		ND	6.1	ug/m3
76-14-2	170.9	Freon 114	ND	0.80	0.088	ppbv		ND	5.6	ug/m3
142-82-5	100.2	Heptane	1.5	0.80	0.10	ppbv		6.1	3.3	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.80	0.17	ppbv		ND	8.5	ug/m3
110-54-3	86.17	Hexane	1.8	0.80	0.077	ppbv		6.3	2.8	ug/m3
591-78-6	100	2-Hexanone	2.5	0.80	0.12	ppbv		10	3.3	ug/m3
67-63-0	60.1	Isopropyl Alcohol	3.0	0.80	0.14	ppbv		7.4	2.0	ug/m3
75-09-2	84.94	Methylene chloride	0.87	0.80	0.10	ppbv		3.0	2.8	ug/m3
78-93-3	72.11	Methyl ethyl ketone	7.4	0.80	0.16	ppbv		22	2.4	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.80	0.18	ppbv		ND	3.3	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.80	0.089	ppbv		ND	2.9	ug/m3
115-07-1	42	Propylene	1.9	2.0	0.25	ppbv	J	3.3	3.4	ug/m3
100-42-5	104.1	Styrene	0.46	0.80	0.074	ppbv	J	2.0	3.4	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.80	0.098	ppbv		ND	4.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.80	0.091	ppbv		ND	5.5	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.80	0.085	ppbv		ND	4.4	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.80	0.26	ppbv		ND	5.9	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	11.9	0.80	0.086	ppbv		58.5	3.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	2.5	0.80	0.10	ppbv		12	3.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.80	0.081	ppbv		ND	3.7	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.80	0.092	ppbv		ND	2.4	ug/m3
127-18-4	165.8	Tetrachloroethylene	0.52	0.16	0.083	ppbv		3.5	1.1	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.80	0.13	ppbv		ND	2.4	ug/m3
108-88-3	92.14	Toluene	191 [a]	2.0	0.18	ppbv		720 [a]	7.5	ug/m3
79-01-6	131.4	Trichloroethylene	ND	0.16	0.074	ppbv		ND	0.86	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.86	0.80	0.085	ppbv		4.8	4.5	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.80	0.092	ppbv		ND	2.0	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.80	0.18	ppbv		ND	2.8	ug/m3
	106.2	m,p-Xylene	64.7	0.80	0.18	ppbv		281	3.5	ug/m3
95-47-6	106.2	o-Xylene	14.4	0.80	0.094	ppbv		62.5	3.5	ug/m3
1330-20-7	106.2	Xylenes (total)	79.0	0.80	0.094	ppbv		343	3.5	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	101%	96%	65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-0205			
Lab Sample ID:	JA28237-2		**Date Sampled:**	09/17/09
Matrix:	AIR - Air	Summa ID: A802	**Date Received:**	09/17/09
Method:	TO-15		**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ			

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Accutest LabLink@532794 13:31 03-Dec-2009

Report of Analysis

Client Sample ID: SG-0205 DUP
Lab Sample ID: JA28237-3 **Date Sampled:** 09/17/09
Matrix: AIR - Air Summa ID: A791 **Date Received:** 09/17/09
Method: TO-15 **Percent Solids:** n/a
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3W12873.D	1	10/05/09	YMH	n/a	n/a	V3W524
Run #2	3W12877.D	1	10/05/09	YMH	n/a	n/a	V3W524

	Initial Volume
Run #1	100 ml
Run #2	25.0 ml

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	58.08	Acetone	14.6	0.80	0.16	ppbv		34.7	1.9	ug/m3
106-99-0	54.09	1,3-Butadiene	ND	0.80	0.14	ppbv		ND	1.8	ug/m3
71-43-2	78.11	Benzene	7.0	0.80	0.085	ppbv		22	2.6	ug/m3
75-27-4	163.8	Bromodichloromethane	ND	0.80	0.11	ppbv		ND	5.4	ug/m3
75-25-2	252.8	Bromoform	ND	0.80	0.088	ppbv		ND	8.3	ug/m3
74-83-9	94.94	Bromomethane	ND	0.80	0.096	ppbv		ND	3.1	ug/m3
593-60-2	106.9	Bromoethene	ND	0.80	0.073	ppbv		ND	3.5	ug/m3
100-44-7	126	Benzyl Chloride	ND	0.80	0.13	ppbv		ND	4.1	ug/m3
75-15-0	76.14	Carbon disulfide	ND	0.80	0.13	ppbv		ND	2.5	ug/m3
108-90-7	112.6	Chlorobenzene	ND	0.80	0.10	ppbv		ND	3.7	ug/m3
75-00-3	64.52	Chloroethane	ND	0.80	0.16	ppbv		ND	2.1	ug/m3
67-66-3	119.4	Chloroform	7.5	0.80	0.11	ppbv		37	3.9	ug/m3
74-87-3	50.49	Chloromethane	ND	0.80	0.19	ppbv		ND	1.7	ug/m3
107-05-1	76.53	3-Chloropropene	ND	0.80	0.12	ppbv		ND	2.5	ug/m3
95-49-8	126.6	2-Chlorotoluene	ND	0.80	0.087	ppbv		ND	4.1	ug/m3
56-23-5	153.8	Carbon tetrachloride	0.76	0.80	0.088	ppbv	J	4.8	5.0	ug/m3
110-82-7	84.16	Cyclohexane	ND	0.80	0.24	ppbv		ND	2.8	ug/m3
75-34-3	98.96	1,1-Dichloroethane	ND	0.80	0.13	ppbv		ND	3.2	ug/m3
75-35-4	96.94	1,1-Dichloroethylene	ND	0.80	0.18	ppbv		ND	3.2	ug/m3
106-93-4	187.9	1,2-Dibromoethane	ND	0.80	0.082	ppbv		ND	6.1	ug/m3
107-06-2	98.96	1,2-Dichloroethane	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
78-87-5	113	1,2-Dichloropropane	ND	0.80	0.11	ppbv		ND	3.7	ug/m3
123-91-1	88.12	1,4-Dioxane	ND	0.80	0.25	ppbv		ND	2.9	ug/m3
75-71-8	120.9	Dichlorodifluoromethane	ND	0.80	0.095	ppbv		ND	4.0	ug/m3
124-48-1	208.3	Dibromochloromethane	ND	0.80	0.14	ppbv		ND	6.8	ug/m3
156-60-5	96.94	trans-1,2-Dichloroethylene	ND	0.80	0.14	ppbv		ND	3.2	ug/m3
156-59-2	96.94	cis-1,2-Dichloroethylene	ND	0.80	0.11	ppbv		ND	3.2	ug/m3
10061-01-5	111	cis-1,3-Dichloropropene	ND	0.80	0.076	ppbv		ND	3.6	ug/m3
541-73-1	147	m-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
95-50-1	147	o-Dichlorobenzene	ND	0.80	0.15	ppbv		ND	4.8	ug/m3
106-46-7	147	p-Dichlorobenzene	ND	0.80	0.13	ppbv		ND	4.8	ug/m3
10061-02-6	111	trans-1,3-Dichloropropene	ND	0.80	0.064	ppbv		ND	3.6	ug/m3

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-0205 DUP		
Lab Sample ID:	JA28237-3	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A791	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
64-17-5	46.07	Ethanol	17.1	2.0	0.31	ppbv		32.2	3.8	ug/m3
100-41-4	106.2	Ethylbenzene	18.2	0.80	0.077	ppbv		79.1	3.5	ug/m3
141-78-6	88	Ethyl Acetate	ND	0.80	0.21	ppbv		ND	2.9	ug/m3
622-96-8	120.2	4-Ethyltoluene	7.7	0.80	0.17	ppbv		38	3.9	ug/m3
76-13-1	187.4	Freon 113	ND	0.80	0.088	ppbv		ND	6.1	ug/m3
76-14-2	170.9	Freon 114	ND	0.80	0.088	ppbv		ND	5.6	ug/m3
142-82-5	100.2	Heptane	1.8	0.80	0.10	ppbv		7.4	3.3	ug/m3
87-68-3	260.8	Hexachlorobutadiene	ND	0.80	0.17	ppbv		ND	8.5	ug/m3
110-54-3	86.17	Hexane	2.2	0.80	0.077	ppbv		7.8	2.8	ug/m3
591-78-6	100	2-Hexanone	2.5	0.80	0.12	ppbv		10	3.3	ug/m3
67-63-0	60.1	Isopropyl Alcohol	1.3	0.80	0.14	ppbv		3.2	2.0	ug/m3
75-09-2	84.94	Methylene chloride	ND	0.80	0.10	ppbv		ND	2.8	ug/m3
78-93-3	72.11	Methyl ethyl ketone	6.2	0.80	0.16	ppbv		18	2.4	ug/m3
108-10-1	100.2	Methyl Isobutyl Ketone	ND	0.80	0.18	ppbv		ND	3.3	ug/m3
1634-04-4	88.15	Methyl Tert Butyl Ether	ND	0.80	0.089	ppbv		ND	2.9	ug/m3
115-07-1	42	Propylene	0.92	2.0	0.25	ppbv	J	1.6	3.4	ug/m3
100-42-5	104.1	Styrene	0.60	0.80	0.074	ppbv	J	2.6	3.4	ug/m3
71-55-6	133.4	1,1,1-Trichloroethane	ND	0.80	0.098	ppbv		ND	4.4	ug/m3
79-34-5	167.9	1,1,2,2-Tetrachloroethane	ND	0.80	0.091	ppbv		ND	5.5	ug/m3
79-00-5	133.4	1,1,2-Trichloroethane	ND	0.80	0.085	ppbv		ND	4.4	ug/m3
120-82-1	181.5	1,2,4-Trichlorobenzene	ND	0.80	0.26	ppbv		ND	5.9	ug/m3
95-63-6	120.2	1,2,4-Trimethylbenzene	16.2	0.80	0.086	ppbv		79.6	3.9	ug/m3
108-67-8	120.2	1,3,5-Trimethylbenzene	3.5	0.80	0.10	ppbv		17	3.9	ug/m3
540-84-1	114.2	2,2,4-Trimethylpentane	ND	0.80	0.081	ppbv		ND	3.7	ug/m3
75-65-0	74.12	Tertiary Butyl Alcohol	ND	0.80	0.092	ppbv		ND	2.4	ug/m3
127-18-4	165.8	Tetrachloroethylene	2.1	0.16	0.083	ppbv		14	1.1	ug/m3
109-99-9	72.11	Tetrahydrofuran	ND	0.80	0.13	ppbv		ND	2.4	ug/m3
108-88-3	92.14	Toluene	183 [a]	3.2	0.28	ppbv		690 [a]	12	ug/m3
79-01-6	131.4	Trichloroethylene	1.7	0.16	0.074	ppbv		9.1	0.86	ug/m3
75-69-4	137.4	Trichlorofluoromethane	0.53	0.80	0.085	ppbv	J	3.0	4.5	ug/m3
75-01-4	62.5	Vinyl chloride	ND	0.80	0.092	ppbv		ND	2.0	ug/m3
108-05-4	86	Vinyl Acetate	ND	0.80	0.18	ppbv		ND	2.8	ug/m3
	106.2	m,p-Xylene	86.7	0.80	0.18	ppbv		377	3.5	ug/m3
95-47-6	106.2	o-Xylene	19.4	0.80	0.094	ppbv		84.3	3.5	ug/m3
1330-20-7	106.2	Xylenes (total)	106	0.80	0.094	ppbv		460	3.5	ug/m3

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
460-00-4	4-Bromofluorobenzene	100%	91%	65-128%

ND = Not detected MDL - Method Detection Limit J = Indicates an estimated value
RL = Reporting Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	SG-0205 DUP		
Lab Sample ID:	JA28237-3	**Date Sampled:**	09/17/09
Matrix:	AIR - Air Summa ID: A791	**Date Received:**	09/17/09
Method:	TO-15	**Percent Solids:**	n/a
Project:	CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ		

CAS No.	MW	Compound	Result	RL	MDL	Units	Q	Result	RL	Units

(a) Result is from Run# 2

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- Summa Canister and Flow Controller Log
- Sample Tracking Chronicle
- Internal Chain of Custody
- 2009 MDL Study - Method: TO-15

ACCUTEST Laboratories
www.accutest.com

AIR

CHAIN OF CUSTODY
Air Sampling Field Data Sheet

2235 US Highway 130, Dayton, NJ 08810
Tel: 732.329.0200 Fax: 732.329.3499

FED-EX Tracking #	Bottle Order Control #
Lab Quote #	Lab Job # JA28237

PAGE 1 OF 1

PN

Client / Reporting Information

Company Name: Mactec	Project Name: CPS/ Madison Superfund Site
Address: 200 American Metro Blvd	Street: Waterworks Rd
City: Hamilton State: NJ Zip: 08619	City: Old Bridge State: NJ
Project Contact: Emily Jackson E-mail: emjackson@mactec.com	Project #:
Phone #: 609.936.0700 Fax #: 609.689.2838	Client Purchase Order #:
Sampler(s) Name(s):	

Weather Parameters

Temperature (Fahrenheit)
Start: Maximum:
Stop: Minimum:

Atmoshpheric Pressure (inches of Hg)
Start: Maximum:
Stop: Minimum:

Other weather comment:

Requested Analysis

Lab Sample #	Field ID / Point of Collection	Air Type: Indoor (I) Soil Vap (SV) Ambient(A)	Sampling Equipment Info: Canister Serial #	Canister Size 6L or 1L	Flow Controller Serial #	Start Sampling Information: Date	Time (24 hr clock)	Canister Pressure (“Hg)	Interior Temp (F)	Sampler Init.	Stop Sampling Information: Date	Time (24 hr clock)	Canister Pressure (“Hg)	Interior Temp (F)	Sampler Init.
-1	SG-01OS	SV	A410	1L	FC236	9/17	13:05	24		EJ	9/17	13:32	1		EJ
-2	SG-02OS	↓	A802	1L	FC106	↓	12:53	30		EJ	↓	13:57	5		
-3	SG-02OS DUP	↓	A791	1L	FC379	↓	12:53	30		EJ	↓	13:57	4		

Turnaround Time (Business Days)

Standard - 15 Days	
10 Day	
5 Day	
3 Day	
2 Day	
1 Day	
Other	

Approved By:
Date:

Data Deliverable Information

All NJDEP TO-15 is mandatory Full T1

Comm A	
Comm B	
Reduced T2	
Full T1	
Other:	

Comments / Remarks

Summa

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date Time:	Received by:	Relinquished by:	Date Time:	Received by:
1	9/17/08 15:00	1 PDC	2		2
3		3	4		4
5		5	Custody Seal #		

4.1
4

JA28237: Chain of Custody
Page 1 of 3

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JA28237 **Client:** MACTEC-NJ **Immediate Client Services Action Required:** Yes

Date / Time Received: 9/17/2009 1500 **Delivery Method:** Client **Client Service Action Required at Login:** No

Project: CPS/MADISON **No. Coolers:** **Airbill #'s:**

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☐		☑	3. COC Present:	☑		☐
2. Custody Seals Intact:	☐		☑	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☐	☐	
2. Trip Blank listed on COC:	☐	☐	
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☐	☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☐	☑	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☐
5. Filtering instructions clear:	☐	☐	☐

Comments

NO ANALYSES ON COC

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

Sample Receipt Summary - Problem Resolution

Accutest Job Number: JA28237

CSR: Marty Vitanza **Response Date** 9/22/2009

Response: VTO15STD, per quote DK7/2009-346

Accutest Laboratories
V:732.329.0200

2235 US Highway 130
F: 732.329.3499

Dayton, New Jersey
www/accutest.com

JA28237: Chain of Custody
Page 3 of 3

Summa Canister and Flow Controller Log

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ
Received: 09/17/09

SUMMA CANISTERS

Shipping							Receiving						
Summa ID	L	Vac " Hg	Date Out	By	SCC Batch	SCC FileID	Sample Number	Date In	By	Vac " Hg	Pres psig	Final psig	Dil Fact
A410	1	29.4	09/11/09	FZ	CP3592	2W25443.D	JA28237-1	09/18/09	FZ	3			1
A802	1	29.4	09/11/09	FZ	CP3592	2W25443.D	JA28237-2	09/18/09	FZ	4			1
A791	1	29.4	09/11/09	FZ	CP3598	2W25482.D	JA28237-3	09/18/09	FZ	3.5			1

FLOW CONTROLLERS

Shipping					Receiving		
Flow Crtl ID	Date Out	By	cc/ min	Time hrs.	Date In	By	cc/ min
FC106	09/16/09	WMC	13.6	1	09/18/09	FZ	13.7
FC115	09/11/09	FZ	26.7	.5	09/18/09	FZ	25.3
FC172	09/11/09	FZ	26.7	.5	09/18/09	FZ	26.5
FC236	09/11/09	FZ	26.7	.5	09/18/09	FZ	26.5
FC238	09/11/09	FZ	26.7	.5	09/18/09	FZ	26.2
FC241	09/11/09	FZ	26.7	.5	09/18/09	FZ	25.8
FC379	09/16/09	WMC	13.6	1	09/18/09	FZ	12.6

Accutest Bottle Order(s):
MV-9/10/2009-3
TE-9/16/2009-5

Prep Date	Room Temp(F)	Bar Pres "Hg
09/11/09	70	29.92

Internal Sample Tracking Chronicle

Mactec

Job No: JA28237

CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
JA28237-1 SG-0105	Collected: 17-SEP-09 13:32 By: EV		Received: 17-SEP-09 By: MPC			
JA28237-1	TO-15	05-OCT-09 13:04	YMH			VTO15STD
JA28237-1	TO-15	05-OCT-09 15:46	YMH			VTO15STD
JA28237-2 SG-0205	Collected: 17-SEP-09 13:57 By: EV		Received: 17-SEP-09 By: MPC			
JA28237-2	TO-15	05-OCT-09 13:45	YMH			VTO15STD
JA28237-2	TO-15	05-OCT-09 16:25	YMH			VTO15STD
JA28237-3 SG-0205 DUP	Collected: 17-SEP-09 13:57 By: EV		Received: 17-SEP-09 By: MPC			
JA28237-3	TO-15	05-OCT-09 14:25	YMH			VTO15STD
JA28237-3	TO-15	05-OCT-09 17:05	YMH			VTO15STD

Accutest Internal Chain of Custody

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ
Received: 09/17/09

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
JA28237-1.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28237-1.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28237-2.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28237-2.1	Dave Hunkele		11/11/09 05:10	Disposed
JA28237-3.1	Michale Salvatore	Air Storage	09/17/09 16:56	Return to Storage
JA28237-3.1	Dave Hunkele		11/11/09 05:10	Disposed

Accutest Laboratories Annual Method Detection Limit Determination
Dayton, NJ Facility

Method: TO-15 (VTO14/15)
Instrument(s): GCMS2W, GCMS3W, GCMSW
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2009

Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	Replicate Spikes R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
Acetone	7-Jan-09	0.2	0.19	0.22	0.22	0.23	0.22	0.23	0.23	0.22	109.66	0.013	0.039	5.10
1,3-Butadiene	6-Jan-09	0.1	0.13	0.11	0.13	0.11	0.11	0.10	0.13	0.12	117.04	0.012	0.036	2.76
Benzene	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.14	0.12	0.13	126.30	0.007	0.021	4.71
Bromodichloromethane	8-Jan-09	0.1	0.12	0.14	0.13	0.13	0.13	0.15	0.14	0.13	133.02	0.009	0.028	3.56
Bromoform	8-Jan-09	0.1	0.09	0.11	0.09	0.09	0.09	0.11	0.10	0.10	97.32	0.007	0.022	4.55
Bromomethane	6-Jan-09	0.1	0.11	0.11	0.12	0.09	0.11	0.10	0.11	0.11	106.15	0.008	0.024	4.15
Bromoethene	8-Jan-09	0.1	0.13	0.12	0.12	0.12	0.12	0.14	0.12	0.12	124.56	0.006	0.018	5.47
n-Butane	8-Jan-09	0.1	0.17	0.17	0.18	0.15	0.18	0.20	0.18	0.18	177.33	0.014	0.044	2.26
Benzyl Chloride	20-Jan-09	0.1	0.08	0.07	0.07	0.09	0.08	0.07	0.06	0.07	74.18	0.011	0.033	3.01
Carbon disulfide	8-Jan-09	0.1	0.14	0.14	0.14	0.14	0.13	0.16	0.15	0.14	140.90	0.011	0.034	2.98
Chlorobenzene	8-Jan-09	0.1	0.12	0.13	0.12	0.11	0.11	0.14	0.12	0.12	121.55	0.008	0.026	3.87
Chlorodifluoromethane	20-Jan-09	0.2	0.26	0.29	0.30	0.28	0.28	0.28	0.27	0.28	140.08	0.015	0.046	4.31
Chloroethane	7-Jan-09	0.2	0.20	0.18	0.21	0.19	0.21	0.21	0.22	0.20	101.48	0.013	0.040	4.99
Chloroform	8-Jan-09	0.1	0.13	0.14	0.13	0.13	0.13	0.15	0.14	0.14	135.26	0.009	0.028	3.56
Chloromethane	7-Jan-09	0.2	0.23	0.26	0.24	0.23	0.23	0.22	0.22	0.23	115.86	0.015	0.047	4.26
3-Chloropropene	8-Jan-09	0.2	0.22	0.22	0.21	0.20	0.20	0.19	0.21	0.21	103.25	0.010	0.031	6.52
2-Chlorotoluene	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.10	0.09	0.09	0.10	99.70	0.007	0.022	4.59
Carbon tetrachloride	6-Jan-09	0.1	0.11	0.11	0.13	0.12	0.13	0.12	0.12	0.12	121.79	0.007	0.022	4.55
Cyclohexane	20-Jan-09	0.1	0.16	0.13	0.13	0.16	0.12	0.12	0.11	0.13	129.77	0.020	0.061	1.63
1,1-Dichloroethane	20-Jan-09	0.2	0.21	0.23	0.24	0.22	0.22	0.21	0.22	0.22	110.06	0.010	0.032	6.19
1,1-Dichloroethylene	6-Jan-09	0.1	0.11	0.10	0.12	0.13	0.14	0.14	0.13	0.13	126.21	0.014	0.044	2.27
1,2-Dibromoethane	8-Jan-09	0.1	0.11	0.11	0.10	0.10	0.10	0.12	0.11	0.11	106.48	0.007	0.021	4.87
1,2-Dichloroethane	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.15	0.13	0.13	126.69	0.012	0.036	2.77
1,2-Dichloropropane	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.14	0.13	0.13	126.40	0.009	0.029	3.50
1,4-Dioxane	20-Jan-09	0.2	0.14	0.18	0.18	0.14	0.14	0.14	0.13	0.15	75.37	0.020	0.063	3.19
Dichlorodifluoromethane	6-Jan-09	0.1	0.12	0.11	0.13	0.12	0.13	0.13	0.13	0.12	124.25	0.008	0.024	4.20
Dibromochloromethane	20-Jan-09	0.2	0.25	0.26	0.28	0.26	0.25	0.26	0.25	0.26	129.69	0.011	0.034	5.81
trans-1,2-Dichloroethylene	7-Jan-09	0.2	0.21	0.22	0.20	0.19	0.20	0.20	0.18	0.20	99.11	0.011	0.035	5.72
cis-1,2-Dichloroethylene	6-Jan-09	0.1	0.12	0.10	0.11	0.10	0.11	0.09	0.11	0.10	104.78	0.009	0.028	3.52
cis-1,3-Dichloropropene	8-Jan-09	0.1	0.10	0.10	0.09	0.10	0.09	0.11	0.09	0.10	96.39	0.006	0.019	5.24
m-Dichlorobenzene	20-Jan-09	0.1	0.12	0.11	0.11	0.12	0.12	0.10	0.09	0.11	107.77	0.010	0.032	3.14
o-Dichlorobenzene	20-Jan-09	0.1	0.11	0.09	0.11	0.11	0.11	0.09	0.08	0.10	100.64	0.012	0.037	2.68
p-Dichlorobenzene	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.10	0.10	0.08	0.10	100.00	0.010	0.032	3.11
trans-1,3-Dichloropropene	6-Jan-09	0.1	0.09	0.09	0.10	0.08	0.09	0.09	0.08	0.09	89.90	0.005	0.016	6.21
2,3-Dimethylpentane	20-Jan-09	0.1	0.13	0.11	0.11	0.11	0.11	0.11	0.11	0.11	111.62	0.007	0.023	4.42
2,4-Dimethylpentane	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.10	0.10	0.09	0.10	101.62	0.006	0.017	5.76
Ethanol	20-Jan-09	0.1	0.15	0.13	0.12	0.18	0.12	0.11	0.13	0.13	134.32	0.024	0.077	1.31

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

Method: TO-15 (VTO14/15)
Instrument(s): GCMS2W, GCMS3W, GCMSW
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2009

Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	Replicate Spikes R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
Ethylbenzene	6-Jan-09	0.1	0.09	0.09	0.09	0.08	0.09	0.08	0.08	0.09	85.93	0.006	0.019	5.17
Ethyl Acetate	20-Jan-09	0.2	0.13	0.15	0.17	0.12	0.15	0.14	0.14	0.14	71.35	0.016	0.051	3.90
4-Ethyltoluene	20-Jan-09	0.1	0.09	0.08	0.08	0.05	0.08	0.05	0.07	0.07	70.12	0.014	0.043	2.31
Freon 113	8-Jan-09	0.1	0.13	0.13	0.13	0.12	0.12	0.14	0.13	0.13	130.43	0.007	0.022	4.57
Freon 114	20-Jan-09	0.2	0.26	0.26	0.28	0.27	0.27	0.26	0.27	0.27	132.89	0.007	0.022	9.15
Freon 123	8-Jan-09	0.1	0.13	0.14	0.13	0.13	0.13	0.15	0.13	0.13	133.73	0.007	0.021	4.81
Freon 152A	20-Jan-09	0.2	0.21	0.24	0.24	0.23	0.23	0.23	0.23	0.23	114.44	0.010	0.031	6.40
Heptane	8-Jan-09	0.1	0.12	0.12	0.11	0.12	0.12	0.14	0.12	0.12	120.32	0.008	0.026	3.92
Hexachlorobutadiene	20-Jan-09	0.1	0.12	0.11	0.12	0.14	0.14	0.12	0.11	0.12	122.75	0.014	0.043	2.33
Hexane	8-Jan-09	0.1	0.13	0.13	0.12	0.13	0.12	0.14	0.13	0.13	126.98	0.006	0.019	5.18
2-Hexanone	7-Jan-09	0.2	0.16	0.16	0.17	0.16	0.14	0.15	0.17	0.16	78.55	0.010	0.030	6.61
Isopropylbenzene	6-Jan-09	0.1	0.08	0.09	0.09	0.08	0.08	0.07	0.08	0.08	81.53	0.006	0.020	5.03
Isopropyl Alcohol	6-Jan-09	0.1	0.14	0.13	0.16	0.15	0.14	0.12	0.13	0.14	139.12	0.011	0.035	2.89
Methylene chloride	8-Jan-09	0.2	0.28	0.29	0.28	0.27	0.27	0.27	0.29	0.28	139.42	0.008	0.025	8.01
Methyl ethyl ketone	20-Jan-09	0.2	0.16	0.16	0.17	0.14	0.14	0.15	0.14	0.15	76.71	0.012	0.039	5.12
Methyl Isobutyl Ketone	20-Jan-09	0.2	0.17	0.18	0.18	0.16	0.15	0.14	0.15	0.16	80.50	0.014	0.045	4.44
Methyl Tert Butyl Ether	6-Jan-09	0.1	0.09	0.10	0.11	0.10	0.10	0.09	0.09	0.10	98.92	0.007	0.022	4.51
Methylmethacrylate	6-Jan-09	0.1	0.07	0.06	0.08	0.06	0.06	0.06	0.06	0.06	64.63	0.006	0.020	5.11
Nonane	6-Jan-09	0.1	0.10	0.10	0.11	0.09	0.09	0.08	0.10	0.10	96.16	0.008	0.027	3.77
Octane	6-Jan-09	0.1	0.11	0.11	0.12	0.09	0.10	0.10	0.11	0.11	105.49	0.007	0.023	4.37
Pentane	8-Jan-09	0.1	0.16	0.18	0.17	0.16	0.16	0.18	0.18	0.17	170.33	0.009	0.028	3.58
Propylene	8-Jan-09	0.2	0.26	0.31	0.29	0.31	0.31	0.32	0.30	0.30	150.29	0.020	0.061	3.26
Styrene	20-Jan-09	0.1	0.09	0.08	0.08	0.08	0.08	0.07	0.07	0.08	80.19	0.006	0.018	5.43
1,1,1-Trichloroethane	8-Jan-09	0.1	0.13	0.13	0.13	0.13	0.13	0.15	0.14	0.13	134.31	0.008	0.025	4.07
1,1,2,2-Tetrachloroethane	8-Jan-09	0.1	0.11	0.12	0.11	0.10	0.11	0.12	0.11	0.11	110.60	0.007	0.023	4.41
1,1,2-Trichloroethane	8-Jan-09	0.1	0.11	0.12	0.11	0.11	0.11	0.13	0.12	0.11	113.67	0.007	0.021	4.72
1,2,4-Trichlorobenzene	20-Jan-09	0.2	0.10	0.12	0.14	0.10	0.09	0.09	0.08	0.10	50.11	0.021	0.065	3.06
1,2,4-Trimethylbenzene	20-Jan-09	0.1	0.08	0.07	0.07	0.08	0.08	0.07	0.06	0.07	73.25	0.007	0.021	4.66
1,3,5-Trimethylbenzene	20-Jan-09	0.1	0.10	0.09	0.09	0.09	0.09	0.08	0.08	0.09	87.93	0.008	0.026	3.92
2,2,4-Trimethylpentane	20-Jan-09	0.1	0.13	0.12	0.12	0.12	0.12	0.12	0.11	0.12	121.11	0.006	0.020	4.94
Tertiary Butyl Alcohol	20-Jan-09	0.1	0.11	0.10	0.10	0.11	0.11	0.11	0.09	0.11	105.48	0.007	0.023	4.36
Tetrachloroethylene	6-Jan-09	0.1	0.09	0.10	0.11	0.09	0.10	0.09	0.10	0.10	98.59	0.007	0.021	4.80
Tetrahydrofuran	8-Jan-09	0.2	0.20	0.22	0.20	0.20	0.20	0.19	0.19	0.20	99.85	0.010	0.032	6.29
Toluene	20-Jan-09	0.1	0.12	0.11	0.11	0.12	0.11	0.11	0.10	0.11	110.60	0.006	0.018	5.62
Trichloroethylene	8-Jan-09	0.1	0.12	0.13	0.12	0.12	0.12	0.13	0.12	0.13	125.45	0.006	0.019	5.42
Trichlorofluoromethane	6-Jan-09	0.1	0.13	0.13	0.14	0.13	0.13	0.14	0.14	0.13	133.51	0.007	0.021	4.71
Vinyl chloride	8-Jan-09	0.1	0.14	0.13	0.14	0.13	0.13	0.15	0.14	0.14	137.70	0.007	0.023	4.35
Vinyl Acetate	20-Jan-09	0.2	0.15	0.16	0.18	0.16	0.13	0.16	0.15	0.15	77.08	0.015	0.046	4.38
m,p-Xylene	6-Jan-09	0.2	0.15	0.16	0.17	0.15	0.14	0.13	0.14	0.15	74.69	0.014	0.045	4.42
o-Xylene	6-Jan-09	0.1	0.07	0.08	0.08	0.07	0.08	0.07	0.07	0.07	74.43	0.007	0.023	4.27

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

Method: TO-15 (VTO14/15)
Instrument(s): GCMS2W, GCMS3W, GCMSW
Analyst: Pooled

Matrix: AIR
Quant Factor: 1.00
Study Period: January,2009

Cmpd./Element/Parm. Name	Analysis Date	Spike ppbv	Replicate Spikes R1 ppbv	R2 ppbv	R3 ppbv	R4 ppbv	R5 ppbv	R6 ppbv	R7 ppbv	X-Bar ppbv	X-Bar %Recov.	STD.Dev. ppbv	MDL	Spike/MDL Ratio
TVHC As Equiv Pentane	7-Jan-09	0.2	0.30	0.32	0.36	0.33	0.28	0.33	0.33	0.32	160.72	0.027	0.085	2.37
TVHC As Equiv Heptane	20-Jan-09	0.2	0.23	0.23	0.22	0.23	0.22	0.24	0.22	0.23	114.19	0.009	0.029	6.96

Detection limits derived using the method described in 40 CFR Part 136, Appendix B

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Instrument Performance Checks (BFB)
- Internal Standard Area Summaries
- Initial Calibration RT/ISTD Area Summaries
- Surrogate Recovery Summaries
- Initial and Continuing Calibration Summaries

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-MB	3W12870.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-MB	3W12870.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	86%	65-128%

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-MB	3W12870.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:**

JA28237-1, JA28237-2, JA28237-3

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-MB	2W25422.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-MB	2W25422.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	78%	65-128%

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-MB	2W25422.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:**

V2W1073-SCC

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-MB	2W25475.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	ppbv		ND	0.98	ug/m3

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-MB	2W25475.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Result	RL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	74%	65-128%

Method Blank Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-MB	2W25475.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:**

V2W1075-SCC

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ppbv	

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-BS	3W12868.D	1	10/05/09	YMH	n/a	n/a	V3W524
V3W524-BSD	3W12869.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	10.2	102	9.9	99	3	70-130/30
106-99-0	1,3-Butadiene	10	10.5	105	11.0	110	5	70-130/30
71-43-2	Benzene	10	10.7	107	11.0	110	3	70-130/30
75-27-4	Bromodichloromethane	10	11.1	111	11.3	113	2	70-130/30
75-25-2	Bromoform	10	11.4	114	11.5	115	1	70-130/30
74-83-9	Bromomethane	10	9.8	98	10.2	102	4	70-130/30
593-60-2	Bromoethene	10	9.9	99	10.4	104	5	70-130/30
100-44-7	Benzyl Chloride	10	11.1	111	10.9	109	2	70-130/30
75-15-0	Carbon disulfide	10	9.8	98	10.5	105	7	70-130/30
108-90-7	Chlorobenzene	10	10.1	101	10.4	104	3	70-130/30
75-00-3	Chloroethane	10	10.5	105	11.2	112	6	70-130/30
67-66-3	Chloroform	10	9.7	97	10.1	101	4	70-130/30
74-87-3	Chloromethane	10	8.7	87	9.5	95	9	70-130/30
107-05-1	3-Chloropropene	10	10.5	105	10.9	109	4	70-130/30
95-49-8	2-Chlorotoluene	10	10.7	107	10.7	107	0	70-130/30
56-23-5	Carbon tetrachloride	10	9.7	97	10.1	101	4	70-130/30
110-82-7	Cyclohexane	10	10.9	109	11.4	114	4	70-130/30
75-34-3	1,1-Dichloroethane	10	10.4	104	10.9	109	5	70-130/30
75-35-4	1,1-Dichloroethylene	10	9.5	95	10	100	5	70-130/30
106-93-4	1,2-Dibromoethane	10	10.9	109	11.2	112	3	70-130/30
107-06-2	1,2-Dichloroethane	10	10.3	103	10.6	106	3	70-130/30
78-87-5	1,2-Dichloropropane	10	10.5	105	10.8	108	3	70-130/30
123-91-1	1,4-Dioxane	10	10	100	10.1	101	1	70-130/30
75-71-8	Dichlorodifluoromethane	10	8.7	87	9.6	96	10	70-130/30
124-48-1	Dibromochloromethane	10	11.3	113	11.6	116	3	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	9.6	96	10.2	102	6	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	9.6	96	10.2	102	6	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	11.2	112	11.5	115	3	70-130/30
541-73-1	m-Dichlorobenzene	10	10.3	103	10.2	102	1	70-130/30
95-50-1	o-Dichlorobenzene	10	10.2	102	10.1	101	1	70-130/30
106-46-7	p-Dichlorobenzene	10	10	100	10.0	100	0	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	11.4	114	11.6	116	2	70-130/30
64-17-5	Ethanol	10	9.6	96	9.5	95	1	70-130/30
100-41-4	Ethylbenzene	10	10.4	104	10.5	105	1	70-130/30
141-78-6	Ethyl Acetate	10	10.0	100	9.8	98	2	70-130/30
622-96-8	4-Ethyltoluene	10	10.2	102	9.9	99	3	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-BS	3W12868.D	1	10/05/09	YMH	n/a	n/a	V3W524
V3W524-BSD	3W12869.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.4	94	9.7	97	3	70-130/30
76-14-2	Freon 114	10	9.1	91	9.8	98	7	70-130/30
142-82-5	Heptane	10	11.0	110	11.3	113	3	70-130/30
87-68-3	Hexachlorobutadiene	10	11.6	116	11.5	115	1	70-130/30
110-54-3	Hexane	10	10.7	107	11.4	114	6	70-130/30
591-78-6	2-Hexanone	10	12.4	124	12.1	121	2	70-130/30
67-63-0	Isopropyl Alcohol	10	10.6	106	10.5	105	1	70-130/30
75-09-2	Methylene chloride	10	9.3	93	9.7	97	4	70-130/30
78-93-3	Methyl ethyl ketone	10	10.6	106	10.4	104	2	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	12.1	121	11.9	119	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.9	99	9.8	98	1	70-130/30
115-07-1	Propylene	10	10.1	101	10.7	107	6	70-130/30
100-42-5	Styrene	10	11.5	115	11.4	114	1	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.5	95	9.8	98	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	10.6	106	10.5	105	1	70-130/30
79-00-5	1,1,2-Trichloroethane	10	11.2	112	11.4	114	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	12.7	127	13.1	131* [a]	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	10.4	104	10.2	102	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	10.1	101	9.9	99	2	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	11.0	110	11.4	114	4	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	11.6	116	11.4	114	2	70-130/30
127-18-4	Tetrachloroethylene	10	9.3	93	9.6	96	3	70-130/30
109-99-9	Tetrahydrofuran	10	10.9	109	10.8	108	1	70-130/30
108-88-3	Toluene	10	10.8	108	10.9	109	1	70-130/30
79-01-6	Trichloroethylene	10	10.4	104	10.7	107	3	70-130/30
75-69-4	Trichlorofluoromethane	10	9.1	91	9.5	95	4	70-130/30
75-01-4	Vinyl chloride	10	10.2	102	10.7	107	5	70-130/30
108-05-4	Vinyl Acetate	10	11.1	111	10.9	109	2	70-130/30
	m,p-Xylene	20	21.1	106	20.9	105	1	70-130/30
95-47-6	o-Xylene	10	10.7	107	10.5	105	2	70-130/30
1330-20-7	Xylenes (total)	30	31.8	106	31.4	105	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	104%	102%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3W524-BS	3W12868.D	1	10/05/09	YMH	n/a	n/a	V3W524
V3W524-BSD	3W12869.D	1	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

(a) High percent recoveries and no associated positive found in the QC batch.

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-BS	2W25420.D	1	09/09/09	YMH	n/a	n/a	V2W1073
V2W1073-BSD	2W25421.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	8.7	87	8.9	89	2	70-130/30
106-99-0	1,3-Butadiene	10	9.2	92	9.2	92	0	70-130/30
71-43-2	Benzene	10	9.1	91	9.1	91	0	70-130/30
75-27-4	Bromodichloromethane	10	9.6	96	9.7	97	1	70-130/30
75-25-2	Bromoform	10	10.5	105	11.0	110	5	70-130/30
74-83-9	Bromomethane	10	9.7	97	9.7	97	0	70-130/30
593-60-2	Bromoethene	10	10.0	100	10.1	101	1	70-130/30
100-44-7	Benzyl Chloride	10	9.7	97	10.1	101	4	70-130/30
75-15-0	Carbon disulfide	10	9.1	91	9.1	91	0	70-130/30
108-90-7	Chlorobenzene	10	9.0	90	9.3	93	3	70-130/30
75-00-3	Chloroethane	10	9.8	98	9.7	97	1	70-130/30
67-66-3	Chloroform	10	9.5	95	9.5	95	0	70-130/30
74-87-3	Chloromethane	10	8.6	86	8.7	87	1	70-130/30
107-05-1	3-Chloropropene	10	9.7	97	9.5	95	2	70-130/30
95-49-8	2-Chlorotoluene	10	10.4	104	10.7	107	3	70-130/30
56-23-5	Carbon tetrachloride	10	9.5	95	9.4	94	1	70-130/30
110-82-7	Cyclohexane	10	8.9	89	8.8	88	1	70-130/30
75-34-3	1,1-Dichloroethane	10	9.2	92	9.1	91	1	70-130/30
75-35-4	1,1-Dichloroethylene	10	9.2	92	9.2	92	0	70-130/30
106-93-4	1,2-Dibromoethane	10	9.4	94	9.7	97	3	70-130/30
107-06-2	1,2-Dichloroethane	10	9.4	94	9.2	92	2	70-130/30
78-87-5	1,2-Dichloropropane	10	9.4	94	9.5	95	1	70-130/30
123-91-1	1,4-Dioxane	10	9.2	92	9.0	90	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	10	100	10.6	106	6	70-130/30
124-48-1	Dibromochloromethane	10	9.9	99	10.3	103	4	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	9.4	94	9.4	94	0	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	9.5	95	9.5	95	0	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	9.9	99	9.9	99	0	70-130/30
541-73-1	m-Dichlorobenzene	10	10.3	103	10.9	109	6	70-130/30
95-50-1	o-Dichlorobenzene	10	10.4	104	11.0	110	6	70-130/30
106-46-7	p-Dichlorobenzene	10	10	100	10.3	103	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	9.8	98	9.9	99	1	70-130/30
64-17-5	Ethanol	10	8.6	86	8.5	85	1	70-130/30
100-41-4	Ethylbenzene	10	9.5	95	9.8	98	3	70-130/30
141-78-6	Ethyl Acetate	10	9.1	91	8.9	89	2	70-130/30
622-96-8	4-Ethyltoluene	10	10.7	107	11.0	110	3	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-BS	2W25420.D	1	09/09/09	YMH	n/a	n/a	V2W1073
V2W1073-BSD	2W25421.D	1	09/09/09	YMH	n/a	n/a	V2W1073

The QC reported here applies to the following samples: **Method:** TO-15

V2W1073-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.4	94	9.4	94	0	70-130/30
76-14-2	Freon 114	10	9.2	92	9.2	92	0	70-130/30
142-82-5	Heptane	10	8.7	87	8.7	87	0	70-130/30
87-68-3	Hexachlorobutadiene	10	7.7	77	8.1	81	5	70-130/30
110-54-3	Hexane	10	9.1	91	9.0	90	1	70-130/30
591-78-6	2-Hexanone	10	8.1	81	8.3	83	2	70-130/30
67-63-0	Isopropyl Alcohol	10	8.8	88	8.9	89	1	70-130/30
75-09-2	Methylene chloride	10	8.8	88	8.6	86	2	70-130/30
78-93-3	Methyl ethyl ketone	10	9.6	96	9.6	96	0	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	8.7	87	8.6	86	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.3	93	9.4	94	1	70-130/30
115-07-1	Propylene	10	8.3	83	8.2	82	1	70-130/30
100-42-5	Styrene	10	10.6	106	11.0	110	4	70-130/30
71-55-6	1,1,1-Trichloroethane	10	9.5	95	9.4	94	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	9.8	98	10.2	102	4	70-130/30
79-00-5	1,1,2-Trichloroethane	10	9.7	97	9.7	97	0	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	7.7	77	8.0	80	4	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	10.7	107	11.2	112	5	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	10.5	105	11.1	111	6	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	8.7	87	8.7	87	0	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	8.7	87	9.2	92	6	70-130/30
127-18-4	Tetrachloroethylene	10	9.2	92	9.5	95	3	70-130/30
109-99-9	Tetrahydrofuran	10	9.1	91	9.1	91	0	70-130/30
108-88-3	Toluene	10	9.9	99	9.9	99	0	70-130/30
79-01-6	Trichloroethylene	10	9.2	92	9.2	92	0	70-130/30
75-69-4	Trichlorofluoromethane	10	9.2	92	9.3	93	1	70-130/30
75-01-4	Vinyl chloride	10	9.3	93	9.3	93	0	70-130/30
108-05-4	Vinyl Acetate	10	9.8	98	9.9	99	1	70-130/30
	m,p-Xylene	20	19.1	96	20.0	100	5	70-130/30
95-47-6	o-Xylene	10	9.7	97	10.2	102	5	70-130/30
1330-20-7	Xylenes (total)	30	28.8	96	30.2	101	5	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	113%	114%	65-128%

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-BS	2W25473.D	1	09/11/09	YMH	n/a	n/a	V2W1075
V2W1075-BSD	2W25474.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	10	10.0	100	9.6	96	4	70-130/30
106-99-0	1,3-Butadiene	10	10.4	104	10.1	101	3	70-130/30
71-43-2	Benzene	10	10.4	104	10.2	102	2	70-130/30
75-27-4	Bromodichloromethane	10	11.2	112	11.0	110	2	70-130/30
75-25-2	Bromoform	10	11.6	116	11.4	114	2	70-130/30
74-83-9	Bromomethane	10	10.7	107	10.4	104	3	70-130/30
593-60-2	Bromoethene	10	10.9	109	10.6	106	3	70-130/30
100-44-7	Benzyl Chloride	10	10.8	108	10.9	109	1	70-130/30
75-15-0	Carbon disulfide	10	10.1	101	10	100	1	70-130/30
108-90-7	Chlorobenzene	10	10.0	100	10	100	0	70-130/30
75-00-3	Chloroethane	10	11.1	111	10.7	107	4	70-130/30
67-66-3	Chloroform	10	10.6	106	10.4	104	2	70-130/30
74-87-3	Chloromethane	10	9.9	99	9.7	97	2	70-130/30
107-05-1	3-Chloropropene	10	10.6	106	10.4	104	2	70-130/30
95-49-8	2-Chlorotoluene	10	11.5	115	11.3	113	2	70-130/30
56-23-5	Carbon tetrachloride	10	10.5	105	10.3	103	2	70-130/30
110-82-7	Cyclohexane	10	9.9	99	9.8	98	1	70-130/30
75-34-3	1,1-Dichloroethane	10	10.3	103	10.2	102	1	70-130/30
75-35-4	1,1-Dichloroethylene	10	10.0	100	9.9	99	1	70-130/30
106-93-4	1,2-Dibromoethane	10	10.4	104	10.4	104	0	70-130/30
107-06-2	1,2-Dichloroethane	10	10.4	104	10.2	102	2	70-130/30
78-87-5	1,2-Dichloropropane	10	10.9	109	10.7	107	2	70-130/30
123-91-1	1,4-Dioxane	10	9.8	98	9.6	96	2	70-130/30
75-71-8	Dichlorodifluoromethane	10	8.8	88	8.1	81	8	70-130/30
124-48-1	Dibromochloromethane	10	11.0	110	11.1	111	1	70-130/30
156-60-5	trans-1,2-Dichloroethylene	10	10.2	102	10.0	100	2	70-130/30
156-59-2	cis-1,2-Dichloroethylene	10	10.3	103	10.2	102	1	70-130/30
10061-01-5	cis-1,3-Dichloropropene	10	11.3	113	11.1	111	2	70-130/30
541-73-1	m-Dichlorobenzene	10	11.3	113	11.2	112	1	70-130/30
95-50-1	o-Dichlorobenzene	10	11.3	113	11.2	112	1	70-130/30
106-46-7	p-Dichlorobenzene	10	10.8	108	10.7	107	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	10	11.0	110	10.8	108	2	70-130/30
64-17-5	Ethanol	10	9.6	96	9.2	92	4	70-130/30
100-41-4	Ethylbenzene	10	10.7	107	10.6	106	1	70-130/30
141-78-6	Ethyl Acetate	10	9.6	96	9.3	93	3	70-130/30
622-96-8	4-Ethyltoluene	10	11.8	118	11.8	118	0	70-130/30

Blank Spike/Blank Spike Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-BS	2W25473.D	1	09/11/09	YMH	n/a	n/a	V2W1075
V2W1075-BSD	2W25474.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here applies to the following samples: **Method:** TO-15

V2W1075-SCC

CAS No.	Compound	Spike ppbv	BSP ppbv	BSP %	BSD ppbv	BSD %	RPD	Limits Rec/RPD
76-13-1	Freon 113	10	9.9	99	9.9	99	0	70-130/30
76-14-2	Freon 114	10	10.4	104	10.2	102	2	70-130/30
142-82-5	Heptane	10	10.3	103	10.1	101	2	70-130/30
87-68-3	Hexachlorobutadiene	10	9.4	94	9.7	97	3	70-130/30
110-54-3	Hexane	10	10.1	101	10	100	1	70-130/30
591-78-6	2-Hexanone	10	8.7	87	8.7	87	0	70-130/30
67-63-0	Isopropyl Alcohol	10	9.8	98	9.4	94	4	70-130/30
75-09-2	Methylene chloride	10	9.5	95	9.5	95	0	70-130/30
78-93-3	Methyl ethyl ketone	10	10.1	101	9.8	98	3	70-130/30
108-10-1	Methyl Isobutyl Ketone	10	9.6	96	9.4	94	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	10	9.9	99	9.7	97	2	70-130/30
115-07-1	Propylene	10	9.5	95	9.2	92	3	70-130/30
100-42-5	Styrene	10	11.6	116	11.5	115	1	70-130/30
71-55-6	1,1,1-Trichloroethane	10	10.5	105	10.4	104	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	10	11.2	112	11.0	110	2	70-130/30
79-00-5	1,1,2-Trichloroethane	10	11.0	110	10.8	108	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	10	9.5	95	9.6	96	1	70-130/30
95-63-6	1,2,4-Trimethylbenzene	10	12.0	120	11.9	119	1	70-130/30
108-67-8	1,3,5-Trimethylbenzene	10	11.9	119	11.6	116	3	70-130/30
540-84-1	2,2,4-Trimethylpentane	10	10.3	103	10.1	101	2	70-130/30
75-65-0	Tertiary Butyl Alcohol	10	9.3	93	9.2	92	1	70-130/30
127-18-4	Tetrachloroethylene	10	10.0	100	10	100	0	70-130/30
109-99-9	Tetrahydrofuran	10	9.7	97	9.5	95	2	70-130/30
108-88-3	Toluene	10	11.1	111	10.9	109	2	70-130/30
79-01-6	Trichloroethylene	10	10.5	105	10.3	103	2	70-130/30
75-69-4	Trichlorofluoromethane	10	10.4	104	10.1	101	3	70-130/30
75-01-4	Vinyl chloride	10	10.5	105	10.3	103	2	70-130/30
108-05-4	Vinyl Acetate	10	10.8	108	10.3	103	5	70-130/30
	m,p-Xylene	20	21.4	107	21.3	107	0	70-130/30
95-47-6	o-Xylene	10	10.9	109	10.8	108	1	70-130/30
1330-20-7	Xylenes (total)	30	32.4	108	32.1	107	1	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	108%	107%	65-128%

Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28296-1DUP	3W12879.D	1.6	10/05/09	YMH	n/a	n/a	V3W524
JA28296-1	3W12878.D	1.6	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

CAS No.	Compound	JA28296-1 ppbv	Q	DUP ppbv	Q	RPD	Limits
67-64-1	Acetone	40.2		40.9		2	27
106-99-0	1,3-Butadiene	ND		ND		nc	20
71-43-2	Benzene	1.8		1.8		0	17
75-27-4	Bromodichloromethane	ND		ND		nc	20
75-25-2	Bromoform	ND		ND		nc	20
74-83-9	Bromomethane	ND		ND		nc	20
593-60-2	Bromoethene	ND		ND		nc	30
100-44-7	Benzyl Chloride	ND		ND		nc	20
75-15-0	Carbon disulfide	0.73	J	0.81		10	11
108-90-7	Chlorobenzene	ND		ND		nc	20
75-00-3	Chloroethane	ND		ND		nc	20
67-66-3	Chloroform	ND		ND		nc	12
74-87-3	Chloromethane	ND		ND		nc	22
107-05-1	3-Chloropropene	ND		ND		nc	10
95-49-8	2-Chlorotoluene	ND		ND		nc	20
56-23-5	Carbon tetrachloride	ND		ND		nc	10
110-82-7	Cyclohexane	1.1		1.0		10	12
75-34-3	1,1-Dichloroethane	ND		ND		nc	20
75-35-4	1,1-Dichloroethylene	ND		ND		nc	20
106-93-4	1,2-Dibromoethane	ND		ND		nc	20
107-06-2	1,2-Dichloroethane	ND		ND		nc	20
78-87-5	1,2-Dichloropropane	ND		ND		nc	20
123-91-1	1,4-Dioxane	ND		ND		nc	20
75-71-8	Dichlorodifluoromethane	0.79	J	0.94		17	22
124-48-1	Dibromochloromethane	ND		ND		nc	20
156-60-5	trans-1,2-Dichloroethylene	ND		ND		nc	10
156-59-2	cis-1,2-Dichloroethylene	ND		ND		nc	10
10061-01-5	cis-1,3-Dichloropropene	ND		ND		nc	20
541-73-1	m-Dichlorobenzene	ND		ND		nc	20
95-50-1	o-Dichlorobenzene	ND		ND		nc	10
106-46-7	p-Dichlorobenzene	ND		ND		nc	20
10061-02-6	trans-1,3-Dichloropropene	ND		ND		nc	20
64-17-5	Ethanol	33.8		34.1		1	33
100-41-4	Ethylbenzene	0.63	J	0.65	J	3	15
141-78-6	Ethyl Acetate	13.7		13.3		3	20
622-96-8	4-Ethyltoluene	ND		ND		nc	13

Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28296-1DUP	3W12879.D	1.6	10/05/09	YMH	n/a	n/a	V3W524
JA28296-1	3W12878.D	1.6	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

CAS No.	Compound	JA28296-1 ppbv	Q	DUP ppbv	Q	RPD	Limits
76-13-1	Freon 113	ND		ND		nc	10
76-14-2	Freon 114	ND		ND		nc	20
142-82-5	Heptane	1.3		1.3		0	20
87-68-3	Hexachlorobutadiene	ND		ND		nc	20
110-54-3	Hexane	3.8		4.2		10	17
591-78-6	2-Hexanone	ND		ND		nc	20
67-63-0	Isopropyl Alcohol	7.8		8.1		4	26
75-09-2	Methylene chloride	1.0		1.1		10	26
78-93-3	Methyl ethyl ketone	5.3		5.2		2	21
108-10-1	Methyl Isobutyl Ketone	ND		ND		nc	20
1634-04-4	Methyl Tert Butyl Ether	0.96		0.99		3	20
115-07-1	Propylene	9.7		14.8		42* [a]	16
100-42-5	Styrene	ND		ND		nc	11
71-55-6	1,1,1-Trichloroethane	2.2		2.3		4	20
79-34-5	1,1,2,2-Tetrachloroethane	ND		ND		nc	20
79-00-5	1,1,2-Trichloroethane	ND		ND		nc	20
120-82-1	1,2,4-Trichlorobenzene	ND		ND		nc	20
95-63-6	1,2,4-Trimethylbenzene	0.88		0.88		0	19
108-67-8	1,3,5-Trimethylbenzene	0.41	J	0.40	J	2	13
540-84-1	2,2,4-Trimethylpentane	3.4		3.4		0	18
75-65-0	Tertiary Butyl Alcohol	ND		ND		nc	21
127-18-4	Tetrachloroethylene	ND		ND		nc	17
109-99-9	Tetrahydrofuran	11.5		11.4		1	20
108-88-3	Toluene	4.5		4.5		0	20
79-01-6	Trichloroethylene	ND		ND		nc	13
75-69-4	Trichlorofluoromethane	0.74	J	0.79	J	7	21
75-01-4	Vinyl chloride	ND		ND		nc	20
108-05-4	Vinyl Acetate	ND		ND		nc	20
	m,p-Xylene	1.8		1.8		0	26
95-47-6	o-Xylene	0.77	J	0.76	J	1	20
1330-20-7	Xylenes (total)	2.6		2.5		4	26

CAS No.	Surrogate Recoveries	DUP	JA28296-1	Limits
460-00-4	4-Bromofluorobenzene	93%	92%	65-128%

Duplicate Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JA28296-1DUP	3W12879.D	1.6	10/05/09	YMH	n/a	n/a	V3W524
JA28296-1	3W12878.D	1.6	10/05/09	YMH	n/a	n/a	V3W524

The QC reported here applies to the following samples: **Method:** TO-15

JA28237-1, JA28237-2, JA28237-3

(a) Outside control limits due to matrix interference.

Summa Cleaning Certification

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-SCC	2W25443.D	1	09/10/09	YMH	n/a	n/a	V2W1073

The QC reported here (Summa A590) applies to the following samples: **Method:** TO-15

Batch CP3592 cleaned 09/02/09: JA28237-1(A410), JA28237-2(A802)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.039	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.021	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.047	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.077	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.019	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3

Summa Cleaning Certification

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1073-SCC	2W25443.D	1	09/10/09	YMH	n/a	n/a	V2W1073

The QC reported here (Summa A590) applies to the following samples: **Method:** TO-15

Batch CP3592 cleaned 09/02/09: JA28237-1(A410), JA28237-2(A802)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.019	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.039	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.021	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.020	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.018	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.045	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.023	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.023	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	87%	65-128%

Summa Cleaning Certification

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-SCC	2W25482.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here (Summa A674) applies to the following samples: **Method:** TO-15

Batch CP3598 cleaned 09/08/09: JA28237-3(A791)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
67-64-1	Acetone	ND	0.20	0.039	ppbv		ND	0.48	ug/m3
106-99-0	1,3-Butadiene	ND	0.20	0.036	ppbv		ND	0.44	ug/m3
71-43-2	Benzene	ND	0.20	0.021	ppbv		ND	0.64	ug/m3
75-27-4	Bromodichloromethane	ND	0.20	0.028	ppbv		ND	1.3	ug/m3
75-25-2	Bromoform	ND	0.20	0.022	ppbv		ND	2.1	ug/m3
74-83-9	Bromomethane	ND	0.20	0.024	ppbv		ND	0.78	ug/m3
593-60-2	Bromoethene	ND	0.20	0.018	ppbv		ND	0.87	ug/m3
100-44-7	Benzyl Chloride	ND	0.20	0.033	ppbv		ND	1.0	ug/m3
75-15-0	Carbon disulfide	ND	0.20	0.034	ppbv		ND	0.62	ug/m3
108-90-7	Chlorobenzene	ND	0.20	0.026	ppbv		ND	0.92	ug/m3
75-00-3	Chloroethane	ND	0.20	0.040	ppbv		ND	0.53	ug/m3
67-66-3	Chloroform	ND	0.20	0.028	ppbv		ND	0.98	ug/m3
74-87-3	Chloromethane	ND	0.20	0.047	ppbv		ND	0.41	ug/m3
107-05-1	3-Chloropropene	ND	0.20	0.031	ppbv		ND	0.63	ug/m3
95-49-8	2-Chlorotoluene	ND	0.20	0.022	ppbv		ND	1.0	ug/m3
56-23-5	Carbon tetrachloride	ND	0.20	0.022	ppbv		ND	1.3	ug/m3
110-82-7	Cyclohexane	ND	0.20	0.061	ppbv		ND	0.69	ug/m3
75-34-3	1,1-Dichloroethane	ND	0.20	0.032	ppbv		ND	0.81	ug/m3
75-35-4	1,1-Dichloroethylene	ND	0.20	0.044	ppbv		ND	0.79	ug/m3
106-93-4	1,2-Dibromoethane	ND	0.20	0.021	ppbv		ND	1.5	ug/m3
107-06-2	1,2-Dichloroethane	ND	0.20	0.036	ppbv		ND	0.81	ug/m3
78-87-5	1,2-Dichloropropane	ND	0.20	0.029	ppbv		ND	0.92	ug/m3
123-91-1	1,4-Dioxane	ND	0.20	0.063	ppbv		ND	0.72	ug/m3
75-71-8	Dichlorodifluoromethane	ND	0.20	0.024	ppbv		ND	0.99	ug/m3
124-48-1	Dibromochloromethane	ND	0.20	0.034	ppbv		ND	1.7	ug/m3
156-60-5	trans-1,2-Dichloroethylene	ND	0.20	0.035	ppbv		ND	0.79	ug/m3
156-59-2	cis-1,2-Dichloroethylene	ND	0.20	0.028	ppbv		ND	0.79	ug/m3
10061-01-5	cis-1,3-Dichloropropene	ND	0.20	0.019	ppbv		ND	0.91	ug/m3
541-73-1	m-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
95-50-1	o-Dichlorobenzene	ND	0.20	0.037	ppbv		ND	1.2	ug/m3
106-46-7	p-Dichlorobenzene	ND	0.20	0.032	ppbv		ND	1.2	ug/m3
10061-02-6	trans-1,3-Dichloropropene	ND	0.20	0.016	ppbv		ND	0.91	ug/m3
64-17-5	Ethanol	ND	0.50	0.077	ppbv		ND	0.94	ug/m3
100-41-4	Ethylbenzene	ND	0.20	0.019	ppbv		ND	0.87	ug/m3
141-78-6	Ethyl Acetate	ND	0.20	0.051	ppbv		ND	0.72	ug/m3
622-96-8	4-Ethyltoluene	ND	0.20	0.043	ppbv		ND	0.98	ug/m3

Summa Cleaning Certification

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2W1075-SCC	2W25482.D	1	09/11/09	YMH	n/a	n/a	V2W1075

The QC reported here (Summa A674) applies to the following samples: **Method:** TO-15

Batch CP3598 cleaned 09/08/09: JA28237-3(A791)

CAS No.	Compound	Result	RL	MDL	Units	Q	Result	RL	Units
76-13-1	Freon 113	ND	0.20	0.022	ppbv		ND	1.5	ug/m3
76-14-2	Freon 114	ND	0.20	0.022	ppbv		ND	1.4	ug/m3
142-82-5	Heptane	ND	0.20	0.026	ppbv		ND	0.82	ug/m3
87-68-3	Hexachlorobutadiene	ND	0.20	0.043	ppbv		ND	2.1	ug/m3
110-54-3	Hexane	ND	0.20	0.019	ppbv		ND	0.70	ug/m3
591-78-6	2-Hexanone	ND	0.20	0.030	ppbv		ND	0.82	ug/m3
67-63-0	Isopropyl Alcohol	ND	0.20	0.035	ppbv		ND	0.49	ug/m3
75-09-2	Methylene chloride	ND	0.20	0.025	ppbv		ND	0.69	ug/m3
78-93-3	Methyl ethyl ketone	ND	0.20	0.039	ppbv		ND	0.59	ug/m3
108-10-1	Methyl Isobutyl Ketone	ND	0.20	0.045	ppbv		ND	0.82	ug/m3
1634-04-4	Methyl Tert Butyl Ether	ND	0.20	0.022	ppbv		ND	0.72	ug/m3
115-07-1	Propylene	ND	0.50	0.061	ppbv		ND	0.86	ug/m3
100-42-5	Styrene	ND	0.20	0.018	ppbv		ND	0.85	ug/m3
71-55-6	1,1,1-Trichloroethane	ND	0.20	0.025	ppbv		ND	1.1	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.20	0.023	ppbv		ND	1.4	ug/m3
79-00-5	1,1,2-Trichloroethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	ND	0.20	0.065	ppbv		ND	1.5	ug/m3
95-63-6	1,2,4-Trimethylbenzene	ND	0.20	0.021	ppbv		ND	0.98	ug/m3
108-67-8	1,3,5-Trimethylbenzene	ND	0.20	0.026	ppbv		ND	0.98	ug/m3
540-84-1	2,2,4-Trimethylpentane	ND	0.20	0.020	ppbv		ND	0.93	ug/m3
75-65-0	Tertiary Butyl Alcohol	ND	0.20	0.023	ppbv		ND	0.61	ug/m3
127-18-4	Tetrachloroethylene	ND	0.040	0.021	ppbv		ND	0.27	ug/m3
109-99-9	Tetrahydrofuran	ND	0.20	0.032	ppbv		ND	0.59	ug/m3
108-88-3	Toluene	ND	0.20	0.018	ppbv		ND	0.75	ug/m3
79-01-6	Trichloroethylene	ND	0.040	0.019	ppbv		ND	0.21	ug/m3
75-69-4	Trichlorofluoromethane	ND	0.20	0.021	ppbv		ND	1.1	ug/m3
75-01-4	Vinyl chloride	ND	0.20	0.023	ppbv		ND	0.51	ug/m3
108-05-4	Vinyl Acetate	ND	0.20	0.046	ppbv		ND	0.70	ug/m3
	m,p-Xylene	ND	0.20	0.045	ppbv		ND	0.87	ug/m3
95-47-6	o-Xylene	ND	0.20	0.023	ppbv		ND	0.87	ug/m3
1330-20-7	Xylenes (total)	ND	0.20	0.023	ppbv		ND	0.87	ug/m3

CAS No.	Surrogate Recoveries		Limits
460-00-4	4-Bromofluorobenzene	70%	65-128%

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1070-BFB
Lab File ID: 2W25355.D
Instrument ID: GCMS2W
Injection Date: 09/05/09
Injection Time: 10:16

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	19333	21.7		Pass
75	30.0 - 66.0% of mass 95	46261	52.0		Pass
95	Base peak, 100% relative abundance	89037	100.0		Pass
96	5.0 - 9.0% of mass 95	6398	7.2		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	70765	79.5		Pass
175	4.0 - 9.01% of mass 174	5329	6.0	(7.5) [a]	Pass
176	93.0 - 101.0% of mass 174	69757	78.3	(98.6) [a]	Pass
177	5.0 - 9.0% of mass 176	4659	5.2	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1070-ICC1070	2W25356.D	09/05/09	11:46	01:30	Initial cal 10
V2W1070-IC1070	2W25357.D	09/05/09	12:30	02:14	Initial cal 0.5
V2W1070-IC1070	2W25359.D	09/05/09	14:41	04:25	Initial cal 0.2
V2W1070-IC1070	2W25360.D	09/05/09	15:24	05:08	Initial cal 20
V2W1070-IC1070	2W25361.D	09/05/09	16:08	05:52	Initial cal 5.0
V2W1070-IC1070	2W25362.D	09/05/09	16:51	06:35	Initial cal 0.1
V2W1070-IC1070	2W25363.D	09/05/09	17:35	07:19	Initial cal 0.04
V2W1070-IC1070	2W25364.D	09/05/09	18:19	08:03	Initial cal 40

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1073-BFB
Lab File ID: 2W25417.D
Instrument ID: GCMS2W
Injection Date: 09/09/09
Injection Time: 08:18

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	8049	18.8		Pass
75	30.0 - 66.0% of mass 95	20416	47.7		Pass
95	Base peak, 100% relative abundance	42808	100.0		Pass
96	5.0 - 9.0% of mass 95	3021	7.1		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	36965	86.4		Pass
175	4.0 - 9.01% of mass 174	2778	6.5	(7.5) [a]	Pass
176	93.0 - 101.0% of mass 174	36333	84.9	(98.3) [a]	Pass
177	5.0 - 9.0% of mass 176	2417	5.6	(6.7) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1073-CC1070	2W25419.D	09/09/09	10:34	02:16	Continuing cal 10
V2W1073-BS	2W25420.D	09/09/09	11:23	03:05	Blank Spike
V2W1073-BSD	2W25421.D	09/09/09	12:07	03:49	Blank Spike Duplicate
V2W1073-MB	2W25422.D	09/09/09	13:35	05:17	Method Blank
ZZZZZZ	2W25423.D	09/09/09	14:19	06:01	(unrelated sample)
ZZZZZZ	2W25424.D	09/09/09	15:03	06:45	(unrelated sample)
V2W1073-SCC	2W25425.D	09/09/09	15:46	07:28	Summa Cleaning Certification
ZZZZZZ	2W25426.D	09/09/09	16:30	08:12	(unrelated sample)
ZZZZZZ	2W25427.D	09/09/09	17:14	08:56	(unrelated sample)
ZZZZZZ	2W25428.D	09/09/09	18:41	10:23	(unrelated sample)
ZZZZZZ	2W25429.D	09/09/09	19:25	11:07	(unrelated sample)
ZZZZZZ	2W25430.D	09/09/09	20:08	11:50	(unrelated sample)
ZZZZZZ	2W25431.D	09/09/09	20:52	12:34	(unrelated sample)
ZZZZZZ	2W25432.D	09/09/09	21:36	13:18	(unrelated sample)
JA26160-5	2W25433.D	09/09/09	22:20	14:02	(used for QC only; not part of job JA28237)
JA26160-5DUP	2W25434.D	09/09/09	23:04	14:46	Duplicate
ZZZZZZ	2W25435.D	09/09/09	23:48	15:30	(unrelated sample)
ZZZZZZ	2W25436.D	09/10/09	00:32	16:14	(unrelated sample)
ZZZZZZ	2W25437.D	09/10/09	01:16	16:58	(unrelated sample)
ZZZZZZ	2W25438.D	09/10/09	01:59	17:41	(unrelated sample)
ZZZZZZ	2W25439.D	09/10/09	02:43	18:25	(unrelated sample)
ZZZZZZ	2W25440.D	09/10/09	03:27	19:09	(unrelated sample)
ZZZZZZ	2W25441.D	09/10/09	04:11	19:53	(unrelated sample)
ZZZZZZ	2W25442.D	09/10/09	04:55	20:37	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1073-BFB
Lab File ID: 2W25417.D
Instrument ID: GCMS2W
Injection Date: 09/09/09
Injection Time: 08:18

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1073-SCC	2W25443.D	09/10/09	05:39	21:21	Summa Cleaning Certification

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V2W1075-BFB
Lab File ID: 2W25471.D
Instrument ID: GCMS2W
Injection Date: 09/11/09
Injection Time: 06:34

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	7456	20.0		Pass
75	30.0 - 66.0% of mass 95	18520	49.8		Pass
95	Base peak, 100% relative abundance	37216	100.0		Pass
96	5.0 - 9.0% of mass 95	2584	6.9		Pass
173	Less than 2.0% of mass 174	77	0.21	(0.25) [a]	Pass
174	50.0 - 120.0% of mass 95	30637	82.3		Pass
175	4.0 - 9.01% of mass 174	2189	5.9	(7.1) [a]	Pass
176	93.0 - 101.0% of mass 174	29986	80.6	(97.9) [a]	Pass
177	5.0 - 9.0% of mass 176	1955	5.3	(6.5) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V2W1075-CC1070	2W25472.D	09/11/09	07:19	00:45	Continuing cal 10
V2W1075-BS	2W25473.D	09/11/09	08:04	01:30	Blank Spike
V2W1075-BSD	2W25474.D	09/11/09	08:48	02:14	Blank Spike Duplicate
V2W1075-MB	2W25475.D	09/11/09	10:17	03:43	Method Blank
ZZZZZZ	2W25476.D	09/11/09	11:12	04:38	(unrelated sample)
ZZZZZZ	2W25477.D	09/11/09	11:56	05:22	(unrelated sample)
ZZZZZZ	2W25478.D	09/11/09	12:39	06:05	(unrelated sample)
ZZZZZZ	2W25479.D	09/11/09	13:23	06:49	(unrelated sample)
ZZZZZZ	2W25480.D	09/11/09	14:07	07:33	(unrelated sample)
ZZZZZZ	2W25481.D	09/11/09	14:51	08:17	(unrelated sample)
V2W1075-SCC	2W25482.D	09/11/09	15:35	09:01	Summa Cleaning Certification
JA26852-1	2W25483.D	09/11/09	16:19	09:45	(used for QC only; not part of job JA28237)
JA26852-1DUP	2W25484.D	09/11/09	17:02	10:28	Duplicate
ZZZZZZ	2W25485.D	09/11/09	17:46	11:12	(unrelated sample)
ZZZZZZ	2W25486.D	09/11/09	18:29	11:55	(unrelated sample)
ZZZZZZ	2W25487.D	09/11/09	19:57	13:23	(unrelated sample)
ZZZZZZ	2W25488.D	09/11/09	20:41	14:07	(unrelated sample)
ZZZZZZ	2W25489.D	09/11/09	21:25	14:51	(unrelated sample)
ZZZZZZ	2W25490.D	09/11/09	22:08	15:34	(unrelated sample)
ZZZZZZ	2W25491.D	09/11/09	22:52	16:18	(unrelated sample)
ZZZZZZ	2W25492.D	09/11/09	23:35	17:01	(unrelated sample)
ZZZZZZ	2W25494.D	09/12/09	01:02	18:28	(unrelated sample)
ZZZZZZ	2W25495.D	09/12/09	01:46	19:12	(unrelated sample)
ZZZZZZ	2W25496.D	09/12/09	02:30	19:56	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample:	V2W1075-BFB	**Injection Date:**	09/11/09
Lab File ID:	2W25471.D	**Injection Time:**	06:34
Instrument ID:	GCMS2W		

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	2W25497.D	09/12/09	03:13	20:39	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V3W523-BFB
Lab File ID: 3W12850.D
Instrument ID: GCMS3W
Injection Date: 10/02/09
Injection Time: 19:06

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	4462	18.7		Pass
75	30.0 - 66.0% of mass 95	12055	50.4		Pass
95	Base peak, 100% relative abundance	23920	100.0		Pass
96	5.0 - 9.0% of mass 95	1743	7.3		Pass
173	Less than 2.0% of mass 174	0	0.0	(0.0) [a]	Pass
174	50.0 - 120.0% of mass 95	25045	104.7		Pass
175	4.0 - 9.01% of mass 174	1800	7.5	(7.2) [a]	Pass
176	93.0 - 101.0% of mass 174	24549	102.6	(98.0) [a]	Pass
177	5.0 - 9.0% of mass 176	1618	6.8	(6.6) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3W523-ICC523	3W12851.D	10/02/09	19:46	00:40	Initial cal 10
V3W523-IC523	3W12852.D	10/02/09	20:26	01:20	Initial cal 0.5
V3W523-IC523	3W12854.D	10/02/09	22:24	03:18	Initial cal 0.2
V3W523-IC523	3W12855.D	10/02/09	23:05	03:59	Initial cal 20
V3W523-IC523	3W12856.D	10/02/09	23:44	04:38	Initial cal 5.0
V3W523-IC523	3W12857.D	10/03/09	00:25	05:19	Initial cal 0.1
V3W523-IC523	3W12858.D	10/03/09	01:04	05:58	Initial cal 0.04
V3W523-IC523	3W12859.D	10/03/09	02:23	07:17	Initial cal 5.0
V3W523-IC523	3W12860.D	10/03/09	03:03	07:57	Initial cal 10
V3W523-IC523	3W12861.D	10/03/09	03:45	08:39	Initial cal 40
V3W523-IC523	3W12862.D	10/03/09	04:25	09:19	Initial cal 0.5
V3W523-IC523	3W12863.D	10/03/09	05:04	09:58	Initial cal 0.2
V3W523-IC523	3W12864.D	10/03/09	06:24	11:18	Initial cal 20
V3W523-IC523	3W12865.D	10/03/09	07:06	12:00	Initial cal 40

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V3W524-BFB
Lab File ID: 3W12866.D
Instrument ID: GCMS3W
Injection Date: 10/05/09
Injection Time: 07:13

m/e	Ion Abundance Criteria	Raw Abundance	% Relative Abundance		Pass/Fail
50	8.0 - 40.0% of mass 95	5509	20.5		Pass
75	30.0 - 66.0% of mass 95	13487	50.3		Pass
95	Base peak, 100% relative abundance	26834	100.0		Pass
96	5.0 - 9.0% of mass 95	2061	7.7		Pass
173	Less than 2.0% of mass 174	70	0.26	(0.27) [a]	Pass
174	50.0 - 120.0% of mass 95	25957	96.7		Pass
175	4.0 - 9.01% of mass 174	1846	6.9	(7.1) [a]	Pass
176	93.0 - 101.0% of mass 174	25720	95.8	(99.1) [a]	Pass
177	5.0 - 9.0% of mass 176	1648	6.1	(6.4) [b]	Pass

(a) Value is % of mass 174
(b) Value is % of mass 176

This check applies to the following Samples, MS, MSD, Blanks, and Standards:

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
V3W524-CC523	3W12867.D	10/05/09	08:32	01:19	Continuing cal 10
V3W524-BS	3W12868.D	10/05/09	10:00	02:47	Blank Spike
V3W524-ICV523	3W12868.D	10/05/09	10:00	02:47	Initial cal verification 10
V3W524-BSD	3W12869.D	10/05/09	11:00	03:47	Blank Spike Duplicate
V3W524-MB	3W12870.D	10/05/09	12:24	05:11	Method Blank
V3W524-SCC	3W12870A.D	10/05/09	12:24	05:11	Summa Cleaning Certification
JA28237-1	3W12871.D	10/05/09	13:04	05:51	SG-0105
JA28237-2	3W12872.D	10/05/09	13:45	06:32	SG-0205
JA28237-3	3W12873.D	10/05/09	14:25	07:12	SG-0205 DUP
V3W524-SCC	3W12874.D	10/05/09	15:07	07:54	Summa Cleaning Certification
JA28237-1	3W12875.D	10/05/09	15:46	08:33	SG-0105
JA28237-2	3W12876.D	10/05/09	16:25	09:12	SG-0205
JA28237-3	3W12877.D	10/05/09	17:05	09:52	SG-0205 DUP
JA28296-1	3W12878.D	10/05/09	18:25	11:12	(used for QC only; not part of job JA28237)
JA28296-1DUP	3W12879.D	10/05/09	19:05	11:52	Duplicate
ZZZZZZ	3W12880.D	10/05/09	19:46	12:33	(unrelated sample)
ZZZZZZ	3W12881.D	10/05/09	20:26	13:13	(unrelated sample)
ZZZZZZ	3W12882.D	10/05/09	21:07	13:54	(unrelated sample)
ZZZZZZ	3W12883.D	10/05/09	22:26	15:13	(unrelated sample)
ZZZZZZ	3W12884.D	10/05/09	23:06	15:53	(unrelated sample)
ZZZZZZ	3W12885.D	10/05/09	23:50	16:37	(unrelated sample)
ZZZZZZ	3W12886.D	10/06/09	00:34	17:21	(unrelated sample)
ZZZZZZ	3W12887.D	10/06/09	01:17	18:04	(unrelated sample)
ZZZZZZ	3W12889.D	10/06/09	03:21	20:08	(unrelated sample)

Instrument Performance Check (BFB)

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample: V3W524-BFB
Lab File ID: 3W12866.D
Instrument ID: GCMS3W
Injection Date: 10/05/09
Injection Time: 07:13

Lab Sample ID	Lab File ID	Date Analyzed	Time Analyzed	Hours Lapsed	Client Sample ID
ZZZZZZ	3W12890.D	10/06/09	04:04	20:51	(unrelated sample)
ZZZZZZ	3W12891.D	10/06/09	04:46	21:33	(unrelated sample)
V3W524-SCC	3W12892.D	10/06/09	06:08	22:55	Summa Cleaning Certification

Volatile Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1073-CC1070	**Injection Date:**	09/09/09
Lab File ID:	2W25419.D	**Injection Time:**	10:34
Instrument ID:	GCMS2W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	151545	9.95	751574	11.88	388121	16.41
Upper Limit [a]	212163	10.28	1052204	12.21	543369	16.74
Lower Limit [b]	90927	9.62	450944	11.55	232873	16.08

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2W1073-BS	153257	9.95	747829	11.88	395550	16.40
V2W1073-BSD	153051	9.95	740990	11.89	381950	16.41
V2W1073-MB	163630	9.94	733786	11.88	311382	16.40
ZZZZZZ	152239	9.95	722171	11.88	331993	16.40
ZZZZZZ	147344	10.00	728807	11.91	340099	16.42
V2W1073-SCC	154291	9.94	695241	11.88	304014	16.40
ZZZZZZ	147007	10.02	715667	11.93	336251	16.43
ZZZZZZ	163845	9.94	799291	11.88	385102	16.40
ZZZZZZ	162583	9.94	754549	11.88	346723	16.40
ZZZZZZ	152247	9.94	713212	11.88	331361	16.40
ZZZZZZ	150894	9.94	703088	11.88	329095	16.40
ZZZZZZ	151720	9.95	728658	11.88	345744	16.40
ZZZZZZ	167611	9.95	822273	11.88	385219	16.40
JA26160-5	148842	9.95	719549	11.88	321421	16.40
JA26160-5DUP	159697	9.95	791646	11.88	377111	16.40
ZZZZZZ	157556	9.95	786770	11.88	383545	16.40
ZZZZZZ	178187	9.95	873192	11.88	424366	16.41
ZZZZZZ	156397	9.97	789977	11.89	387487	16.40
ZZZZZZ	157834	9.94	734567	11.88	320125	16.40
ZZZZZZ	166679	9.95	774294	11.88	350326	16.40
ZZZZZZ	168592	9.95	826402	11.88	389150	16.40
ZZZZZZ	164803	9.95	814149	11.88	383091	16.40
ZZZZZZ	161611	9.95	791397	11.88	380618	16.40
V2W1073-SCC	160150	9.95	782954	11.88	369730	16.40

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V2W1075-CC1070	**Injection Date:**	09/11/09
Lab File ID:	2W25472.D	**Injection Time:**	07:19
Instrument ID:	GCMS2W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	113525	9.95	535099	11.89	289967	16.41
Upper Limit [a]	158935	10.28	749139	12.22	405954	16.74
Lower Limit [b]	68115	9.62	321059	11.56	173980	16.08

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V2W1075-BS	117415	9.95	552536	11.89	294205	16.41
V2W1075-BSD	120727	9.95	567505	11.88	298489	16.40
V2W1075-MB	133845	9.96	569612	11.89	233731	16.41
ZZZZZZ	136088	9.96	676536	11.89	326320	16.41
ZZZZZZ	141839	9.98	648359	11.91	294398	16.41
ZZZZZZ	139984	9.98	670175	11.91	296057	16.41
ZZZZZZ	150295	9.99	694894	11.91	302848	16.41
ZZZZZZ	145129	9.98	682525	11.91	303841	16.41
ZZZZZZ	139106	9.97	654420	11.90	311102	16.41
V2W1075-SCC	148781	9.98	676588	11.91	288197	16.41
JA26852-1	142048	9.98	664218	11.91	305617	16.41
JA26852-1DUP	133195	9.98	624632	11.91	287654	16.41
ZZZZZZ	128665	9.99	630045	11.91	296243	16.42
ZZZZZZ	124038	10.00	606169	11.92	281997	16.42
ZZZZZZ	144700	10.03	679178	11.94	320542	16.43
ZZZZZZ	138849	10.03	653268	11.94	306148	16.42
ZZZZZZ	142240	10.02	675520	11.93	305452	16.43
ZZZZZZ	144613	9.98	710991	11.91	329941	16.42
ZZZZZZ	143717	10.00	716839	11.92	329288	16.42
ZZZZZZ	142278	10.01	713935	11.93	333443	16.42
ZZZZZZ	143672	9.98	716441	11.89	351947	16.41
ZZZZZZ	137064	9.97	622892	11.89	290280	16.41
ZZZZZZ	131597	10.03	627739	11.94	315274	16.43
ZZZZZZ	146032	9.95	663713	11.88	307064	16.40

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Volatile Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Check Std:	V3W524-CC523	**Injection Date:**	10/05/09
Lab File ID:	3W12867.D	**Injection Time:**	08:32
Instrument ID:	GCMS3W	**Method:**	TO-15

	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
Check Std	89777	7.76	398659	9.46	188188	13.71
Upper Limit [a]	125688	8.09	558123	9.79	263463	14.04
Lower Limit [b]	53866	7.43	239195	9.13	112913	13.38

Lab Sample ID	IS 1 AREA	RT	IS 2 AREA	RT	IS 3 AREA	RT
V3W524-BS	95784	7.76	413899	9.46	194989	13.71
V3W524-BSD	96953	7.75	423905	9.46	198824	13.71
V3W524-MB	97525	7.75	387135	9.46	147587	13.71
V3W524-SCC	97525	7.75	387135	9.46	147587	13.71
JA28237-1	89828	7.76	394616	9.46	164449	13.71
JA28237-2	97547	7.76	406973	9.46	170807	13.71
JA28237-3	111469	7.77	457441	9.47	177168	13.71
V3W524-SCC	101559	7.75	399851	9.46	151005	13.71
JA28237-1	87912	7.76	354164	9.46	143642	13.71
JA28237-2	80057	7.75	344183	9.46	147689	13.71
JA28237-3	83865	7.76	337994	9.46	135344	13.71
JA28296-1	115918	7.76	485255	9.47	191305	13.71
JA28296-1DUP	104514	7.76	444495	9.46	182668	13.71
ZZZZZZ	96808	7.75	425073	9.46	179974	13.71
ZZZZZZ	90240	7.76	420699	9.46	176768	13.71
ZZZZZZ	83983	7.76	390895	9.46	177537	13.71
ZZZZZZ	110974	7.76	488796	9.47	199034	13.71
ZZZZZZ	95074	7.75	435597	9.46	189706	13.71
ZZZZZZ	91993	7.76	418595	9.46	187242	13.71
ZZZZZZ	100452	7.76	458955	9.46	200043	13.71
ZZZZZZ	107315	7.76	477024	9.46	213098	13.71
ZZZZZZ	107810	7.76	487028	9.46	211802	13.71
ZZZZZZ	111321	7.76	495852	9.46	204647	13.71
ZZZZZZ	100382	7.76	454050	9.46	187884	13.71
V3W524-SCC	100378	7.75	400341	9.46	158385	13.71

IS 1 = Bromochloromethane
IS 2 = 1,4-Difluorobenzene
IS 3 = Chlorobenzene-D5

(a) Upper Limit = + 40% of check standard area; Retention time + 0.33 minutes.
(b) Lower Limit = -40% of check standard area; Retention time -0.33 minutes.

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.86	9.95	0.689	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.95	0.585	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.17	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.95	0.631	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.72	9.95	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.82	9.95	1.087	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.88	1.062	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.95	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.41	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.38	9.95	0.641	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.95	1.000	ok	1.001	0.941-1.061
4-Ethyltoluene	18.89	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.13	9.95	0.516	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.77	16.41	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.08	9.95	0.712	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.30	9.95	0.935	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.51	11.88	1.137	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.95	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.88	1.076	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Propane	5.24	9.95	0.527	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.65	11.88	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.69	9.95	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.95	1.053	ok	1.057	0.997-1.117
Toluene	14.53	11.88	1.223	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.69	9.95	0.572	ok	0.571	0.511-0.631
Vinyl Acetate	9.04	9.95	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.90	11.88	1.086	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	121875	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	602919	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	324618	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.91	9.95	0.694	ok	0.691	0.631-0.751
1,3-Butadiene	5.84	9.95	0.587	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.12	9.95	0.615	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.89	9.95	0.592	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.29	9.95	0.632	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.69	11.88	1.068	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.95	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.60	16.41	1.194	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.45	9.95	0.648	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.98	9.95	1.003	ok	1.001	0.941-1.061
4-Ethyltoluene	18.88	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.06	9.95	0.810	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.77	9.95	0.680	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.14	9.95	0.517	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.78	16.41	0.901	ok	0.900	0.840-0.960
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.16	9.95	0.720	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.35	9.95	0.940	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.53	11.88	1.139	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.01	9.95	0.906	ok	0.905	0.845-0.965
Methylmethacrylate	12.79	11.88	1.077	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Propane	5.23	9.95	0.526	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.96	16.41	1.155	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.64	11.88	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.76	9.95	0.780	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.53	9.95	1.058	ok	1.057	0.997-1.117
Toluene	14.52	11.88	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.06	9.95	0.911	ok	0.910	0.850-0.970
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.55	16.41	1.069	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	136804	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	642918	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	301322	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.92	9.95	0.695	ok	0.691	0.631-0.751
1,3-Butadiene	5.83	9.95	0.586	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.12	9.95	0.615	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.45	16.41	1.002	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.29	9.95	0.632	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.24	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.72	11.88	1.071	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.95	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.78	9.95	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.41	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.47	9.95	0.650	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.98	9.95	1.003	ok	1.001	0.941-1.061
4-Ethyltoluene	18.88	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.12	9.95	0.515	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.79	16.41	0.901	ok	0.900	0.840-0.960
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.17	9.95	0.721	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.37	9.95	0.942	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.54	11.88	1.140	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.02	9.95	0.907	ok	0.905	0.845-0.965
Methylmethacrylate	12.79	11.88	1.077	ok	1.076	1.016-1.136
Nonane	17.74	16.41	1.081	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.95	0.526	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.54	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.96	16.41	1.155	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.64	11.88	1.064	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.78	9.95	0.782	ok	0.778	0.718-0.838
Tetrachloroethylene	15.72	16.41	0.958	ok	0.958	0.898-1.018
Tetrahydrofuran	10.54	9.95	1.059	ok	1.057	0.997-1.117
Toluene	14.52	11.88	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.08	9.95	0.913	ok	0.910	0.850-0.970
m,p-Xylene	17.04	16.41	1.038	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	136025	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	633129	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	292447	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.85	9.95	0.688	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.95	0.585	ok	0.586	0.526-0.646
Benzene	11.57	11.89	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.89	1.058	ok	1.059	0.999-1.119
Bromoform	17.18	16.41	1.047	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.95	0.631	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.72	9.95	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.89	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.68	9.95	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.89	1.042	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.89	1.061	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.99	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.73	9.95	0.877	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.89	1.135	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.41	1.195	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.04	11.89	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.89	1.014	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethanol	6.38	9.95	0.641	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.95	1.000	ok	1.001	0.941-1.061
4-Ethyltoluene	18.89	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.12	9.95	0.515	ok	0.515	0.455-0.575
Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.77	16.41	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.19	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.09	9.95	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.30	9.95	0.935	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.52	11.89	1.137	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.95	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.89	1.075	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Propane	5.24	9.95	0.527	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.45	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.56	16.41	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.23	11.89	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.43	16.41	1.184	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.66	11.89	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.69	9.95	0.773	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.95	1.053	ok	1.057	0.997-1.117
Toluene	14.53	11.89	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.89	1.061	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.69	9.95	0.572	ok	0.571	0.511-0.631
Vinyl Acetate	9.04	9.95	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	113592	ok	126872	76123-177621
1,4-Difluorobenzene	11.89	ok	11.88	11.55-12.21	570376	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	312683	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.86	9.94	0.690	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.94	0.586	ok	0.586	0.526-0.646
Benzene	11.56	11.88	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.94	0.615	ok	0.614	0.554-0.674
Bromoethene	6.64	9.94	0.668	ok	0.667	0.607-0.727
n-Butane	5.88	9.94	0.592	ok	0.591	0.531-0.651
Benzyl Chloride	19.58	16.41	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.94	0.820	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.94	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.94	0.632	ok	0.632	0.572-0.692
Chloroform	10.07	9.94	1.013	ok	1.012	0.952-1.072
Chloromethane	5.46	9.94	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.94	0.797	ok	0.796	0.736-0.856
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.94	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.94	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.68	9.94	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.25	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.82	9.94	1.089	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.88	1.062	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.94	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.94	0.879	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.94	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.60	16.41	1.194	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.41	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.68	16.41	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.02	11.88	1.180	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.94	1.094	ok	1.093	1.033-1.153
Ethanol	6.39	9.94	0.643	ok	0.644	0.584-0.704
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.94	1.001	ok	1.001	0.941-1.061
4-Ethyltoluene	18.88	16.41	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.06	9.94	0.811	ok	0.810	0.750-0.870
Freon 114	5.56	9.94	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.94	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.94	0.679	ok	0.679	0.619-0.739
Freon 123A	6.81	9.94	0.685	ok	0.685	0.625-0.745
Freon 152A	5.13	9.94	0.516	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.41	1.367	ok	1.367	1.307-1.427
Hexane	9.98	9.94	1.004	ok	1.003	0.943-1.063
2-Hexanone	14.77	16.41	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.19	16.41	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.09	9.94	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.88	16.41	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.94	0.784	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.31	9.94	0.937	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.51	11.88	1.137	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.94	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.78	11.88	1.076	ok	1.076	1.016-1.136
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.39	9.94	0.743	ok	0.743	0.683-0.803
Propane	5.24	9.94	0.527	ok	0.526	0.466-0.586
Propylene	5.21	9.94	0.524	ok	0.524	0.464-0.584
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.94	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.41	1.337	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.96	16.41	1.155	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.65	11.88	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.70	9.94	0.775	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.49	9.94	1.055	ok	1.057	0.997-1.117
Toluene	14.52	11.88	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.94	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.94	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.04	9.94	0.909	ok	0.910	0.850-0.970
m,p-Xylene	17.04	16.41	1.038	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.56	16.41	1.070	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.94	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.94	ok	9.95	9.62-10.28	129325	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	611123	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	309325	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,3-Butadiene	5.84	9.95	0.587	ok	0.586	0.526-0.646
Benzene	11.57	11.88	0.974	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Bromoform	17.16	16.41	1.046	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.63	9.95	0.666	ok	0.667	0.607-0.727
n-Butane	5.89	9.95	0.592	ok	0.591	0.531-0.651
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chloroethane	6.30	9.95	0.633	ok	0.632	0.572-0.692
Chloroform	10.07	9.95	1.012	ok	1.012	0.952-1.072
2-Chlorotoluene	18.71	16.41	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
Cyclohexane	11.84	11.88	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.95	9.95	0.899	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.69	9.95	0.773	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.24	16.41	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.39	11.88	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.75	11.88	1.073	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	14.99	16.41	0.913	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.95	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.77	9.95	0.982	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.49	11.88	1.136	ok	1.135	1.075-1.195
trans-1,3-Dichloropropene	14.03	11.88	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.88	1.015	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
4-Ethyltoluene	18.89	16.41	1.151	ok	1.151	1.091-1.211
Freon 113	8.06	9.95	0.810	ok	0.810	0.750-0.870
Freon 114	5.56	9.95	0.559	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.13	9.95	0.516	ok	0.515	0.455-0.575
Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
Isopropylbenzene	18.18	16.41	1.108	ok	1.108	1.048-1.168
Methyl Isobutyl Ketone	13.55	11.88	1.141	ok	1.139	1.079-1.199

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Methyl Tert Butyl Ether	9.04	9.95	0.909	ok	0.905	0.845-0.965
Methylmethacrylate	12.80	11.88	1.077	ok	1.076	1.016-1.136
Nonane	17.74	16.41	1.081	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
Pentane	7.40	9.95	0.744	ok	0.743	0.683-0.803
Styrene	17.44	16.41	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.22	11.88	1.197	ok	1.197	1.137-1.257
1,2,4-Trimethylbenzene	19.41	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.65	11.88	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.81	9.95	0.785	ok	0.778	0.718-0.838
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.58	9.95	1.063	ok	1.057	0.997-1.117
Toluene	14.53	11.88	1.223	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.06	9.95	0.710	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
m,p-Xylene	17.05	16.41	1.039	ok	1.039	0.979-1.099
o-Xylene	17.55	16.41	1.069	ok	1.070	1.010-1.130
TVHC As Equiv Heptane	12.89	11.88	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	138219	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	647187	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	294519	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	Reporting this level
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Benzene	11.57	11.88	0.974	ok	0.973	0.913-1.033
Bromodichloromethane	12.58	11.88	1.059	ok	1.059	0.999-1.119
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.46	16.41	1.003	ok	1.003	0.943-1.063
Chloroform	10.06	9.95	1.011	ok	1.012	0.952-1.072
Carbon tetrachloride	11.71	9.95	1.177	ok	1.177	1.117-1.237
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
Dibromochloromethane	14.98	16.41	0.913	ok	0.913	0.853-0.973
cis-1,3-Dichloropropene	13.50	11.88	1.136	ok	1.135	1.075-1.195
2,4-Dimethylpentane	10.87	9.95	1.092	ok	1.093	1.033-1.153
Ethylbenzene	16.85	16.41	1.027	ok	1.027	0.967-1.087
Freon 113	8.06	9.95	0.810	ok	0.810	0.750-0.870
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Heptane	12.90	11.88	1.086	ok	1.085	1.025-1.145
Hexane	9.97	9.95	1.002	ok	1.003	0.943-1.063
Isopropylbenzene	18.19	16.41	1.108	ok	1.108	1.048-1.168
Methyl Isobutyl Ketone	13.56	11.88	1.141	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	9.05	9.95	0.910	ok	0.905	0.845-0.965
Nonane	17.75	16.41	1.082	ok	1.081	1.021-1.141
Octane	15.52	16.41	0.946	ok	0.946	0.886-1.006
1,1,1-Trichloroethane	11.09	9.95	1.115	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.55	16.41	1.069	ok	1.070	1.010-1.130
1,2,4-Trimethylbenzene	19.42	16.41	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.97	16.41	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.64	11.88	1.064	ok	1.064	1.004-1.124
Tetrachloroethylene	15.73	16.41	0.959	ok	0.958	0.898-1.018
Toluene	14.53	11.88	1.223	ok	1.222	1.162-1.282
Trichloroethylene	12.62	11.88	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.06	9.95	0.710	ok	0.709	0.649-0.769
m,p-Xylene	17.04	16.41	1.038	ok	1.039	0.979-1.099
o-Xylene	17.55	16.41	1.069	ok	1.070	1.010-1.130

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	130925	ok	126872	76123-177621
1,4-Difluorobenzene	11.88	ok	11.88	11.55-12.21	619828	ok	610817	366490-855144
Chlorobenzene-D5	16.41	ok	16.41	16.08-16.74	282724	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	6.85	9.95	0.688	ok	0.691	0.631-0.751
1,3-Butadiene	5.82	9.95	0.585	ok	0.586	0.526-0.646
Benzene	11.57	11.89	0.973	ok	0.973	0.913-1.033
Bromodichloromethane	12.59	11.89	1.059	ok	1.059	0.999-1.119
Bromoform	17.19	16.42	1.047	ok	1.046	0.986-1.106
Bromomethane	6.11	9.95	0.614	ok	0.614	0.554-0.674
Bromoethene	6.64	9.95	0.667	ok	0.667	0.607-0.727
n-Butane	5.88	9.95	0.591	ok	0.591	0.531-0.651
Benzyl Chloride	19.59	16.42	1.193	ok	1.193	1.133-1.253
Carbon disulfide	8.15	9.95	0.819	ok	0.819	0.759-0.879
Chlorobenzene	16.48	16.42	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	5.17	9.95	0.520	ok	0.520	0.460-0.580
Chloroethane	6.28	9.95	0.631	ok	0.632	0.572-0.692
Chloroform	10.08	9.95	1.013	ok	1.012	0.952-1.072
Chloromethane	5.46	9.95	0.549	ok	0.549	0.489-0.609
3-Chloropropene	7.92	9.95	0.796	ok	0.796	0.736-0.856
2-Chlorotoluene	18.72	16.42	1.140	ok	1.140	1.080-1.200
Carbon tetrachloride	11.72	9.95	1.178	ok	1.177	1.117-1.237
Cyclohexane	11.85	11.89	0.997	ok	0.997	0.937-1.057
1,1-Dichloroethane	8.94	9.95	0.898	ok	0.899	0.839-0.959
1,1-Dichloroethylene	7.68	9.95	0.772	ok	0.773	0.713-0.833
1,2-Dibromoethane	15.26	16.42	0.929	ok	0.929	0.869-0.989
1,2-Dichloroethane	10.83	9.95	1.088	ok	1.088	1.028-1.148
1,2-Dichloropropane	12.40	11.89	1.043	ok	1.043	0.983-1.103
1,4-Dioxane	12.62	11.89	1.061	ok	1.066	1.006-1.126
Dichlorodifluoromethane	5.01	9.95	0.504	ok	0.504	0.444-0.564
Dibromochloromethane	15.00	16.42	0.914	ok	0.913	0.853-0.973
trans-1,2-Dichloroethylene	8.74	9.95	0.878	ok	0.878	0.818-0.938
cis-1,2-Dichloroethylene	9.78	9.95	0.983	ok	0.982	0.922-1.042
cis-1,3-Dichloropropene	13.50	11.89	1.135	ok	1.135	1.075-1.195
m-Dichlorobenzene	19.61	16.42	1.194	ok	1.195	1.135-1.255
o-Dichlorobenzene	20.06	16.42	1.222	ok	1.222	1.162-1.282
p-Dichlorobenzene	19.69	16.42	1.199	ok	1.199	1.139-1.259
trans-1,3-Dichloropropene	14.04	11.89	1.181	ok	1.181	1.121-1.241
2,3-Dimethylpentane	12.06	11.89	1.014	ok	1.015	0.955-1.075
2,4-Dimethylpentane	10.88	9.95	1.093	ok	1.093	1.033-1.153
Ethanol	6.38	9.95	0.641	ok	0.644	0.584-0.704
Ethylbenzene	16.86	16.42	1.027	ok	1.027	0.967-1.087
Ethyl Acetate	9.95	9.95	1.000	ok	1.001	0.941-1.061
4-Ethyltoluene	18.90	16.42	1.151	ok	1.151	1.091-1.211

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 113	8.05	9.95	0.809	ok	0.810	0.750-0.870
Freon 114	5.55	9.95	0.558	ok	0.559	0.499-0.619
Freon 115	5.01	9.95	0.504	ok	0.504	0.444-0.564
Freon 123	6.75	9.95	0.678	ok	0.679	0.619-0.739
Freon 123A	6.81	9.95	0.684	ok	0.685	0.625-0.745
Freon 152A	5.12	9.95	0.515	ok	0.515	0.455-0.575
Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145
Hexachlorobutadiene	22.43	16.42	1.366	ok	1.367	1.307-1.427
Hexane	9.98	9.95	1.003	ok	1.003	0.943-1.063
2-Hexanone	14.78	16.42	0.900	ok	0.900	0.840-0.960
Isopropylbenzene	18.20	16.42	1.108	ok	1.108	1.048-1.168
Isopropyl Alcohol	7.10	9.95	0.714	ok	0.715	0.655-0.775
p-Isopropyltoluene	19.89	16.42	1.211	ok	1.211	1.151-1.271
Methylene chloride	7.79	9.95	0.783	ok	0.783	0.723-0.843
Methyl ethyl ketone	9.32	9.95	0.937	ok	0.937	0.877-0.997
Methyl Isobutyl Ketone	13.53	11.89	1.138	ok	1.139	1.079-1.199
Methyl Tert Butyl Ether	8.97	9.95	0.902	ok	0.905	0.845-0.965
Methylmethacrylate	12.79	11.89	1.076	ok	1.076	1.016-1.136
Nonane	17.76	16.42	1.082	ok	1.081	1.021-1.141
Octane	15.53	16.42	0.946	ok	0.946	0.886-1.006
Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
Propane	5.23	9.95	0.526	ok	0.526	0.466-0.586
Propylene	5.21	9.95	0.524	ok	0.524	0.464-0.584
Styrene	17.45	16.42	1.063	ok	1.063	1.003-1.123
1,1,1-Trichloroethane	11.10	9.95	1.116	ok	1.115	1.055-1.175
1,1,2,2-Tetrachloroethane	17.57	16.42	1.070	ok	1.070	1.010-1.130
1,1,2-Trichloroethane	14.24	11.89	1.198	ok	1.197	1.137-1.257
1,2,4-Trichlorobenzene	21.94	16.42	1.336	ok	1.337	1.277-1.397
1,2,4-Trimethylbenzene	19.43	16.42	1.183	ok	1.183	1.123-1.243
1,3,5-Trimethylbenzene	18.98	16.42	1.156	ok	1.156	1.096-1.216
2,2,4-Trimethylpentane	12.66	11.89	1.065	ok	1.064	1.004-1.124
Tertiary Butyl Alcohol	7.72	9.95	0.776	ok	0.778	0.718-0.838
Tetrachloroethylene	15.74	16.42	0.959	ok	0.958	0.898-1.018
Tetrahydrofuran	10.48	9.95	1.053	ok	1.057	0.997-1.117
Toluene	14.53	11.89	1.222	ok	1.222	1.162-1.282
Trichloroethylene	12.63	11.89	1.062	ok	1.062	1.002-1.122
Trichlorofluoromethane	7.05	9.95	0.709	ok	0.709	0.649-0.769
Vinyl chloride	5.68	9.95	0.571	ok	0.571	0.511-0.631
Vinyl Acetate	9.05	9.95	0.910	ok	0.910	0.850-0.970
m,p-Xylene	17.06	16.42	1.039	ok	1.039	0.979-1.099

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V2W1070-ICC1070	2W25356.D	09/05/09 11:46	YMH	10	GCMS2W	TO-15	
V2W1070-IC1070	2W25357.D	09/05/09 12:30	YMH	0.5	GCMS2W	TO-15	
V2W1070-IC1070	2W25359.D	09/05/09 14:41	YMH	0.2	GCMS2W	TO-15	
V2W1070-IC1070	2W25360.D	09/05/09 15:24	YMH	20	GCMS2W	TO-15	
V2W1070-IC1070	2W25361.D	09/05/09 16:08	YMH	5.0	GCMS2W	TO-15	
V2W1070-IC1070	2W25362.D	09/05/09 16:51	YMH	0.1	GCMS2W	TO-15	
V2W1070-IC1070	2W25363.D	09/05/09 17:35	YMH	0.04	GCMS2W	TO-15	
V2W1070-IC1070	2W25364.D	09/05/09 18:19	YMH	40	GCMS2W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
o-Xylene	17.58	16.42	1.071	ok	1.070	1.010-1.130
TVHC As Equiv Pentane	7.39	9.95	0.743	ok	0.743	0.683-0.803
TVHC As Equiv Heptane	12.90	11.89	1.085	ok	1.085	1.025-1.145

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	9.95	ok	9.95	9.62-10.28	108209	ok	126872	76123-177621
1,4-Difluorobenzene	11.89	ok	11.88	11.55-12.21	559053	ok	610817	366490-855144
Chlorobenzene-D5	16.42	ok	16.41	16.08-16.74	314927	ok	304071	182443-425699

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.35	7.76	0.689	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.76	0.595	ok	0.595	0.535-0.655
Benzene	9.15	9.47	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.09	9.47	1.065	ok	1.066	1.006-1.126
Bromoform	14.44	13.72	1.052	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.18	7.76	0.668	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.72	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.72	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.93	7.76	0.635	ok	0.635	0.575-0.695
Chloroform	7.86	7.76	1.013	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.72	1.169	ok	1.170	1.110-1.230
Carbon tetrachloride	9.28	7.76	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.47	0.984	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.90	7.76	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.72	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.87	9.47	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.14	9.47	1.071	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.35	13.72	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.76	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.95	9.47	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.72	1.240	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.72	1.276	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.10	13.72	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.47	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.68	7.76	0.990	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.47	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.04	7.76	0.649	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.72	1.029	ok	1.030	0.970-1.090
Ethyl Acetate	7.76	7.76	1.000	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.72	1.183	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.07	7.76	0.524	ok	0.526	0.466-0.586
Freon 123	5.26	7.76	0.678	ok	0.677	0.617-0.737
Freon 123A	5.30	7.76	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.76	0.536	ok	0.536	0.476-0.596
Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.72	1.460	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.12	13.72	0.883	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.72	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.53	7.76	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.72	1.261	ok	1.261	1.201-1.321
Methylene chloride	6.04	7.76	0.778	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.21	7.76	0.929	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.92	9.47	1.153	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.76	0.888	ok	0.890	0.830-0.950
Methylmethacrylate	10.30	9.47	1.088	ok	1.088	1.028-1.148
Nonane	14.99	13.72	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.72	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.22	7.76	0.544	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.72	1.073	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.72	1.082	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.63	9.47	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.72	1.421	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.81	13.72	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.32	13.72	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.03	9.47	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.95	7.76	0.767	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.72	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.20	7.76	1.057	ok	1.059	0.999-1.119
Toluene	11.89	9.47	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.11	9.47	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.76	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.31	13.72	1.043	ok	1.043	0.983-1.103
o-Xylene	14.83	13.72	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	76719	ok	82191	49315-115067
1,4-Difluorobenzene	9.47	ok	9.46	9.13-9.79	347493	ok	366744	220046-513442
Chlorobenzene-D5	13.72	ok	13.71	13.38-14.04	164995	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.36	7.75	0.692	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.75	0.596	ok	0.595	0.535-0.655
Benzene	9.13	9.46	0.965	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.43	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.75	0.622	ok	0.621	0.561-0.681
Bromoethene	5.17	7.75	0.667	ok	0.667	0.607-0.727
n-Butane	4.64	7.75	0.599	ok	0.598	0.538-0.658
Benzyl Chloride	17.00	13.71	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.25	7.75	0.806	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.75	0.541	ok	0.540	0.480-0.600
Chloroethane	4.92	7.75	0.635	ok	0.635	0.575-0.695
Chloroform	7.84	7.75	1.012	ok	1.012	0.952-1.072
Chloromethane	4.38	7.75	0.565	ok	0.565	0.505-0.625
3-Chloropropene	6.08	7.75	0.785	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.75	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.75	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.75	0.765	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.71	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.48	7.75	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.19	9.46	1.077	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.75	0.550	ok	0.549	0.489-0.609
Dibromochloromethane	12.33	13.71	0.899	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.71	7.75	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.62	7.75	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.94	9.46	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.00	13.71	1.240	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.08	13.71	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.45	9.46	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.67	7.75	0.990	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.46	1.004	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.75	1.088	ok	1.087	1.027-1.147
Ethanol	5.04	7.75	0.650	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.77	7.75	1.003	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.71	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.75	0.799	ok	0.798	0.738-0.858
Freon 114	4.44	7.75	0.573	ok	0.572	0.512-0.632
Freon 115	4.08	7.75	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.75	0.677	ok	0.677	0.617-0.737
Freon 123A	5.29	7.75	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.75	0.537	ok	0.536	0.476-0.596
Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.66	7.75	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.14	13.71	0.885	ok	0.885	0.825-0.945
Isopropylbenzene	15.46	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.54	7.75	0.715	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.71	1.262	ok	1.261	1.201-1.321
Methylene chloride	6.02	7.75	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.23	7.75	0.933	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.93	9.46	1.155	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.90	7.75	0.890	ok	0.890	0.830-0.950
Methylmethacrylate	10.30	9.46	1.089	ok	1.088	1.028-1.148
Nonane	14.97	13.71	1.092	ok	1.092	1.032-1.152
Octane	12.78	13.71	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
Propane	4.22	7.75	0.545	ok	0.544	0.484-0.604
Propylene	4.21	7.75	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.71	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.70	7.75	1.123	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.62	9.46	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.71	1.422	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.31	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.01	9.46	1.058	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.96	7.75	0.769	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.23	7.75	1.062	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.10	9.46	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.75	0.705	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.75	0.585	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.75	0.903	ok	0.903	0.843-0.963
m,p-Xylene	14.31	13.71	1.044	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	78237	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	349998	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	141719	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.39	7.76	0.695	ok	0.692	0.632-0.752
1,3-Butadiene	4.61	7.76	0.594	ok	0.595	0.535-0.655
Benzene	9.14	9.46	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.09	9.46	1.067	ok	1.066	1.006-1.126
Bromoform	14.44	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.17	7.76	0.666	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.71	1.241	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.92	7.76	0.634	ok	0.635	0.575-0.695
Chloroform	7.84	7.76	1.010	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.76	1.195	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.76	0.888	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.56	13.71	0.916	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.22	9.46	1.080	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.34	13.71	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.62	7.76	0.982	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.94	9.46	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.71	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.09	13.71	1.247	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.69	7.76	0.991	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.46	1.004	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.06	7.76	0.652	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.79	7.76	1.004	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.71	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.08	7.76	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.76	0.677	ok	0.677	0.617-0.737
Freon 123A	5.30	7.76	0.683	ok	0.682	0.622-0.742
Freon 152A	4.15	7.76	0.535	ok	0.536	0.476-0.596
Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.16	13.71	0.887	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.56	7.76	0.716	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.71	1.262	ok	1.261	1.201-1.321
Methylene chloride	6.03	7.76	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.25	7.76	0.934	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.96	9.46	1.159	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.92	7.76	0.892	ok	0.890	0.830-0.950
Methylmethacrylate	10.31	9.46	1.090	ok	1.088	1.028-1.148
Nonane	14.98	13.71	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.71	0.933	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.23	7.76	0.545	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.71	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.62	9.46	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.51	13.71	1.423	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.32	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.98	7.76	0.771	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.24	7.76	1.062	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.10	9.46	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.02	7.76	0.905	ok	0.903	0.843-0.963
m,p-Xylene	14.31	13.71	1.044	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	85709	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	366776	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	141020	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.34	7.76	0.688	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.76	0.595	ok	0.595	0.535-0.655
Benzene	9.15	9.47	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.09	9.47	1.065	ok	1.066	1.006-1.126
Bromoform	14.44	13.72	1.052	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.18	7.76	0.668	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.72	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.72	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.93	7.76	0.635	ok	0.635	0.575-0.695
Chloroform	7.86	7.76	1.013	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.05	13.72	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.28	7.76	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.33	9.47	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.90	7.76	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.56	13.72	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.47	1.041	ok	1.042	0.982-1.102
1,4-Dioxane	10.14	9.47	1.071	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.35	13.72	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.76	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.95	9.47	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.02	13.72	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.52	13.72	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.10	13.72	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.47	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.67	7.76	0.988	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.47	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.03	7.76	0.648	ok	0.649	0.589-0.709
Ethylbenzene	14.13	13.72	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.75	7.76	0.999	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.72	1.183	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.08	7.76	0.526	ok	0.526	0.466-0.586
Freon 123	5.26	7.76	0.678	ok	0.677	0.617-0.737
Freon 123A	5.30	7.76	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.76	0.536	ok	0.536	0.476-0.596
Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.72	1.460	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.13	13.72	0.884	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.72	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.53	7.76	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.72	1.261	ok	1.261	1.201-1.321
Methylene chloride	6.04	7.76	0.778	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.20	7.76	0.928	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.92	9.47	1.153	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.76	0.888	ok	0.890	0.830-0.950
Methylmethacrylate	10.29	9.47	1.087	ok	1.088	1.028-1.148
Nonane	14.99	13.72	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.72	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.22	7.76	0.544	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.73	13.72	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.86	13.72	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.63	9.47	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.72	1.421	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.81	13.72	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.33	13.72	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.03	9.47	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.95	7.76	0.767	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.72	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.19	7.76	1.055	ok	1.059	0.999-1.119
Toluene	11.89	9.47	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.11	9.47	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.76	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.32	13.72	1.044	ok	1.043	0.983-1.103
o-Xylene	14.83	13.72	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.47	1.086	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	80158	ok	82191	49315-115067
1,4-Difluorobenzene	9.47	ok	9.46	9.13-9.79	369628	ok	366744	220046-513442
Chlorobenzene-D5	13.72	ok	13.71	13.38-14.04	186452	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.35	7.76	0.689	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.76	0.595	ok	0.595	0.535-0.655
Benzene	9.14	9.46	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.44	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.76	0.621	ok	0.621	0.561-0.681
Bromoethene	5.18	7.76	0.668	ok	0.667	0.607-0.727
n-Butane	4.64	7.76	0.598	ok	0.598	0.538-0.658
Benzyl Chloride	17.01	13.71	1.241	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.76	0.807	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.76	0.540	ok	0.540	0.480-0.600
Chloroethane	4.92	7.76	0.634	ok	0.635	0.575-0.695
Chloroform	7.85	7.76	1.012	ok	1.012	0.952-1.072
Chloromethane	4.38	7.76	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.76	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.76	1.195	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.76	0.888	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.76	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.71	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.76	1.094	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.15	9.46	1.073	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.76	0.549	ok	0.549	0.489-0.609
Dibromochloromethane	12.34	13.71	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.76	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.76	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.95	9.46	1.158	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.71	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.09	13.71	1.247	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.67	7.76	0.988	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.50	9.46	1.004	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.76	1.086	ok	1.087	1.027-1.147
Ethanol	5.03	7.76	0.648	ok	0.649	0.589-0.709
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.75	7.76	0.999	ok	1.000	0.940-1.060
4-Ethyltoluene	16.23	13.71	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.76	0.798	ok	0.798	0.738-0.858
Freon 114	4.44	7.76	0.572	ok	0.572	0.512-0.632
Freon 115	4.08	7.76	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.76	0.677	ok	0.677	0.617-0.737
Freon 123A	5.29	7.76	0.682	ok	0.682	0.622-0.742
Freon 152A	4.16	7.76	0.536	ok	0.536	0.476-0.596
Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.67	7.76	0.988	ok	0.989	0.929-1.049
2-Hexanone	12.12	13.71	0.884	ok	0.885	0.825-0.945
Isopropylbenzene	15.47	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.52	7.76	0.711	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.30	13.71	1.262	ok	1.261	1.201-1.321
Methylene chloride	6.03	7.76	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.20	7.76	0.928	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.92	9.46	1.154	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.76	0.888	ok	0.890	0.830-0.950
Methylmethacrylate	10.29	9.46	1.088	ok	1.088	1.028-1.148
Nonane	14.98	13.71	1.093	ok	1.092	1.032-1.152
Octane	12.78	13.71	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
Propane	4.22	7.76	0.544	ok	0.544	0.484-0.604
Propylene	4.21	7.76	0.543	ok	0.543	0.483-0.603
Styrene	14.72	13.71	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.71	7.76	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.62	9.46	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.50	13.71	1.422	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.32	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.94	7.76	0.765	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.20	7.76	1.057	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.11	9.46	1.069	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.76	0.704	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.76	0.584	ok	0.584	0.524-0.644
Vinyl Acetate	7.00	7.76	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.30	13.71	1.043	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.76	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	91268	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	403912	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	172529	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.38	7.75	0.694	ok	0.692	0.632-0.752
1,3-Butadiene	4.61	7.75	0.595	ok	0.595	0.535-0.655
Benzene	9.13	9.46	0.965	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.43	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.75	0.622	ok	0.621	0.561-0.681
Bromoethene	5.17	7.75	0.667	ok	0.667	0.607-0.727
Benzyl Chloride	17.00	13.71	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.75	0.808	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.75	0.541	ok	0.540	0.480-0.600
Chloroethane	4.92	7.75	0.635	ok	0.635	0.575-0.695
Chloroform	7.84	7.75	1.012	ok	1.012	0.952-1.072
Chloromethane	4.39	7.75	0.566	ok	0.565	0.505-0.625
3-Chloropropene	6.10	7.75	0.787	ok	0.786	0.726-0.846
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.75	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.75	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.92	7.75	0.764	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.56	13.71	0.916	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.75	1.095	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
1,4-Dioxane	10.23	9.46	1.081	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.75	0.550	ok	0.549	0.489-0.609
Dibromochloromethane	12.34	13.71	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.75	0.867	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.75	0.985	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.94	9.46	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.01	13.71	1.241	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.51	13.71	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.09	13.71	1.247	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271
Di-Isopropyl ether	7.69	7.75	0.992	ok	0.990	0.930-1.050

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
2,3-Dimethylpentane	9.49	9.46	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.75	1.088	ok	1.087	1.027-1.147
Ethylbenzene	14.13	13.71	1.031	ok	1.030	0.970-1.090
Freon 113	6.18	7.75	0.797	ok	0.798	0.738-0.858
Freon 114	4.44	7.75	0.573	ok	0.572	0.512-0.632
Freon 115	4.08	7.75	0.526	ok	0.526	0.466-0.586
Freon 123	5.25	7.75	0.677	ok	0.677	0.617-0.737
Freon 123A	5.28	7.75	0.681	ok	0.682	0.622-0.742
Freon 152A	4.16	7.75	0.537	ok	0.536	0.476-0.596
Heptane	10.27	9.46	1.086	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.71	1.461	ok	1.460	1.400-1.520
Hexane	7.67	7.75	0.990	ok	0.989	0.929-1.049
2-Hexanone	12.15	13.71	0.886	ok	0.885	0.825-0.945
Isopropylbenzene	15.46	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.56	7.75	0.717	ok	0.715	0.655-0.775
Methyl Tert Butyl Ether	6.92	7.75	0.893	ok	0.890	0.830-0.950
Nonane	14.97	13.71	1.092	ok	1.092	1.032-1.152
Octane	12.79	13.71	0.933	ok	0.932	0.872-0.992
Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
Propylene	4.21	7.75	0.543	ok	0.543	0.483-0.603
1,1,1-Trichloroethane	8.71	7.75	1.124	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.85	13.71	1.083	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.63	9.46	1.229	ok	1.228	1.168-1.288
1,2,4-Trichlorobenzene	19.52	13.71	1.424	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.80	13.71	1.225	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.31	13.71	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.98	7.75	0.772	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.26	7.75	1.066	ok	1.059	0.999-1.119
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.09	9.46	1.067	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.45	7.75	0.703	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.75	0.585	ok	0.584	0.524-0.644

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Vinyl Acetate	7.02	7.75	0.906	ok	0.903	0.843-0.963
m,p-Xylene	14.30	13.71	1.043	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.67	7.75	0.732	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.28	9.46	1.087	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	85786	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	379583	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	146326	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.40	7.75	0.697	ok	0.692	0.632-0.752
1,3-Butadiene	4.61	7.75	0.595	ok	0.595	0.535-0.655
Benzene	9.14	9.46	0.966	ok	0.966	0.906-1.026
Bromodichloromethane	10.08	9.46	1.066	ok	1.066	1.006-1.126
Bromoform	14.43	13.71	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.75	0.622	ok	0.621	0.561-0.681
Bromoethene	5.18	7.75	0.668	ok	0.667	0.607-0.727
Carbon disulfide	6.26	7.75	0.808	ok	0.807	0.747-0.867
Chlorobenzene	13.76	13.71	1.004	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.20	7.75	0.542	ok	0.540	0.480-0.600
Chloroethane	4.93	7.75	0.636	ok	0.635	0.575-0.695
Chloroform	7.84	7.75	1.012	ok	1.012	0.952-1.072
Chloromethane	4.39	7.75	0.566	ok	0.565	0.505-0.625
2-Chlorotoluene	16.04	13.71	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.27	7.75	1.196	ok	1.195	1.135-1.255
Cyclohexane	9.32	9.46	0.985	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.89	7.75	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.91	7.75	0.763	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.55	13.71	0.915	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.49	7.75	1.095	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.86	9.46	1.042	ok	1.042	0.982-1.102
Dichlorodifluoromethane	4.26	7.75	0.550	ok	0.549	0.489-0.609
Dibromochloromethane	12.33	13.71	0.899	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.71	7.75	0.866	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.63	7.75	0.985	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.93	9.46	1.155	ok	1.156	1.096-1.216
trans-1,3-Dichloropropene	11.46	9.46	1.211	ok	1.211	1.151-1.271
Di-Isopropyl ether	7.71	7.75	0.995	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.49	9.46	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.43	7.75	1.088	ok	1.087	1.027-1.147
Ethylbenzene	14.12	13.71	1.030	ok	1.030	0.970-1.090
Freon 113	6.19	7.75	0.799	ok	0.798	0.738-0.858
Freon 114	4.44	7.75	0.573	ok	0.572	0.512-0.632
Freon 115	4.08	7.75	0.526	ok	0.526	0.466-0.586

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Freon 123	5.25	7.75	0.677	ok	0.677	0.617-0.737
Freon 123A	5.29	7.75	0.683	ok	0.682	0.622-0.742
Freon 152A	4.16	7.75	0.537	ok	0.536	0.476-0.596
Heptane	10.27	9.46	1.086	ok	1.086	1.026-1.146
Hexane	7.67	7.75	0.990	ok	0.989	0.929-1.049
Isopropylbenzene	15.47	13.71	1.128	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.57	7.75	0.719	ok	0.715	0.655-0.775
Methyl Tert Butyl Ether	6.94	7.75	0.895	ok	0.890	0.830-0.950
Nonane	14.98	13.71	1.093	ok	1.092	1.032-1.152
Octane	12.79	13.71	0.933	ok	0.932	0.872-0.992
Propylene	4.21	7.75	0.543	ok	0.543	0.483-0.603
1,1,1-Trichloroethane	8.71	7.75	1.124	ok	1.123	1.063-1.183
1,1,2-Trichloroethane	11.63	9.46	1.229	ok	1.228	1.168-1.288
2,2,4-Trimethylpentane	10.02	9.46	1.059	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.99	7.75	0.773	ok	0.769	0.709-0.829
Tetrachloroethylene	13.03	13.71	0.950	ok	0.950	0.890-1.010
Toluene	11.88	9.46	1.256	ok	1.256	1.196-1.316
Trichloroethylene	10.09	9.46	1.067	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.75	0.705	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.75	0.585	ok	0.584	0.524-0.644
m,p-Xylene	14.31	13.71	1.044	ok	1.043	0.983-1.103
o-Xylene	14.82	13.71	1.081	ok	1.081	1.021-1.141

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	73323	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	315332	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	125469	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	85556	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	372344	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	147170	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	74121	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	328473	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	136851	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Acetone	5.35	7.77	0.689	ok	0.692	0.632-0.752
1,3-Butadiene	4.62	7.77	0.595	ok	0.595	0.535-0.655
Benzene	9.15	9.48	0.965	ok	0.966	0.906-1.026
Bromodichloromethane	10.10	9.48	1.065	ok	1.066	1.006-1.126
Bromoform	14.46	13.73	1.053	ok	1.053	0.993-1.113
Bromomethane	4.82	7.77	0.620	ok	0.621	0.561-0.681
Bromoethene	5.18	7.77	0.667	ok	0.667	0.607-0.727
n-Butane	4.64	7.77	0.597	ok	0.598	0.538-0.658
Benzyl Chloride	17.03	13.73	1.240	ok	1.240	1.180-1.300
Carbon disulfide	6.26	7.77	0.806	ok	0.807	0.747-0.867
Chlorobenzene	13.77	13.73	1.003	ok	1.003	0.943-1.063
Chlorodifluoromethane	4.19	7.77	0.539	ok	0.540	0.480-0.600
Chloroethane	4.93	7.77	0.634	ok	0.635	0.575-0.695
Chloroform	7.87	7.77	1.013	ok	1.012	0.952-1.072
Chloromethane	4.38	7.77	0.564	ok	0.565	0.505-0.625
3-Chloropropene	6.11	7.77	0.786	ok	0.786	0.726-0.846
2-Chlorotoluene	16.06	13.73	1.170	ok	1.170	1.110-1.230
Carbon tetrachloride	9.28	7.77	1.194	ok	1.195	1.135-1.255
Cyclohexane	9.33	9.48	0.984	ok	0.985	0.925-1.045
1,1-Dichloroethane	6.91	7.77	0.889	ok	0.889	0.829-0.949
1,1-Dichloroethylene	5.93	7.77	0.763	ok	0.764	0.704-0.824
1,2-Dibromoethane	12.57	13.73	0.916	ok	0.916	0.856-0.976
1,2-Dichloroethane	8.51	7.77	1.095	ok	1.095	1.035-1.155
1,2-Dichloropropane	9.87	9.48	1.041	ok	1.042	0.982-1.102
1,4-Dioxane	10.15	9.48	1.071	ok	1.075	1.015-1.135
Dichlorodifluoromethane	4.26	7.77	0.548	ok	0.549	0.489-0.609
Dibromochloromethane	12.36	13.73	0.900	ok	0.900	0.840-0.960
trans-1,2-Dichloroethylene	6.72	7.77	0.865	ok	0.866	0.806-0.926
cis-1,2-Dichloroethylene	7.64	7.77	0.983	ok	0.983	0.923-1.043
cis-1,3-Dichloropropene	10.96	9.48	1.156	ok	1.156	1.096-1.216
m-Dichlorobenzene	17.03	13.73	1.240	ok	1.240	1.180-1.300
o-Dichlorobenzene	17.53	13.73	1.277	ok	1.277	1.217-1.337
p-Dichlorobenzene	17.11	13.73	1.246	ok	1.246	1.186-1.306
trans-1,3-Dichloropropene	11.47	9.48	1.210	ok	1.211	1.151-1.271

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Di-Isopropyl ether	7.68	7.77	0.988	ok	0.990	0.930-1.050
2,3-Dimethylpentane	9.51	9.48	1.003	ok	1.004	0.944-1.064
2,4-Dimethylpentane	8.44	7.77	1.086	ok	1.087	1.027-1.147
Ethanol	5.04	7.77	0.649	ok	0.649	0.589-0.709
Ethylbenzene	14.14	13.73	1.030	ok	1.030	0.970-1.090
Ethyl Acetate	7.76	7.77	0.999	ok	1.000	0.940-1.060
4-Ethyltoluene	16.25	13.73	1.184	ok	1.183	1.123-1.243
Freon 113	6.19	7.77	0.797	ok	0.798	0.738-0.858
Freon 114	4.44	7.77	0.571	ok	0.572	0.512-0.632
Freon 115	4.08	7.77	0.525	ok	0.526	0.466-0.586
Freon 123	5.26	7.77	0.677	ok	0.677	0.617-0.737
Freon 123A	5.30	7.77	0.682	ok	0.682	0.622-0.742
Freon 152A	4.16	7.77	0.535	ok	0.536	0.476-0.596
Heptane	10.29	9.48	1.085	ok	1.086	1.026-1.146
Hexachlorobutadiene	20.03	13.73	1.459	ok	1.460	1.400-1.520
Hexane	7.67	7.77	0.987	ok	0.989	0.929-1.049
2-Hexanone	12.14	13.73	0.884	ok	0.885	0.825-0.945
Isopropylbenzene	15.48	13.73	1.127	ok	1.128	1.068-1.188
Isopropyl Alcohol	5.54	7.77	0.713	ok	0.715	0.655-0.775
p-Isopropyltoluene	17.32	13.73	1.261	ok	1.261	1.201-1.321
Methylene chloride	6.04	7.77	0.777	ok	0.777	0.717-0.837
Methyl ethyl ketone	7.21	7.77	0.928	ok	0.930	0.870-0.990
Methyl Isobutyl Ketone	10.93	9.48	1.153	ok	1.155	1.095-1.215
Methyl Tert Butyl Ether	6.89	7.77	0.887	ok	0.890	0.830-0.950
Methylmethacrylate	10.31	9.48	1.088	ok	1.088	1.028-1.148
Nonane	14.99	13.73	1.092	ok	1.092	1.032-1.152
Octane	12.80	13.73	0.932	ok	0.932	0.872-0.992
Pentane	5.67	7.77	0.730	ok	0.731	0.671-0.791
Propane	4.22	7.77	0.543	ok	0.544	0.484-0.604
Propylene	4.21	7.77	0.542	ok	0.543	0.483-0.603
Styrene	14.74	13.73	1.074	ok	1.074	1.014-1.134
1,1,1-Trichloroethane	8.72	7.77	1.122	ok	1.123	1.063-1.183
1,1,2,2-Tetrachloroethane	14.88	13.73	1.084	ok	1.083	1.023-1.143
1,1,2-Trichloroethane	11.64	9.48	1.228	ok	1.228	1.168-1.288

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
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V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
1,2,4-Trichlorobenzene	19.51	13.73	1.421	ok	1.422	1.362-1.482
1,2,4-Trimethylbenzene	16.83	13.73	1.226	ok	1.225	1.165-1.285
1,3,5-Trimethylbenzene	16.34	13.73	1.190	ok	1.190	1.130-1.250
2,2,4-Trimethylpentane	10.03	9.48	1.058	ok	1.059	0.999-1.119
Tertiary Butyl Alcohol	5.96	7.77	0.767	ok	0.769	0.709-0.829
Tetrachloroethylene	13.04	13.73	0.950	ok	0.950	0.890-1.010
Tetrahydrofuran	8.19	7.77	1.054	ok	1.059	0.999-1.119
Toluene	11.89	9.48	1.254	ok	1.256	1.196-1.316
Trichloroethylene	10.12	9.48	1.068	ok	1.067	1.007-1.127
Trichlorofluoromethane	5.46	7.77	0.703	ok	0.704	0.644-0.764
Vinyl chloride	4.53	7.77	0.583	ok	0.584	0.524-0.644
Vinyl Acetate	7.01	7.77	0.902	ok	0.903	0.843-0.963
m,p-Xylene	14.33	13.73	1.044	ok	1.043	0.983-1.103
o-Xylene	14.84	13.73	1.081	ok	1.081	1.021-1.141
TVHC As Equiv Pentane	5.68	7.77	0.731	ok	0.731	0.671-0.791
TVHC As Equiv Heptane	10.29	9.48	1.085	ok	1.086	1.026-1.146

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.77	ok	7.76	7.43-8.09	78769	ok	82191	49315-115067
1,4-Difluorobenzene	9.48	ok	9.46	9.13-9.79	373529	ok	366744	220046-513442
Chlorobenzene-D5	13.73	ok	13.71	13.38-14.04	216753	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.65	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	98336	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	430117	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	163974	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.65	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.76	ok	7.76	7.43-8.09	81662	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	355221	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	139143	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	Reporting this level
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	87655	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	393462	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	162462	ok	156721	94033-219409

Initial Calibration Retention Time/Internal Standard Area Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Sample Number	Lab File ID	Injected	By	Level	Inst ID	Method	
V3W523-ICC523	3W12851.D	10/02/09 19:46	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12852.D	10/02/09 20:26	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12854.D	10/02/09 22:24	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12855.D	10/02/09 23:05	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12856.D	10/02/09 23:44	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12857.D	10/03/09 00:25	YMH	0.1	GCMS3W	TO-15	
V3W523-IC523	3W12858.D	10/03/09 01:04	YMH	0.04	GCMS3W	TO-15	
V3W523-IC523	3W12859.D	10/03/09 02:23	YMH	5.0	GCMS3W	TO-15	
V3W523-IC523	3W12860.D	10/03/09 03:03	YMH	10	GCMS3W	TO-15	
V3W523-IC523	3W12861.D	10/03/09 03:45	YMH	40	GCMS3W	TO-15	
V3W523-IC523	3W12862.D	10/03/09 04:25	YMH	0.5	GCMS3W	TO-15	
V3W523-IC523	3W12863.D	10/03/09 05:04	YMH	0.2	GCMS3W	TO-15	
V3W523-IC523	3W12864.D	10/03/09 06:24	YMH	20	GCMS3W	TO-15	
V3W523-IC523	3W12865.D	10/03/09 07:06	YMH	40	GCMS3W	TO-15	Reporting this level

Target Compound	RT (min.)	Istd RT (min.)	Rel RT		Mean Rel RT	Rel RT Range (+ /- .06)
Naphthalene	19.64	13.71	1.433	ok	1.433	1.373-1.493

Internal Standard	RT (min.)		Mean RT(min.)	RT Range (+ /- 0.33)	Area		Mean Area	Area Range (+ /- 40 %)
Bromochloromethane	7.75	ok	7.76	7.43-8.09	73371	ok	82191	49315-115067
1,4-Difluorobenzene	9.46	ok	9.46	9.13-9.79	348551	ok	366744	220046-513442
Chlorobenzene-D5	13.71	ok	13.71	13.38-14.04	149231	ok	156721	94033-219409

Volatile Surrogate Recovery Summary

Job Number: JA28237
Account: HLANJPR Mactec
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Method: TO-15 **Matrix:** AIR

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1
JA28237-1	3W12875.D	90.0
JA28237-1	3W12871.D	98.0
JA28237-2	3W12876.D	96.0
JA28237-2	3W12872.D	101.0
JA28237-3	3W12877.D	91.0
JA28237-3	3W12873.D	100.0
JA28296-1DUP	3W12879.D	93.0
V2W1073-SCC	2W25443.D	87.0
V2W1075-SCC	2W25482.D	70.0
V3W524-BS	3W12868.D	104.0
V3W524-BSD	3W12869.D	102.0
V3W524-MB	3W12870.D	86.0
V2W1073-BS	2W25420.D	113.0
V2W1073-BSD	2W25421.D	114.0
V2W1073-MB	2W25422.D	78.0
V2W1075-BS	2W25473.D	108.0
V2W1075-BSD	2W25474.D	107.0
V2W1075-MB	2W25475.D	74.0

Surrogate Compounds	Recovery Limits
S1 = 4-Bromofluorobenzene	65-128%

Initial Calibration Summary

Job Number: JA28237 **Sample:** V2W1070-ICC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25356.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Response Factor Report MS2W

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Calibration Files
0.04=2W25363.D 0.1 =2W25362.D 0.2 =2W25359.D 0.5 =2W25357.D
5.0 =2W25361.D 10. =2W25356.D 20. =2W25360.D 40. =2W25364.D

Compound	0.04	0.1	0.2	0.5	5.0	10.	20.	40.	Avg	%RSD
1) I BROMOCHLOROMETHANE	----------	----------	----------	----------	ISTD	----------	----------	----------		
2) FREON 115	1.009	1.155	0.971	1.128	0.946	1.063	0.932	1.029		8.59
3) DICHLORODIFL	1.479	1.744	1.467	1.698	1.478	1.620	1.392	1.554		8.57
4) FREON 152A	1.003	1.190	0.983	1.177	1.082	1.039	0.990	1.066		8.14
5) CHLORODIFLUO		0.470	0.411	0.441	0.414	0.392	0.370	0.416		8.48
6) PROPYLENE		2.078	1.743	1.838	1.758	1.622	1.476	1.752		11.61
7) PROPANE		1.010	0.683	0.655	0.625	0.583	0.533	0.682		24.87
8) FREON 114	4.061	4.779	4.017	4.637	4.079	3.782	3.326	4.097		12.03
9) CHLOROMETHAN		0.690	0.558	0.596	0.577	0.558	0.542	0.587		9.18
10) VINYL CHLORI	1.712	2.019	1.746	1.998	1.857	1.790	1.712	1.833		7.07
11) 1,3-BUTADIEN	1.257	1.558	1.352	1.542	1.449	1.366	1.301	1.404		8.29
12) n-BUTANE	3.445	3.467	2.888	3.044	3.018	2.788	2.491	3.020		11.56
13) BROMOMETHANE	1.406	1.589	1.396	1.701	1.435	1.402	1.348	1.468		8.70
14) CHLOROETHANE	0.778	1.038	0.932	1.086	1.007	0.983	0.960	0.969		10.12
15) FREON 123	3.093	2.990	3.346	3.274	3.636	3.204	3.018	2.775	3.167	8.25
16) FREON 123A	1.650	1.885	1.722	1.939	1.673	1.634	1.606	1.730		7.53
17) TRICHLOROFLU	3.991	3.350	3.745	3.281	3.858	3.336	3.204	3.026	3.474	9.93
18) ISOPROPYL AL		2.975	2.772	2.540	2.487	2.391	2.181	2.558		10.99
19) ACETONE		0.845	0.752	0.713	0.697	0.682	0.681	0.728		8.63
20) PENTANE	2.092	2.443	2.046	2.134	2.005	1.858	1.659	2.034		11.94
21) TVHC as EQUI		1.239	1.122	1.274	1.198	1.132	1.039	1.167	E1	7.40
22) ETHYL ETHER		0.656	0.648	0.749	0.710	0.704	0.713	0.697		5.46
23) IODOMETHANE	3.231	3.141	3.582	3.231	4.117	3.435	3.381	3.226	3.418	9.25
24) 1,1-DICHLORO	1.402	1.518	1.316	1.540	1.306	1.281	1.243	1.372		8.56
25) CARBON DISUL	5.054	4.601	5.175	4.572	5.174	4.533	4.339	4.024	4.684	8.90
26) ETHANOL		0.864	0.547	0.537	0.555	0.542	0.540	0.598		21.88
27) BROMOETHENE	1.205	1.387	1.249	1.622	1.360	1.332	1.290	1.349		10.08
28) METHYLENE CH		1.778	1.411	1.396	1.261	1.228	1.198	1.379		15.56
29) 3-CHLOROPROP		0.684	0.618	0.766	0.707	0.699	0.690	0.694		6.81
30) FREON 113	2.286	2.094	2.331	2.070	2.445	2.081	2.041	1.968	2.164	7.73
31) TRANS-1,2-DI	1.569	1.775	1.565	1.809	1.595	1.559	1.492	1.623		7.38
32) TERTIARY BUT	2.872	2.753	3.091	3.107	2.972	2.581		2.896		7.05
33) METHYL TERTI	3.851	3.682	4.046	3.993	4.008	3.859	3.681	3.505	3.828	5.00
34) TETRAHYDROFU	1.799	1.989	1.937	1.988	2.080	1.998	1.963	1.965		4.36
35) HEXANE	2.500	2.176	2.717	2.446	2.701	2.506	2.363	2.054	2.433	9.54
36) VINYL ACETAT		0.257	0.298	0.338	0.340	0.333	0.353	0.320		11.29
37) 1,1-DICHLORO	3.004	2.879	3.402	3.122	3.367	3.098	2.889	2.637	3.050	8.40
38) METHYL ETHYL		0.705	0.681	0.760	0.748	0.747	0.765	0.734		4.59
39) cis-1,2-DICH	1.532	1.664	1.544	1.750	1.583	1.552	1.500	1.589		5.52
40) ETHYL ACETAT		0.476	0.498	0.470	0.470	0.446	0.417	0.463		6.01
41) CHLOROFORM	2.895	2.650	3.149	2.889	3.222	2.941	2.820	2.654	2.902	7.09
42) 2,4-DIMETHYL	2.832	2.539	3.023	2.930	3.204	2.972	2.807	2.517	2.853	8.22
43) 1,1,1-TRICHL	2.950	2.786	3.178	2.990	3.314	3.019	2.876	2.660	2.972	7.00
44) CARBON TETRA	3.153	2.826	3.320	3.091	3.488	3.111	2.971	2.732	3.086	8.01
45) 1,2-DICHLORO	1.873	2.241	2.078	2.259	2.169	2.056	1.911	2.084		7.27

Initial Calibration Summary

Job Number: JA28237 **Sample:** V2W1070-ICC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25356.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

46) I 1,4-DIFLUOROBENZENE	----------ISTD----------									
47) BENZENE	1.154	1.034	1.134	1.040	1.132	1.002	0.932	0.829	1.032	10.84
48) CYCLOHEXANE		0.507	0.538	0.462	0.504	0.431	0.414	0.383	0.463	12.15
49) 2,3-DIMETHYL		0.201	0.217	0.207	0.245	0.221	0.214	0.200	0.215	7.24
50) TRICHLOROETH	0.376	0.368	0.437	0.403	0.430	0.367	0.339	0.286	0.376	13.15
51) 1,2-DICHLORO		0.357	0.403	0.386	0.436	0.394	0.373	0.341	0.384	8.16
52) BROMODICHLOR	0.581	0.575	0.671	0.637	0.720	0.633	0.586	0.502	0.613	10.93
53) 2,2,4-TRIMET	1.475	1.366	1.728	1.626	1.604	1.396	1.218	0.928	1.418	18.08
54) 1,4-DIOXANE		0.210	0.192	0.210	0.203	0.181	0.172	0.148	0.188	11.96
55) METHYL METHA		0.292	0.287	0.297	0.318	0.306	0.301	0.295	0.299	3.37
56) HEPTANE	0.652	0.606	0.724	0.648	0.691	0.627	0.568	0.481	0.625	12.06
57) TVHC as EQUI		2.367	2.765	2.542	2.864	2.549	2.388	2.128	2.515	9.93
58) METHYL ISOBU			0.829	0.817	0.761	0.719	0.645	0.555	0.721	14.66
59) cis-1,3-DICH	0.450	0.458	0.527	0.507	0.572	0.531	0.499	0.456	0.500	8.67
60) TOLUENE	0.547	0.610	0.674	0.643	0.722	0.651	0.613	0.555	0.627	9.39
61) trans-1,3-DI		0.438	0.448	0.453	0.524	0.498	0.482	0.458	0.472	6.58
62) 1,1,2-TRICHL		0.297	0.317	0.300	0.343	0.313	0.293	0.273	0.305	7.26
63) I CHLOROBENZENE-D5	----------ISTD----------									
64) 2-HEXANONE			0.922	0.855	0.686	0.626	0.607	0.549	0.708	20.97
65) TETRACHLOROE	0.813	0.827	0.895	0.840	0.898	0.724	0.685	0.608	0.786	13.19
66) DIBROMOCHLOR	1.037	1.082	1.149	1.110	1.305	1.097	1.042	0.937	1.095	9.69
67) 1,2-DIBROMOE		1.028	1.012	0.991	1.067	0.917	0.878	0.806	0.957	9.73
68) OCTANE			1.522	1.529	1.655	1.459	1.254	1.015	1.406	16.52
69) 1,1,1,2-TETR		0.699	0.786	0.749	0.862	0.735	0.695	0.616	0.735	10.55
70) CHLOROBENZEN	1.485	1.510	1.552	1.437	1.494	1.249	1.171	1.013	1.364	14.31
71) ETHYLBENZENE	2.280	2.435	2.540	2.429	2.648	2.253	2.033	1.721	2.292	13.01
72) m,p-XYLENE	0.746	0.916	0.898	0.883	0.957	0.816	0.753	0.657	0.828	12.39
73) o-XYLENE	0.744	0.785	0.818	0.829	0.900	0.767	0.719	0.629	0.774	10.46
74) STYRENE		1.010	0.997	1.036	1.325	1.187	1.142	1.040	1.105	10.83
75) NONANE	1.073	1.028	1.229	1.242	1.404	1.263	1.104	0.861	1.150	14.64
76) BROMOFORM		0.821	0.790	0.800	1.005	0.876	0.860	0.800	0.850	8.90
77) 4-BROMOFLUOR	0.892	0.909	0.895	0.954	1.080	1.111	1.140	1.170	1.019	11.59
78) 1,1,2,2-TETR	0.949	1.075	0.971	0.940	1.058	0.919	0.846	0.702	0.932	12.74
79) ISOPROPYLBEN	1.865	2.142	2.110	2.117	2.411	2.070	1.898	1.600	2.027	11.84
80) 2-CHLOROTOLU		0.469	0.431	0.427	0.536	0.468	0.457	0.421	0.459	8.63
81) n-PROPYLBENZ		0.475	0.433	0.447	0.573	0.510	0.501	0.466	0.486	9.67
82) 4-ETHYLTOLUE		1.654	1.430	1.465	1.842	1.672	1.572	1.362	1.571	10.55
83) 1,3,5-TRIMET	1.210	1.395	1.212	1.323	1.580	1.368	1.309	1.140	1.317	10.43
84) TERT-BUTYLBE			0.299	0.304	0.384	0.343	0.341	0.309	0.330	9.80
85) 1,2,4-TRIMET	0.985	1.197	1.000	1.105	1.328	1.186	1.110	0.923	1.104	12.03
86) m-DICHLOROBE			0.644	0.599	0.730	0.662	0.669	0.643	0.658	6.53
87) BENZYL CHLOR			0.683	0.658	0.702	0.685	0.717	0.692	0.690	2.86
88) p-DICHLOROBE			0.645	0.583	0.629	0.585	0.610	0.591	0.607	4.16
89) SEC-BUTYLBEN			0.281	0.320	0.406	0.366	0.368	0.354	0.349	12.43
90) p-ISOPROPYLT			0.241	0.271	0.378	0.350	0.359	0.347	0.324	16.89
91) o-DICHLOROBE			0.528	0.496	0.589	0.539	0.558	0.545	0.542	5.69
92) n-BUTYLBENZE			0.171	0.178	0.236	0.228	0.245	0.247	0.218	15.65
93) HEXACHLOROBU			0.273	0.288	0.180	0.147	0.136	0.123	0.191	37.57
94) 1,2,4-TRICHL			0.175	0.163	0.104	0.093	0.101	0.103	0.123	29.37
95) CHLOROBENZENE-D5(A)	----------ISTD----------									
96) NAPHTHALENE									0.000	-1.00

(#) = Out of Range ### Number of calibration levels exceeded format ###

M2W1070.M Sun Sep 06 15:02:33 2009 MS2W

Initial Calibration Verification

Job Number: JA28237 **Sample:** V2W1071-ICV1070
Account: HLANJPR Mactec **Lab FileID:** 2W25367.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	107	0.00	9.95
2		FREON 115	1.029	0.944	8.3	107	0.00	5.01
3		DICHLORODIFLUOROMETHANE	1.554	1.410	9.3	102	0.01	5.02
4		FREON 152A	1.066	1.020	4.3	101	0.00	5.14
5		CHLORODIFLUOROMETHANE	0.416	0.386	7.2	100	0.01	5.18
6		PROPYLENE	1.752	1.572	10.3	96	0.01	5.23
7		PROPANE	0.682	0.560	17.9	96	0.00	5.25
8		FREON 114	4.097	4.000	2.4	105	0.00	5.56
9		CHLOROMETHANE	0.587	0.538	8.3	100	0.01	5.47
10		VINYL CHLORIDE	1.833	1.808	1.4	104	0.00	5.70
11		1,3-BUTADIENE	1.404	1.366	2.7	101	0.01	5.84
12		n-BUTANE	3.020	2.749	9.0	97	0.00	5.89
13		BROMOMETHANE	1.468	1.491	-1.6	111	0.01	6.12
14		CHLOROETHANE	0.969	0.987	-1.9	105	0.01	6.29
15		FREON 123	3.167	3.174	-0.2	106	0.00	6.76
16		FREON 123A	1.730	1.718	0.7	110	0.00	6.81
17		TRICHLOROFLUOROMETHANE	3.474	3.358	3.3	108	0.00	7.06
18		ISOPROPYL ALCOHOL	2.558	2.513	1.8	108	0.01	7.09
19		ACETONE	0.728	0.684	6.0	105	0.01	6.87
20		PENTANE	2.034	1.842	9.4	98	0.00	7.40
21	H	TVHC as EQUIV PENTANE	11.672	11.141	4.5	99	0.00	7.40
22		ETHYL ETHER	0.697	0.704	-1.0	106	0.00	7.40
23		IODOMETHANE	3.418	3.567	-4.4	111	0.00	7.64
24		1,1-DICHLOROETHYLENE	1.372	1.324	3.5	108	0.00	7.70
25		CARBON DISULFIDE	4.684	4.533	3.2	107	0.00	8.15
26		ETHANOL	0.598	0.545	8.9	105	0.01	6.40
27		BROMOETHENE	1.349	1.425	-5.6	112	0.00	6.64
28		METHYLENE CHLORIDE	1.379	1.233	10.6	105	0.00	7.79
29		3-CHLOROPROPENE	0.694	0.686	1.2	104	0.00	7.92
30		FREON 113	2.164	2.116	2.2	109	0.00	8.06
31		TRANS-1,2-DICHLOROETHYLEN	1.623	1.594	1.8	107	0.00	8.74
32		TERTIARY BUTYL ALCOHOL	2.896	2.919	-0.8	105	0.00	7.70
33		METHYL TERTIARY BUTYL ETH	3.828	3.825	0.1	106	0.00	8.97
34		TETRAHYDROFURAN	1.965	1.955	0.5	100	0.00	10.48
35		HEXANE	2.433	2.352	3.3	100	0.00	9.98
36		VINYL ACETATE	0.320	0.331	-3.4	104	0.00	9.04
37		1,1-DICHLOROETHANE	3.050	2.897	5.0	100	0.00	8.94
38		METHYL ETHYL KETONE	0.734	0.760	-3.5	109	0.00	9.31
39		cis-1,2-DICHLOROETHYLENE	1.589	1.568	1.3	106	0.00	9.78
40		ETHYL ACETATE	0.463	0.459	0.9	104	0.00	9.95
41		CHLOROFORM	2.902	2.844	2.0	103	0.00	10.08
42		2,4-DIMETHYLPENTANE	2.853	2.794	2.1	100	0.00	10.87

Initial Calibration Verification

Job Number: JA28237 **Sample:** V2W1071-ICV1070
Account: HLANJPR Mactec **Lab FileID:** 2W25367.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.972	2.899	2.5	103	0.00	11.10
44		CARBON TETRACHLORIDE	3.086	3.045	1.3	105	0.00	11.72
45		1,2-DICHLOROETHANE	2.084	1.993	4.4	98	0.00	10.83
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	107	0.00	11.89
47		BENZENE	1.032	0.953	7.7	102	0.00	11.57
48		CYCLOHEXANE	0.463	0.421	9.1	105	0.00	11.85
49		2,3-DIMETHYLPENTANE	0.215	0.211	1.9	103	0.00	12.07
50		TRICHLOROETHYLENE	0.376	0.354	5.9	104	0.00	12.62
51		1,2-DICHLOROPROPANE	0.384	0.370	3.6	101	0.00	12.39
52		BROMODICHLOROMETHANE	0.613	0.602	1.8	102	0.00	12.58
53		2,2,4-TRIMETHYLPENTANE	1.418	1.300	8.3	100	0.00	12.65
54		1,4-DIOXANE	0.188	0.187	0.5	111	0.00	12.62
55		METHYL METHACRYLATE	0.299	0.306	-2.3	108	0.00	12.78
56		HEPTANE	0.625	0.570	8.8	98	0.00	12.90
57	H	TVHC as EQUIV HEPTANE	2.515	2.395	4.8	101	0.00	12.90
58		METHYL ISOBUTYL KETONE	0.721	0.689	4.4	103	0.00	13.52
59		cis-1,3-DICHLOROPROPENE	0.500	0.510	-2.0	103	0.00	13.49
60		TOLUENE	0.627	0.629	-0.3	104	0.00	14.53
61		trans-1,3-DICHLOROPROPENE	0.472	0.488	-3.4	105	0.00	14.03
62		1,1,2-TRICHLOROETHANE	0.305	0.300	1.6	103	0.00	14.23
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	104	0.00	16.41
64		2-HEXANONE	0.708	0.674	4.8	112	0.00	14.77
65		TETRACHLOROETHYLENE	0.786	0.745	5.2	107	0.00	15.73
66		DIBROMOCHLOROMETHANE	1.095	1.115	-1.8	106	0.00	14.99
67		1,2-DIBROMOETHANE	0.957	0.954	0.3	108	0.00	15.25
68		OCTANE	1.406	1.359	3.3	97	0.00	15.52
69		1,1,1,2-TETRACHLOROETHANE	0.735	0.740	-0.7	105	0.00	16.44
70		CHLOROBENZENE	1.364	1.287	5.6	107	0.00	16.46
71		ETHYLBENZENE	2.292	2.270	1.0	105	0.00	16.85
72		m,p-XYLENE	0.828	0.837	-1.1	107	0.00	17.05
73		o-XYLENE	0.774	0.790	-2.1	107	0.00	17.56
74		STYRENE	1.105	1.238	-12.0	109	0.00	17.44
75		NONANE	1.150	1.195	-3.9	98	0.00	17.75
76		BROMOFORM	0.850	0.934	-9.9	111	0.00	17.17
77	S	4-BROMOFLUOROBENZENE	1.019	1.138	-11.7	107	0.00	18.05
78		1,1,2,2-TETRACHLOROETHANE	0.932	0.972	-4.3	110	0.00	17.55
79		ISOPROPYLBENZENE	2.027	2.141	-5.6	108	0.00	18.19
80		2-CHLOROTOLUENE	0.459	0.496	-8.1	110	0.00	18.71
81		n-PROPYLBENZENE	0.486	0.544	-11.9	111	0.00	18.73
82		4-ETHYLTOLUENE	1.571	1.807	-15.0	112	0.00	18.89
83		1,3,5-TRIMETHYLBENZENE	1.317	1.475	-12.0	112	0.00	18.97
84		TERT-BUTYLBENZENE	0.330	0.368	-11.5	112	0.00	19.42
85		1,2,4-TRIMETHYLBENZENE	1.104	1.295	-17.3	114	0.00	19.42
86		m-DICHLOROBENZENE	0.658	0.762	-15.8	120	0.00	19.61
87		BENZYL CHLORIDE	0.690	0.831	-20.4	126	0.00	19.58
88		p-DICHLOROBENZENE	0.607	0.690	-13.7	123	0.00	19.68
89		SEC-BUTYLBENZENE	0.349	0.402	-15.2	114	0.00	19.72
90		p-ISOPROPYLTOLUENE	0.324	0.399	-23.1	119	0.00	19.88
91		o-DICHLOROBENZENE	0.542	0.640	-18.1	123	0.00	20.06
92		n-BUTYLBENZENE	0.218	0.274	-25.7	125	0.00	20.34
93		HEXACHLOROBUTADIENE	0.191	0.200	-4.7	141	0.00	22.43
94		1,2,4-TRICHLOROBENZENE	0.123	0.138	-12.2	155	0.00	21.94
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	104	0.00	16.41
96		NAPHTHALENE		----------NA----------				

Initial Calibration Verification

Job Number: JA28237 **Sample:** V2W1071-ICV1070
Account: HLANJPR Mactec **Lab FileID:** 2W25367.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

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(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25356.D  M2W1070.M        Mon Sep 14 09:07:00 2009   MS2W
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Continuing Calibration Summary

Job Number: JA28237 **Sample:** V2W1073-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25419.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\msdchem\1\DATA\2W CORE\v2w1073\2w25419.d Vial: 2
Acq On : 9 Sep 2009 10:34 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	124	0.00	9.95
2		FREON 115	1.029	0.967	6.0	127	0.00	5.02
3		DICHLORODIFLUOROMETHANE	1.554	1.458	6.2	123	0.01	5.02
4		FREON 152A	1.066	0.943	11.5	108	0.00	5.14
5		CHLORODIFLUOROMETHANE	0.416	0.367	11.8	110	0.01	5.18
6		PROPYLENE	1.752	1.491	14.9	105	0.01	5.23
7		PROPANE	0.682	0.529	22.4	105	0.00	5.25
8		FREON 114	4.097	3.759	8.2	115	0.00	5.56
9		CHLOROMETHANE	0.587	0.509	13.3	110	0.01	5.47
10		VINYL CHLORIDE	1.833	1.740	5.1	117	0.00	5.70
11		1,3-BUTADIENE	1.404	1.303	7.2	112	0.00	5.83
12		n-BUTANE	3.020	2.619	13.3	108	0.00	5.89
13		BROMOMETHANE	1.468	1.452	1.1	126	0.01	6.12
14		CHLOROETHANE	0.969	0.938	3.2	116	0.00	6.29
15		FREON 123	3.167	2.985	5.7	116	0.00	6.76
16		FREON 123A	1.730	1.619	6.4	120	0.00	6.81
17		TRICHLOROFLUOROMETHANE	3.474	3.250	6.4	121	0.00	7.06
18		ISOPROPYL ALCOHOL	2.558	2.443	4.5	122	0.01	7.09
19		ACETONE	0.728	0.668	8.2	119	0.00	6.86
20		PENTANE	2.034	1.749	14.0	108	0.00	7.40
21	H	TVHC as EQUIV PENTANE	11.672	10.842	7.1	113	0.00	7.40
22		ETHYL ETHER	0.697	0.676	3.0	118	0.00	7.40
23		IODOMETHANE	3.418	3.442	-0.7	125	0.00	7.63
24		1,1-DICHLOROETHYLENE	1.372	1.275	7.1	121	0.00	7.70
25		CARBON DISULFIDE	4.684	4.385	6.4	120	0.00	8.15
26		ETHANOL	0.598	0.524	12.4	117	0.00	6.39
27		BROMOETHENE	1.349	1.376	-2.0	126	0.00	6.64
28		METHYLENE CHLORIDE	1.379	1.186	14.0	117	0.00	7.79
29		3-CHLOROPROPENE	0.694	0.649	6.5	114	0.00	7.92
30		FREON 113	2.164	2.043	5.6	122	0.00	8.06
31		TRANS-1,2-DICHLOROETHYLEN	1.623	1.522	6.2	119	0.00	8.74
32		TERTIARY BUTYL ALCOHOL	2.896	2.851	1.6	119	0.00	7.69
33		METHYL TERTIARY BUTYL ETH	3.828	3.694	3.5	119	0.00	8.97
34		TETRAHYDROFURAN	1.965	1.864	5.1	111	0.00	10.48
35		HEXANE	2.433	2.216	8.9	110	0.00	9.98
36		VINYL ACETATE	0.320	0.319	0.3	117	0.00	9.04
37		1,1-DICHLOROETHANE	3.050	2.733	10.4	110	0.00	8.94
38		METHYL ETHYL KETONE	0.734	0.745	-1.5	124	0.00	9.30
39		cis-1,2-DICHLOROETHYLENE	1.589	1.475	7.2	116	0.00	9.77
40		ETHYL ACETATE	0.463	0.435	6.0	115	0.00	9.95
41		CHLOROFORM	2.902	2.721	6.2	115	0.00	10.07
42		2,4-DIMETHYLPENTANE	2.853	2.639	7.5	110	0.00	10.87

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V2W1073-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25419.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.972	2.755	7.3	113	0.00	11.09
44		CARBON TETRACHLORIDE	3.086	2.917	5.5	117	0.00	11.72
45		1,2-DICHLOROETHANE	2.084	1.892	9.2	108	0.00	10.82
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	125	0.00	11.88
47		BENZENE	1.032	0.894	13.4	111	0.00	11.56
48		CYCLOHEXANE	0.463	0.401	13.4	116	0.00	11.85
49		2,3-DIMETHYLPENTANE	0.215	0.200	7.0	113	0.00	12.06
50		TRICHLOROETHYLENE	0.376	0.332	11.7	113	0.00	12.62
51		1,2-DICHLOROPROPANE	0.384	0.346	9.9	109	0.00	12.39
52		BROMODICHLOROMETHANE	0.613	0.569	7.2	112	0.00	12.58
53		2,2,4-TRIMETHYLPENTANE	1.418	1.208	14.8	108	0.00	12.65
54		1,4-DIOXANE	0.188	0.182	3.2	125	0.00	12.62
55		METHYL METHACRYLATE	0.299	0.299	0.0	122	0.00	12.78
56		HEPTANE	0.625	0.528	15.5	105	0.00	12.89
57	H	TVHC as EQUIV HEPTANE	2.515	2.250	10.5	110	0.00	12.89
58		METHYL ISOBUTYL KETONE	0.721	0.662	8.2	115	0.00	13.51
59		cis-1,3-DICHLOROPROPENE	0.500	0.475	5.0	111	0.00	13.49
60		TOLUENE	0.627	0.591	5.7	113	0.00	14.52
61		trans-1,3-DICHLOROPROPENE	0.472	0.455	3.6	114	0.00	14.02
62		1,1,2-TRICHLOROETHANE	0.305	0.282	7.5	112	0.00	14.22
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	120	0.00	16.41
64		2-HEXANONE	0.708	0.659	6.9	126	0.00	14.77
65		TETRACHLOROETHYLENE	0.786	0.707	10.1	117	0.00	15.73
66		DIBROMOCHLOROMETHANE	1.095	1.061	3.1	116	0.00	14.98
67		1,2-DIBROMOETHANE	0.957	0.896	6.4	117	0.00	15.25
68		OCTANE	1.406	1.258	10.5	103	0.00	15.52
69		1,1,1,2-TETRACHLOROETHANE	0.735	0.695	5.4	113	0.00	16.43
70		CHLOROBENZENE	1.364	1.208	11.4	116	0.00	16.46
71		ETHYLBENZENE	2.292	2.137	6.8	113	0.00	16.85
72		m,p-XYLENE	0.828	0.788	4.8	116	0.00	17.04
73		o-XYLENE	0.774	0.744	3.9	116	0.00	17.56
74		STYRENE	1.105	1.165	-5.4	117	0.00	17.44
75		NONANE	1.150	1.105	3.9	105	0.00	17.75
76		BROMOFORM	0.850	0.892	-4.9	122	0.00	17.16
77	S	4-BROMOFLUOROBENZENE	1.019	1.158	-13.6	125	0.00	18.05
78		1,1,2,2-TETRACHLOROETHANE	0.932	0.933	-0.1	121	0.00	17.55
79		ISOPROPYLBENZENE	2.027	2.015	0.6	116	0.00	18.19
80		2-CHLOROTOLUENE	0.459	0.466	-1.5	119	0.00	18.71
81		n-PROPYLBENZENE	0.486	0.516	-6.2	121	0.00	18.73
82		4-ETHYLTOLUENE	1.571	1.684	-7.2	120	0.00	18.88
83		1,3,5-TRIMETHYLBENZENE	1.317	1.422	-8.0	124	0.00	18.96
84		TERT-BUTYLBENZENE	0.330	0.351	-6.4	122	0.00	19.41
85		1,2,4-TRIMETHYLBENZENE	1.104	1.232	-11.6	124	0.00	19.42
86		m-DICHLOROBENZENE	0.658	0.722	-9.7	131	0.00	19.60
87		BENZYL CHLORIDE	0.690	0.791	-14.6	138	0.00	19.58
88		p-DICHLOROBENZENE	0.607	0.639	-5.3	130	0.00	19.68
89		SEC-BUTYLBENZENE	0.349	0.386	-10.6	126	0.00	19.71
90		p-ISOPROPYLTOLUENE	0.324	0.381	-17.6	130	0.00	19.88
91		o-DICHLOROBENZENE	0.542	0.613	-13.1	136	0.00	20.06
92		n-BUTYLBENZENE	0.218	0.265	-21.6	139	0.00	20.34
93		HEXACHLOROBUTADIENE	0.191	0.194	-1.6	157	0.00	22.43
94		1,2,4-TRICHLOROBENZENE	0.123	0.130	-5.7	167	0.00	21.94
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	120	0.00	16.41
96		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V2W1073-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25419.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

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(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25356.D  M2W1070.M        Thu Sep 10 09:14:08 2009   VOA-CLN-04
```

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V2W1075-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25472.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 25% Max. R.T. Dev 0.30min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	93	0.00	9.95
2		FREON 115	1.029	0.867	15.7	85	0.00	5.01
3		DICHLORODIFLUOROMETHANE	1.554	1.372	11.7	86	0.01	5.02
4		FREON 152A	1.066	1.058	0.8	91	0.00	5.13
5		CHLORODIFLUOROMETHANE	0.416	0.412	1.0	93	0.01	5.18
6		PROPYLENE	1.752	1.706	2.6	90	0.00	5.22
7		PROPANE	0.682	0.615	9.8	92	0.00	5.24
8		FREON 114	4.097	4.172	-1.8	95	0.00	5.56
9		CHLOROMETHANE	0.587	0.592	-0.9	96	0.00	5.46
10		VINYL CHLORIDE	1.833	1.890	-3.1	95	0.00	5.70
11		1,3-BUTADIENE	1.404	1.445	-2.9	93	0.01	5.84
12		n-BUTANE	3.020	3.013	0.2	93	0.00	5.89
13		BROMOMETHANE	1.468	1.495	-1.8	97	0.01	6.12
14		CHLOROETHANE	0.969	1.036	-6.9	96	0.01	6.29
15		FREON 123	3.167	3.332	-5.2	97	0.00	6.76
16		FREON 123A	1.730	1.712	1.0	95	0.01	6.82
17		TRICHLOROFLUOROMETHANE	3.474	3.550	-2.2	99	0.00	7.06
18		ISOPROPYL ALCOHOL	2.558	2.443	4.5	92	0.02	7.10
19		ACETONE	0.728	0.717	1.5	96	0.02	6.88
20		PENTANE	2.034	1.998	1.8	93	0.00	7.40
21	H	TVHC as EQUIV PENTANE	11.672	12.040	-3.2	94	0.01	7.40
22		ETHYL ETHER	0.697	0.710	-1.9	93	0.01	7.40
23		IODOMETHANE	3.418	3.406	0.4	92	0.00	7.64
24		1,1-DICHLOROETHYLENE	1.372	1.336	2.6	95	0.00	7.70
25		CARBON DISULFIDE	4.684	4.732	-1.0	97	0.00	8.15
26		ETHANOL	0.598	0.568	5.0	95	0.01	6.40
27		BROMOETHENE	1.349	1.370	-1.6	94	0.01	6.65
28		METHYLENE CHLORIDE	1.379	1.303	5.5	96	0.00	7.80
29		3-CHLOROPROPENE	0.694	0.707	-1.9	93	0.00	7.92
30		FREON 113	2.164	2.075	4.1	93	0.00	8.06
31		TRANS-1,2-DICHLOROETHYLEN	1.623	1.623	0.0	95	0.00	8.74
32		TERTIARY BUTYL ALCOHOL	2.896	2.645	8.7	83	0.01	7.70
33		METHYL TERTIARY BUTYL ETH	3.828	3.749	2.1	90	0.01	8.98
34		TETRAHYDROFURAN	1.965	1.926	2.0	86	0.02	10.50
35		HEXANE	2.433	2.487	-2.2	92	0.00	9.98
36		VINYL ACETATE	0.320	0.337	-5.3	92	0.00	9.05
37		1,1-DICHLOROETHANE	3.050	3.172	-4.0	95	0.00	8.94
38		METHYL ETHYL KETONE	0.734	0.719	2.0	90	0.01	9.32
39		cis-1,2-DICHLOROETHYLENE	1.589	1.618	-1.8	95	0.00	9.78
40		ETHYL ACETATE	0.463	0.437	5.6	86	0.00	9.95
41		CHLOROFORM	2.902	3.063	-5.5	97	0.00	10.08
42		2,4-DIMETHYLPENTANE	2.853	2.967	-4.0	93	0.00	10.87

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V2W1075-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25472.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		1,1,1-TRICHLOROETHANE	2.972	3.153	-6.1	97	0.00	11.09
44		CARBON TETRACHLORIDE	3.086	3.234	-4.8	97	0.00	11.72
45		1,2-DICHLOROETHANE	2.084	2.186	-4.9	94	0.00	10.83
46	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	89	0.00	11.89
47		BENZENE	1.032	1.071	-3.8	95	0.00	11.57
48		CYCLOHEXANE	0.463	0.455	1.7	94	0.00	11.85
49		2,3-DIMETHYLPENTANE	0.215	0.232	-7.9	93	0.00	12.06
50		TRICHLOROETHYLENE	0.376	0.391	-4.0	95	0.00	12.62
51		1,2-DICHLOROPROPANE	0.384	0.419	-9.1	94	0.00	12.39
52		BROMODICHLOROMETHANE	0.613	0.689	-12.4	97	0.00	12.58
53		2,2,4-TRIMETHYLPENTANE	1.418	1.485	-4.7	94	0.00	12.65
54		1,4-DIOXANE	0.188	0.179	4.8	88	0.02	12.64
55		METHYL METHACRYLATE	0.299	0.307	-2.7	89	0.00	12.78
56		HEPTANE	0.625	0.652	-4.3	92	0.00	12.89
57	H	TVHC as EQUIV HEPTANE	2.515	2.731	-8.6	95	0.00	12.89
58		METHYL ISOBUTYL KETONE	0.721	0.692	4.0	86	0.00	13.52
59		cis-1,3-DICHLOROPROPENE	0.500	0.561	-12.2	94	0.00	13.49
60		TOLUENE	0.627	0.693	-10.5	95	0.00	14.52
61		trans-1,3-DICHLOROPROPENE	0.472	0.519	-10.0	92	0.00	14.03
62		1,1,2-TRICHLOROETHANE	0.305	0.338	-10.8	96	0.00	14.22
63	I	CHLOROBENZENE-D5	1.000	1.000	0.0	89	0.00	16.41
64		2-HEXANONE	0.708	0.594	16.1	85	0.00	14.77
65		TETRACHLOROETHYLENE	0.786	0.765	2.7	94	0.00	15.73
66		DIBROMOCHLOROMETHANE	1.095	1.189	-8.6	97	0.00	14.98
67		1,2-DIBROMOETHANE	0.957	0.982	-2.6	96	0.00	15.25
68		OCTANE	1.406	1.504	-7.0	92	0.00	15.52
69		1,1,1,2-TETRACHLOROETHANE	0.735	0.789	-7.3	96	0.00	16.43
70		CHLOROBENZENE	1.364	1.342	1.6	96	0.00	16.46
71		ETHYLBENZENE	2.292	2.410	-5.1	96	0.00	16.85
72		m,p-XYLENE	0.828	0.879	-6.2	96	0.00	17.04
73		o-XYLENE	0.774	0.840	-8.5	98	0.00	17.56
74		STYRENE	1.105	1.269	-14.8	95	0.00	17.44
75		NONANE	1.150	1.329	-15.6	94	0.00	17.75
76		BROMOFORM	0.850	0.964	-13.4	98	0.00	17.16
77	S	4-BROMOFLUOROBENZENE	1.019	1.107	-8.6	89	0.00	18.05
78		1,1,2,2-TETRACHLOROETHANE	0.932	1.047	-12.3	102	0.00	17.55
79		ISOPROPYLBENZENE	2.027	2.309	-13.9	100	0.00	18.18
80		2-CHLOROTOLUENE	0.459	0.520	-13.3	99	0.00	18.71
81		n-PROPYLBENZENE	0.486	0.561	-15.4	98	0.00	18.73
82		4-ETHYLTOLUENE	1.571	1.846	-17.5	99	0.00	18.88
83		1,3,5-TRIMETHYLBENZENE	1.317	1.559	-18.4	102	0.00	18.96
84		TERT-BUTYLBENZENE	0.330	0.379	-14.8	99	0.00	19.41
85		1,2,4-TRIMETHYLBENZENE	1.104	1.336	-21.0	101	0.00	19.41
86		m-DICHLOROBENZENE	0.658	0.738	-12.2	100	0.00	19.60
87		BENZYL CHLORIDE	0.690	0.734	-6.4	96	0.00	19.58
88		p-DICHLOROBENZENE	0.607	0.651	-7.2	99	0.00	19.68
89		SEC-BUTYLBENZENE	0.349	0.405	-16.0	99	0.00	19.71
90		p-ISOPROPYLTOLUENE	0.324	0.375	-15.7	96	0.00	19.88
91		o-DICHLOROBENZENE	0.542	0.616	-13.7	102	0.00	20.06
92		n-BUTYLBENZENE	0.218	0.241	-10.6	95	0.00	20.34
93		HEXACHLOROBUTADIENE	0.191	0.174	8.9	105	0.00	22.43
94		1,2,4-TRICHLOROBENZENE	0.123	0.105	14.6	101	0.00	21.94
95		CHLOROBENZENE-D5(A)	1.000	1.000	0.0	89	0.00	16.41
96		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V2W1075-CC1070
Account: HLANJPR Mactec **Lab FileID:** 2W25472.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

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(#) = Out of Range                SPCC's out = 0  CCC's out = 0
 2W25356.D  M2W1070.M        Sun Sep 13 13:06:58 2009   MS2W
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Initial Calibration Summary

Job Number: JA28237 **Sample:** V3W523-ICC523
Account: HLANJPR Mactec **Lab FileID:** 3W12851.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Response Factor Report MS3W

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

Calibration Files
0.04=3W12858.D 0.1 =3W12857.D 0.2 =3W12854.D 0.5 =3W12852.D
5 =3W12856.D 10 =3W12851.D 20 =3W12855.D 40 =3W12861.D

Compound	0.04	0.1	0.2	0.5	5	10	20	40	Avg	%RSD
1) I BROMOCHLOROMETHANE	----------ISTD----------									
2) FREON 115	3.375	2.849	2.896	2.887	2.879	2.885	2.910	2.814	2.937	6.12
3) FREON 152A	1.030	0.933	0.845	0.909	0.905	0.911	0.936	0.930	0.925	5.55
4) CHLORODIFLUO	0.498	0.472	0.447	0.445	0.407	0.437	0.438	0.444	0.449	5.95
5) DICHLORODIFL	4.456	3.876	3.882	3.962	3.942	4.082	4.069	3.979	4.031	4.66
6) PROPANE			0.508	0.501	0.501	0.491	0.494	0.500	0.499	1.23
7) PROPYLENE	1.337	1.512	1.464	1.408	1.442	1.388	1.445	1.420	1.427	3.68
8) FREON 114	4.675	4.019	4.246	4.284	4.115	4.152	4.286	4.075	4.232	4.82
9) CHLOROMETHAN	2.206	1.533	1.408	1.307	1.301	1.261	1.333	1.313	1.458	21.54
10) VINYL CHLORI	1.405	1.383	1.430	1.465	1.491	1.449	1.515	1.474	1.451	3.04
11) 1,3-BUTADIEN	1.030	0.964	0.988	1.035	1.056	1.029	1.089	1.095	1.036	4.37
12) n-BUTANE			2.493	2.385	2.197	2.085	2.171	2.198	2.255	6.76
13) BROMOMETHANE	1.510	1.429	1.374	1.466	1.436	1.408	1.463	1.406	1.437	2.97
14) CHLOROETHANE	0.689	0.678	0.777	0.769	0.750	0.748	0.799	0.785	0.749	5.88
15) FREON 123	3.263	3.076	3.086	3.409	3.141	3.153	3.268	3.165	3.195	3.50
16) FREON 123A	1.885	1.999	1.902	2.161	1.963	2.005	2.079	2.035	2.004	4.52
17) TRICHLOROFLU	4.654	3.877	3.793	4.053	3.788	3.965	4.074	4.035	4.030	6.86
18) ISOPROPYL AL	2.056	1.925	1.689	1.914	1.637	1.780	2.018	2.175	1.899	9.82
19) ACETONE	0.661	0.533	0.488	0.575	0.497	0.537	0.600	0.610	0.563	10.66
20) PENTANE		1.260	1.548	1.392	1.332	1.273	1.384	1.364	1.365	7.02
21) TVHC as EQUI		6.375	6.334	6.537	8.409	8.374	9.153	9.085	7.752	16.60
22) ETHYL ETHER		0.529	0.453	0.584	0.534	0.548	0.609	0.610	0.552	10.01
23) IODOMETHANE	3.525	3.779	3.596	3.796	3.979	3.896	4.128	4.063	3.846	5.55
24) 1,1-DICHLORO	1.395	1.381	1.324	1.306	1.281	1.232	1.310	1.290	1.315	4.02
25) CARBON DISUL	3.982	4.074	3.805	3.795	3.971	3.689	3.930	3.886	3.892	3.18
26) ETHANOL			0.611	0.532	0.345	0.368	0.413	0.443	0.452	22.53
27) BROMOETHENE	1.231	1.351	1.358	1.485	1.436	1.383	1.450	1.395	1.386	5.62
28) METHYLENE CH			1.430	1.235	1.148	1.099	1.175	1.156	1.207	9.77
29) 3-CHLOROPROP		0.493	0.542	0.548	0.569	0.550	0.593	0.591	0.555	6.14
30) FREON 113	2.107	2.296	2.248	2.396	2.395	2.400	2.523	2.509	2.359	5.86
31) TRANS-1,2-DI	1.357	1.363	1.277	1.300	1.376	1.321	1.401	1.411	1.351	3.53
32) TERTIARY BUT	1.660	1.977	1.958	2.504	2.251	2.428	2.620	2.320	2.215	14.63
33) METHYL TERTI	3.106	3.184	2.740	3.314	3.033	3.310	3.702	3.934	3.290	11.49
34) TETRAHYDROFU		0.350	0.323	0.472	0.467	0.507	0.596	0.654	0.481	24.95
35) HEXANE	1.889	1.772	1.701	1.731	1.895	1.785	1.901	1.899	1.822	4.58
36) VINYL ACETAT		0.164	0.121	0.210	0.238	0.251	0.284	0.302	0.224	28.76
37) 1,1-DICHLORO	2.165	2.294	2.216	2.343	2.383	2.319	2.453	2.497	2.334	4.79
38) METHYL ETHYL			0.267	0.455	0.443	0.492	0.577	0.639	0.479	26.82
39) cis-1,2-DICH	1.418	1.267	1.245	1.246	1.335	1.309	1.407	1.447	1.334	6.09
40) DIISOPROPYL	2.605	2.941	2.537	3.268	3.036	3.195	3.621	3.773	3.122	14.06
41) ETHYL ACETAT			0.250	0.307	0.258	0.292	0.351	0.394	0.309	18.01
42) CHLOROFORM	2.813	2.524	2.642	2.699	2.740	2.799	2.932	3.021	2.771	5.70
43) 2,4-DIMETHYL	1.981	2.039	1.957	1.984	2.088	2.029	2.197	2.305	2.072	5.84
44) 1,1,1-TRICHL	2.942	2.652	2.785	2.916	2.905	3.063	3.184	3.327	2.972	7.25
45) CARBON TETRA	2.738	2.655	2.801	2.999	3.077	3.344	3.505	3.688	3.101	12.17
46) 1,2-DICHLORO	1.582	1.663	1.597	1.787	1.762	1.904	2.027	2.148	1.809	11.28

Initial Calibration Summary

Job Number: JA28237 **Sample:** V3W523-ICC523
Account: HLANJPR Mactec **Lab FileID:** 3W12851.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

47) I 1,4-DIFLUOROBENZENE	----------ISTD----------									
48) BENZENE	0.826	0.809	0.810	0.834	0.846	0.815	0.863	0.885	0.836	3.28
49) CYCLOHEXANE	0.445	0.402	0.412	0.395	0.420	0.398	0.426	0.435	0.417	4.34
50) 2,3-DIMETHYL	0.165	0.182	0.232	0.191	0.182	0.173	0.184	0.190	0.187	10.66
51) TRICHLOROETH	0.331	0.374	0.370	0.360	0.385	0.388	0.404	0.414	0.378	6.84
52) 1,2-DICHLORO	0.327	0.303	0.287	0.290	0.289	0.284	0.307	0.321	0.301	5.44
53) BROMODICHLOR	0.489	0.505	0.518	0.569	0.609	0.647	0.656	0.676	0.584	12.65
54) 2,2,4-TRIMET	1.285	1.167	1.231	1.216	1.249	1.190	1.250	1.264	1.231	3.18
55) 1,4-DIOXANE		0.152	0.148	0.155	0.159	0.163	0.176	0.201	0.165	11.27
56) HEPTANE	0.570	0.536	0.472	0.454	0.473	0.455	0.472	0.478	0.489	8.51
57) TVHC as EQUI		3.135	2.705	2.904	3.026	3.158	3.453	3.647	3.147	10.16
58) METHYL METHA			0.122	0.174	0.198	0.232	0.275	0.308	0.218	31.08
59) METHYL ISOBU			0.309	0.397	0.418	0.472	0.521	0.586	0.451	21.65
60) cis-1,3-DICH	0.374	0.375	0.365	0.372	0.430	0.457	0.489	0.517	0.423	14.16
61) TOLUENE	0.471	0.489	0.487	0.544	0.567	0.586	0.632	0.666	0.555	12.85
62) trans-1,3-DI	0.304	0.336	0.309	0.334	0.385	0.441	0.483	0.528	0.390	21.68
63) 1,1,2-TRICHL	0.181	0.217	0.231	0.264	0.265	0.275	0.296	0.313	0.255	17.01
64) I CHLOROBENZENE-D5	----------ISTD----------									
65) 2-HEXANONE		0.686	0.685	0.826	0.893	0.934	0.981	1.008	0.859	15.41
66) TETRACHLOROE	0.923	1.106	1.217	1.093	1.088	1.039	1.020	0.931	1.052	9.22
67) DIBROMOCHLOR	0.925	1.000	1.087	1.188	1.367	1.413	1.420	1.323	1.215	15.98
68) 1,2-DIBROMOE	0.787	0.880	0.878	0.916	1.042	1.066	1.098	1.029	0.962	11.57
69) OCTANE	1.323	1.337	1.467	1.477	1.402	1.263	1.239	1.106	1.327	9.38
70) 1,1,1,2-TETR	0.847	0.910	1.072	1.169	1.017	1.016	1.024	0.948	1.000	9.93
71) CHLOROBENZEN	1.486	1.652	1.618	1.665	1.668	1.628	1.659	1.521	1.612	4.33
72) ETHYLBENZENE	2.072	2.393	2.419	2.720	2.552	2.548	2.575	2.355	2.454	7.92
73) m,p-XYLENE	0.724	0.870	0.908	1.034	0.972	0.985	1.007	0.936	0.930	10.61
74) o-XYLENE	0.638	0.793	0.848	1.039	0.939	0.950	0.963	0.905	0.884	14.08
75) STYRENE			0.679	0.866	1.194	1.317	1.403	1.335	1.132	25.84
76) NONANE	1.016	1.062	1.369	1.603	1.300	1.222	1.177	1.018	1.221	16.51
77) BROMOFORM	0.775	0.874	0.840	0.993	1.166	1.313	1.350	1.276	1.073	21.51
78) 4-BROMOFLUOR	0.978	1.002	0.981	1.029	1.134	1.152	1.119	0.998	1.049	6.98
79) 1,1,2,2-TETR		0.811	1.233	1.447	1.093	1.121	1.132	1.075	1.130	16.84
80) 1,2,3-TRICHL	0.687	0.783	0.947	1.112	0.860	0.896	0.909	0.850	0.881	14.06
81) ISOPROPYLBEN	1.869	2.324	2.635	3.350	2.658	2.732	2.738	2.522	2.604	16.04
82) 2-CHLOROTOLU	0.406	0.448	0.592	0.700	0.622	0.644	0.658	0.618	0.586	17.68
83) n-PROPYLBENZ			0.570	0.735	0.663	0.705	0.733	0.699	0.684	9.00
84) 4-ETHYLTOLUE			1.840	2.461	2.151	2.335	2.410	2.275	2.245	10.06
85) 1,3,5-TRIMET		1.341	1.824	2.444	1.811	1.961	1.997	1.853	1.890	17.24
86) tert-BUTYLBE		0.325	0.499	0.674	0.466	0.507	0.530	0.505	0.501	20.43
87) 1,2,4-TRIMET		1.123	1.600	2.116	1.615	1.795	1.857	1.735	1.692	18.02
88) m-DICHLOROBE		0.834	1.054	1.167	1.015	1.152	1.209	1.155	1.084	11.92
89) BENZYL CHLOR		0.856	0.944	1.004	0.888	1.106	1.217	1.244	1.037	14.99
90) p-DICHLOROBE		0.833	1.118	1.080	0.898	1.062	1.128	1.095	1.031	11.30
91) sec-BUTYLBEN		0.360	0.552	0.730	0.533	0.585	0.611	0.590	0.566	19.56
92) p-ISOPROPYLT			0.497	0.687	0.490	0.565	0.612	0.600	0.575	12.99
93) o-DICHLOROBE		0.777	1.028	1.144	0.901	0.999	1.032	0.993	0.982	11.74
94) n-BUTYLBENZE		0.163	0.331	0.443	0.340	0.417	0.462	0.467	0.375	28.91
95) HEXACHLOROBU		0.241	0.518	0.605	0.279	0.375	0.381	0.286	0.384	34.96
96) 1,2,4-TRICHL		0.182	0.177	0.250	0.143	0.181	0.197	0.181	0.187	17.15
97) I CHLOROBENZENE-D5 (a)	----------ISTD----------									
98) NAPHTHALENE			0.434	0.710	0.354	0.410	0.529	0.702	0.523	29.12

(#) = Out of Range ### Number of calibration levels exceeded format ###

M3W523.M Tue Oct 06 12:20:35 2009 MS3W

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V3W524-CC523
Account: HLANJPR Mactec **Lab FileID:** 3W12867.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	117	0.00	7.76
2		FREON 115	2.937	2.812	4.3	114	0.00	4.07
3		FREON 152A	0.925	0.918	0.8	118	0.00	4.16
4		CHLORODIFLUOROMETHANE	0.449	0.414	7.8	111	0.00	4.19
5		DICHLORODIFLUOROMETHANE	4.031	3.899	3.3	112	0.00	4.26
6		PROPANE	0.499	0.542	-8.6	129	0.00	4.22
7		PROPYLENE	1.427	1.537	-7.7	130	0.00	4.21
8		FREON 114	4.232	4.092	3.3	115	0.00	4.44
9		CHLOROMETHANE	1.458	1.311	10.1	122	0.00	4.38
10		VINYL CHLORIDE	1.451	1.555	-7.2	126	0.00	4.53
11		1,3-BUTADIENE	1.036	1.136	-9.7	129	0.00	4.61
12		n-BUTANE	2.255	2.414	-7.1	135	0.00	4.64
13		BROMOMETHANE	1.437	1.446	-0.6	120	0.00	4.82
14		CHLOROETHANE	0.749	0.824	-10.0	129	0.00	4.92
15		FREON 123	3.195	3.344	-4.7	124	0.00	5.25
16		FREON 123A	2.004	2.001	0.1	117	0.00	5.29
17		TRICHLOROFLUOROMETHANE	4.030	3.896	3.3	115	0.00	5.46
18		ISOPROPYL ALCOHOL	1.899	2.052	-8.1	135	-0.02	5.51
19		ACETONE	0.563	0.600	-6.6	131	0.00	5.34
20		PENTANE	1.365	1.545	-13.2	142	0.00	5.67
21	H	TVHC as EQUIV PENTANE	7.752	9.818	-26.7	137	0.00	5.67
22		ETHYL ETHER	0.552	0.605	-9.6	129	0.00	5.69
23		IODOMETHANE	3.846	3.796	1.3	114	0.00	5.88
24		1,1-DICHLOROETHYLENE	1.315	1.284	2.4	122	0.00	5.93
25		CARBON DISULFIDE	3.892	3.961	-1.8	126	0.00	6.26
26		ETHANOL	0.452	0.430	4.9	137	-0.02	5.02
27		BROMOETHENE	1.386	1.424	-2.7	121	0.00	5.17
28		METHYLENE CHLORIDE	1.207	1.155	4.3	123	0.00	6.03
29		3-CHLOROPROPENE	0.555	0.589	-6.1	125	0.00	6.10
30		FREON 113	2.359	2.296	2.7	112	0.00	6.19
31		TRANS-1,2-DICHLOROETHYLEN	1.351	1.337	1.0	118	0.00	6.72
32		TERTIARY BUTYL ALCOHOL	2.215	2.605	-17.6	126	-0.02	5.93
33		METHYL TERTIARY BUTYL ETH	3.290	3.411	-3.7	121	0.00	6.89
34		TETRAHYDROFURAN	0.481	0.552	-14.8	127	-0.01	8.18
35		HEXANE	1.822	2.022	-11.0	133	0.00	7.67
36		VINYL ACETATE	0.224	0.260	-16.1	121	0.00	7.00
37		1,1-DICHLOROETHANE	2.334	2.498	-7.0	126	0.00	6.89
38		METHYL ETHYL KETONE	0.479	0.521	-8.8	124	-0.01	7.20
39		cis-1,2-DICHLOROETHYLENE	1.334	1.327	0.5	119	0.00	7.62
40		DIISOPROPYL ETHER	3.122	3.743	-19.9	137	-0.01	7.67
41		ETHYL ACETATE	0.309	0.322	-4.2	129	-0.01	7.75
42		CHLOROFORM	2.771	2.795	-0.9	117	-0.01	7.84

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V3W524-CC523
Account: HLANJPR Mactec **Lab FileID:** 3W12867.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		2,4-DIMETHYLPENTANE	2.072	2.287	-10.4	132	0.00	8.43
44		1,1,1-TRICHLOROETHANE	2.972	2.952	0.7	113	0.00	8.71
45		CARBON TETRACHLORIDE	3.101	3.144	-1.4	110	0.00	9.27
46		1,2-DICHLOROETHANE	1.809	1.950	-7.8	120	0.00	8.49
47	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	115	0.00	9.46
48		BENZENE	0.836	0.890	-6.5	125	0.00	9.14
49		CYCLOHEXANE	0.417	0.460	-10.3	132	0.00	9.32
50		2,3-DIMETHYLPENTANE	0.187	0.192	-2.7	127	0.00	9.50
51		TRICHLOROETHYLENE	0.378	0.396	-4.8	117	0.00	10.10
52		1,2-DICHLOROPROPANE	0.301	0.317	-5.3	128	-0.01	9.86
53		BROMODICHLOROMETHANE	0.584	0.653	-11.8	116	0.00	10.08
54		2,2,4-TRIMETHYLPENTANE	1.231	1.353	-9.9	131	-0.01	10.02
55		1,4-DIOXANE	0.165	0.170	-3.0	120	-0.01	10.13
56		HEPTANE	0.489	0.541	-10.6	136	-0.01	10.27
57	H	TVHC as EQUIV HEPTANE	3.147	3.509	-11.5	127	0.00	10.28
58		METHYL METHACRYLATE	0.218	0.251	-15.1	124	0.00	10.29
59		METHYL ISOBUTYL KETONE	0.451	0.537	-19.1	130	-0.01	10.91
60		cis-1,3-DICHLOROPROPENE	0.423	0.477	-12.8	120	0.00	10.94
61		TOLUENE	0.555	0.595	-7.2	116	0.00	11.88
62		trans-1,3-DICHLOROPROPENE	0.390	0.445	-14.1	116	0.00	11.45
63		1,1,2-TRICHLOROETHANE	0.255	0.285	-11.8	119	-0.01	11.62
64	I	CHLOROBENZENE-D5	1.000	1.000	0.0	114	-0.01	13.71
65		2-HEXANONE	0.859	1.063	-23.7	130	-0.01	12.11
66		TETRACHLOROETHYLENE	1.052	0.962	8.6	106	0.00	13.03
67		DIBROMOCHLOROMETHANE	1.215	1.355	-11.5	109	-0.01	12.33
68		1,2-DIBROMOETHANE	0.962	1.040	-8.1	111	0.00	12.55
69		OCTANE	1.327	1.482	-11.7	134	0.00	12.78
70		1,1,1,2-TETRACHLOROETHANE	1.000	0.970	3.0	109	0.00	13.73
71		CHLOROBENZENE	1.612	1.603	0.6	112	0.00	13.76
72		ETHYLBENZENE	2.454	2.531	-3.1	113	0.00	14.12
73		m,p-XYLENE	0.930	0.955	-2.7	111	0.00	14.30
74		o-XYLENE	0.884	0.910	-2.9	109	-0.01	14.81
75		STYRENE	1.132	1.282	-13.3	111	0.00	14.72
76		NONANE	1.221	1.370	-12.2	128	-0.01	14.97
77		BROMOFORM	1.073	1.166	-8.7	101	0.00	14.43
78	S	4-BROMOFLUOROBENZENE	1.049	1.091	-4.0	108	-0.01	15.34
79		1,1,2,2-TETRACHLOROETHANE	1.130	1.116	1.2	113	-0.01	14.84
80		1,2,3-TRICHLOROPROPANE	0.881	0.903	-2.5	115	-0.01	14.97
81		ISOPROPYLBENZENE	2.604	2.592	0.5	108	0.00	15.46
82		2-CHLOROTOLUENE	0.586	0.601	-2.6	106	0.00	16.04
83		n-PROPYLBENZENE	0.684	0.656	4.1	106	-0.01	16.05
84		4-ETHYLTOLUENE	2.245	2.193	2.3	107	0.00	16.22
85		1,3,5-TRIMETHYLBENZENE	1.890	1.849	2.2	108	-0.01	16.31
86		tert-BUTYLBENZENE	0.501	0.467	6.8	105	0.00	16.79
87		1,2,4-TRIMETHYLBENZENE	1.692	1.673	1.1	106	-0.01	16.80
88		m-DICHLOROBENZENE	1.084	1.014	6.5	100	0.00	17.01
89		BENZYL CHLORIDE	1.037	1.036	0.1	107	0.00	17.00
90		p-DICHLOROBENZENE	1.031	0.930	9.8	100	-0.01	17.08
91		sec-BUTYLBENZENE	0.566	0.531	6.2	104	0.00	17.11
92		p-ISOPROPYLTOLUENE	0.575	0.514	10.6	104	-0.01	17.29
93		o-DICHLOROBENZENE	0.982	0.879	10.5	100	0.00	17.50
94		n-BUTYLBENZENE	0.375	0.373	0.5	102	0.00	17.80
95		HEXACHLOROBUTADIENE	0.384	0.311	19.0	95	0.00	20.03
96		1,2,4-TRICHLOROBENZENE	0.187	0.149	20.3	94	0.00	19.49
97	I	CHLOROBENZENE-D5 (a)	1.000	1.000	0.0	114	-0.01	13.71
98		NAPHTHALENE		----------NA----------				

Continuing Calibration Summary

Job Number: JA28237 **Sample:** V3W524-CC523
Account: HLANJPR Mactec **Lab FileID:** 3W12867.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

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   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    3W12851.D  M3W523.M         Tue Oct 06 13:02:49 2009   MS3W
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Initial Calibration Verification

Job Number: JA28237 **Sample:** V3W524-ICV523
Account: HLANJPR Mactec **Lab FileID:** 3W12868.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)	R.T.
1	I	BROMOCHLOROMETHANE	1.000	1.000	0.0	125	0.00	7.76
2		FREON 115	2.937	2.592	11.7	112	0.00	4.08
3		FREON 152A	0.925	0.889	3.9	122	0.00	4.16
4		CHLORODIFLUOROMETHANE	0.449	0.387	13.8	111	0.00	4.19
5		DICHLORODIFLUOROMETHANE	4.031	3.523	12.6	108	0.00	4.26
6		PROPANE	0.499	0.489	2.0	124	0.00	4.23
7		PROPYLENE	1.427	1.434	-0.5	129	0.00	4.21
8		FREON 114	4.232	3.865	8.7	116	0.00	4.44
9		CHLOROMETHANE	1.458	1.269	13.0	126	0.00	4.38
10		VINYL CHLORIDE	1.451	1.476	-1.7	127	0.00	4.53
11		1,3-BUTADIENE	1.036	1.091	-5.3	132	0.00	4.62
12		n-BUTANE	2.255	2.169	3.8	130	0.00	4.64
13		BROMOMETHANE	1.437	1.403	2.4	124	0.00	4.82
14		CHLOROETHANE	0.749	0.788	-5.2	131	0.00	4.92
15		FREON 123	3.195	3.258	-2.0	129	0.00	5.26
16		FREON 123A	2.004	1.940	3.2	121	0.00	5.29
17		TRICHLOROFLUOROMETHANE	4.030	3.663	9.1	115	0.00	5.46
18		ISOPROPYL ALCOHOL	1.899	2.017	-6.2	141	-0.01	5.52
19		ACETONE	0.563	0.576	-2.3	134	0.00	5.34
20		PENTANE	1.365	1.492	-9.3	146	0.00	5.67
21	H	TVHC as EQUIV PENTANE	7.752	9.313	-20.1	139	0.00	5.67
22		ETHYL ETHER	0.552	0.590	-6.9	135	0.00	5.70
23		IODOMETHANE	3.846	3.731	3.0	120	0.00	5.88
24		1,1-DICHLOROETHYLENE	1.315	1.250	4.9	127	0.00	5.93
25		CARBON DISULFIDE	3.892	3.802	2.3	129	0.00	6.26
26		ETHANOL	0.452	0.434	4.0	147	-0.01	5.03
27		BROMOETHENE	1.386	1.371	1.1	124	0.00	5.18
28		METHYLENE CHLORIDE	1.207	1.119	7.3	127	0.00	6.03
29		3-CHLOROPROPENE	0.555	0.580	-4.5	132	0.00	6.10
30		FREON 113	2.359	2.218	6.0	115	0.00	6.19
31		TRANS-1,2-DICHLOROETHYLEN	1.351	1.295	4.1	122	0.00	6.72
32		TERTIARY BUTYL ALCOHOL	2.215	2.568	-15.9	132	-0.01	5.94
33		METHYL TERTIARY BUTYL ETH	3.290	3.273	0.5	123	0.00	6.89
34		TETRAHYDROFURAN	0.481	0.526	-9.4	129	-0.01	8.18
35		HEXANE	1.822	1.957	-7.4	137	0.00	7.67
36		VINYL ACETATE	0.224	0.250	-11.6	124	0.00	7.00
37		1,1-DICHLOROETHANE	2.334	2.425	-3.9	131	0.00	6.89
38		METHYL ETHYL KETONE	0.479	0.510	-6.5	129	-0.01	7.20
39		cis-1,2-DICHLOROETHYLENE	1.334	1.286	3.6	123	0.00	7.63
40		DIISOPROPYL ETHER	3.122	3.578	-14.6	140	0.00	7.67
41		ETHYL ACETATE	0.309	0.310	-0.3	132	0.00	7.75
42		CHLOROFORM	2.771	2.696	2.7	120	0.00	7.85

Initial Calibration Verification

Job Number: JA28237 **Sample:** V3W524-ICV523
Account: HLANJPR Mactec **Lab FileID:** 3W12868.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

43		2,4-DIMETHYLPENTANE	2.072	2.233	-7.8	137	0.00	8.43
44		1,1,1-TRICHLOROETHANE	2.972	2.826	4.9	115	0.00	8.71
45		CARBON TETRACHLORIDE	3.101	3.003	3.2	112	0.00	9.27
46		1,2-DICHLOROETHANE	1.809	1.863	-3.0	122	0.00	8.49
47	I	1,4-DIFLUOROBENZENE	1.000	1.000	0.0	119	0.00	9.46
48		BENZENE	0.836	0.890	-6.5	130	0.00	9.14
49		CYCLOHEXANE	0.417	0.452	-8.4	135	0.00	9.32
50		2,3-DIMETHYLPENTANE	0.187	0.192	-2.7	132	0.00	9.50
51		TRICHLOROETHYLENE	0.378	0.394	-4.2	121	0.00	10.10
52		1,2-DICHLOROPROPANE	0.301	0.317	-5.3	133	-0.01	9.86
53		BROMODICHLOROMETHANE	0.584	0.649	-11.1	119	0.00	10.08
54		2,2,4-TRIMETHYLPENTANE	1.231	1.359	-10.4	136	0.00	10.02
55		1,4-DIOXANE	0.165	0.165	0.0	120	0.00	10.14
56		HEPTANE	0.489	0.538	-10.0	141	0.00	10.28
57	H	TVHC as EQUIV HEPTANE	3.147	3.502	-11.3	132	0.00	10.28
58		METHYL METHACRYLATE	0.218	0.249	-14.2	128	0.00	10.29
59		METHYL ISOBUTYL KETONE	0.451	0.545	-20.8	137	0.00	10.92
60		cis-1,3-DICHLOROPROPENE	0.423	0.475	-12.3	124	0.00	10.94
61		TOLUENE	0.555	0.601	-8.3	122	0.00	11.88
62		trans-1,3-DICHLOROPROPENE	0.390	0.445	-14.1	120	0.00	11.45
63		1,1,2-TRICHLOROETHANE	0.255	0.286	-12.2	124	-0.01	11.62
64	I	CHLOROBENZENE-D5	1.000	1.000	0.0	118	-0.01	13.71
65		2-HEXANONE	0.859	1.063	-23.7	135	-0.01	12.11
66		TETRACHLOROETHYLENE	1.052	0.980	6.8	111	0.00	13.03
67		DIBROMOCHLOROMETHANE	1.215	1.370	-12.8	115	-0.01	12.33
68		1,2-DIBROMOETHANE	0.962	1.052	-9.4	117	0.00	12.55
69		OCTANE	1.327	1.482	-11.7	139	0.00	12.78
70		1,1,1,2-TETRACHLOROETHANE	1.000	0.986	1.4	115	0.00	13.73
71		CHLOROBENZENE	1.612	1.636	-1.5	119	0.00	13.76
72		ETHYLBENZENE	2.454	2.558	-4.2	119	0.00	14.12
73		m,p-XYLENE	0.930	0.981	-5.5	118	0.00	14.30
74		o-XYLENE	0.884	0.946	-7.0	118	-0.01	14.82
75		STYRENE	1.132	1.299	-14.8	117	0.00	14.72
76		NONANE	1.221	1.391	-13.9	135	-0.01	14.97
77		BROMOFORM	1.073	1.226	-14.3	110	0.00	14.43
78	S	4-BROMOFLUOROBENZENE	1.049	1.086	-3.5	111	-0.01	15.34
79		1,1,2,2-TETRACHLOROETHANE	1.130	1.202	-6.4	127	-0.01	14.84
80		1,2,3-TRICHLOROPROPANE	0.881	0.949	-7.7	125	-0.01	14.97
81		ISOPROPYLBENZENE	2.604	2.664	-2.3	115	0.00	15.46
82		2-CHLOROTOLUENE	0.586	0.629	-7.3	115	0.00	16.04
83		n-PROPYLBENZENE	0.684	0.689	-0.7	115	-0.01	16.05
84		4-ETHYLTOLUENE	2.245	2.281	-1.6	115	0.00	16.22
85		1,3,5-TRIMETHYLBENZENE	1.890	1.910	-1.1	115	-0.01	16.31
86		tert-BUTYLBENZENE	0.501	0.487	2.8	113	0.00	16.79
87		1,2,4-TRIMETHYLBENZENE	1.692	1.756	-3.8	116	-0.01	16.80
88		m-DICHLOROBENZENE	1.084	1.112	-2.6	114	0.00	17.01
89		BENZYL CHLORIDE	1.037	1.154	-11.3	123	0.00	17.00
90		p-DICHLOROBENZENE	1.031	1.028	0.3	114	-0.01	17.08
91		sec-BUTYLBENZENE	0.566	0.560	1.1	113	0.00	17.11
92		p-ISOPROPYLTOLUENE	0.575	0.551	4.2	115	-0.01	17.29
93		o-DICHLOROBENZENE	0.982	1.001	-1.9	118	0.00	17.50
94		n-BUTYLBENZENE	0.375	0.409	-9.1	116	0.00	17.80
95		HEXACHLOROBUTADIENE	0.384	0.445	-15.9	140	0.00	20.03
96		1,2,4-TRICHLOROBENZENE	0.187	0.238	-27.3	155	0.00	19.49
97	I	CHLOROBENZENE-D5 (a)	1.000	1.000	0.0	118	-0.01	13.71
98		NAPHTHALENE		----------NA----------				

Initial Calibration Verification

Job Number: JA28237 **Sample:** V3W524-ICV523
Account: HLANJPR Mactec **Lab FileID:** 3W12868.D
Project: CPS/Madison Superfund Site, Waterworks Road, Old Bridge, NJ

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-----------------------------------------------------------------------------

   (#) = Out of Range                SPCC's out = 0  CCC's out = 0
    3W12851.D  M3W523.M         Tue Oct 06 12:20:34 2009   MS3W
```

GC/MS Volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 10/08/09 11:15

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12871.D Vial: 6
Acq On : 5 Oct 2009 1:04 pm Operator: YOUMINH
Sample : JA28237-1 Inst : MS3W
Misc : MS86154,V3W524,100,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:58 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

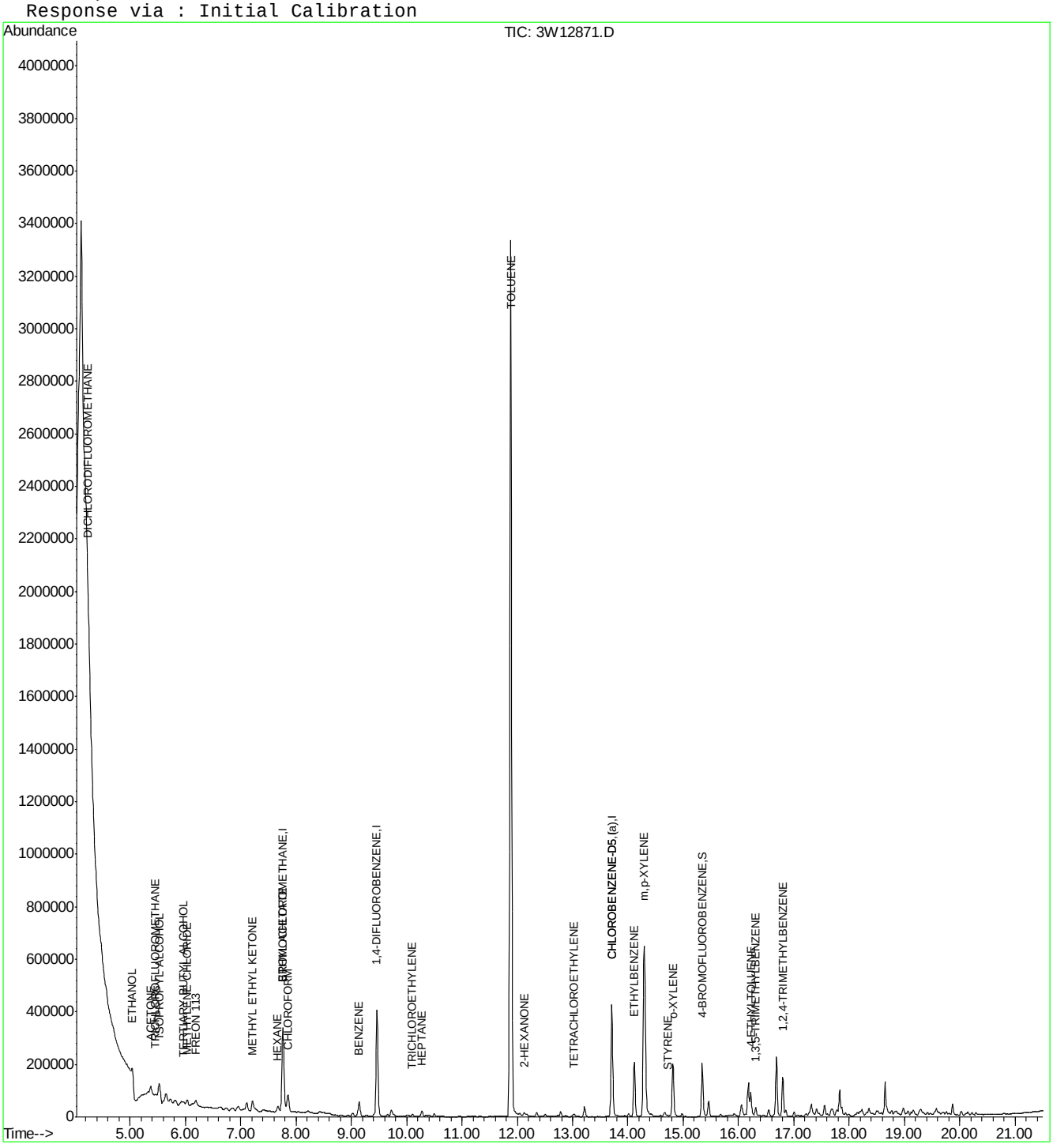
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	89828	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	394616	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	164449	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	164449	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	84429	4.89	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 97.80%			
Target Compounds						Qvalue
5) DICHLORODIFLUOROMETHANE	4.24	85	3945	0.11	PPBV	98
17) TRICHLOROFLUOROMETHANE	5.46	101	7045	0.19	PPBV	97
18) ISOPROPYL ALCOHOL	5.53	45	73393	4.30	PPBV	100
19) ACETONE	5.37	58	22862	4.52	PPBV #	14
26) ETHANOL	5.04	45	25339	6.24	PPBV	96
28) METHYLENE CHLORIDE	6.02	84	3523	0.32	PPBV	92
30) FREON 113	6.19	151	9232	0.44	PPBV	91
32) TERTIARY BUTYL ALCOHOL	5.96	59	4843	0.24	PPBV	86
35) HEXANE	7.67	57	11552	0.71	PPBV	95
38) METHYL ETHYL KETONE	7.21	72	12358	2.87	PPBV #	72
41) ETHYL ACETATE	7.76	61	15531	5.60	PPBV	97
42) CHLOROFORM	7.86	83	54750	2.20	PPBV	98
48) BENZENE	9.15	78	58036	1.76	PPBV	98
51) TRICHLOROETHYLENE	10.11	95	3489	0.23	PPBV	90
56) HEPTANE	10.28	43	11442	0.59	PPBV	89
61) TOLUENE	11.88	92	1910617	87.17	PPBV	94
65) 2-HEXANONE	12.13	43	14887	1.05	PPBV	81
66) TETRACHLOROETHYLENE	13.03	164	2993	0.17	PPBV	98
72) ETHYLBENZENE	14.12	91	186438m	4.62	PPBV	
73) m,p-XYLENE	14.29	106	318317	20.82	PPBV	98
74) o-XYLENE	14.82	106	66683	4.59	PPBV	95
75) STYRENE	14.72	104	2367	0.13	PPBV	97
84) 4-ETHYLTOLUENE	16.22	105	58774	1.59	PPBV	99
85) 1,3,5-TRIMETHYLBENZENE	16.31	105	24278	0.78	PPBV	98
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	102936	3.70	PPBV #	28

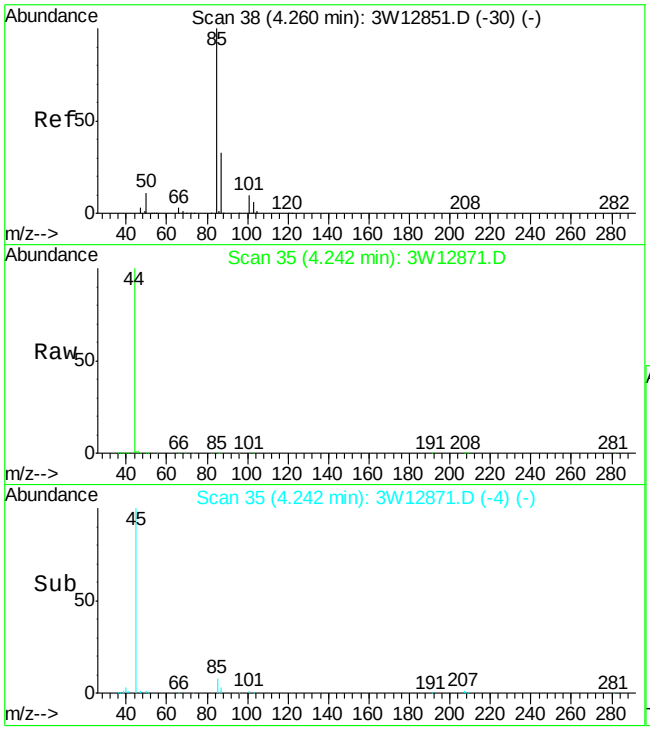
(#) = qualifier out of range (m) = manual integration (+) = signals summed
3W12871.D M3W523.M Tue Oct 06 13:01:34 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12871.D Vial: 6
Acq On : 5 Oct 2009 1:04 pm Operator: YOUMINH
Sample : JA28237-1 Inst : MS3W
Misc : MS86154,V3W524,100,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:33 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

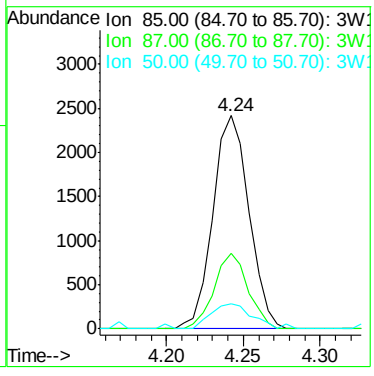


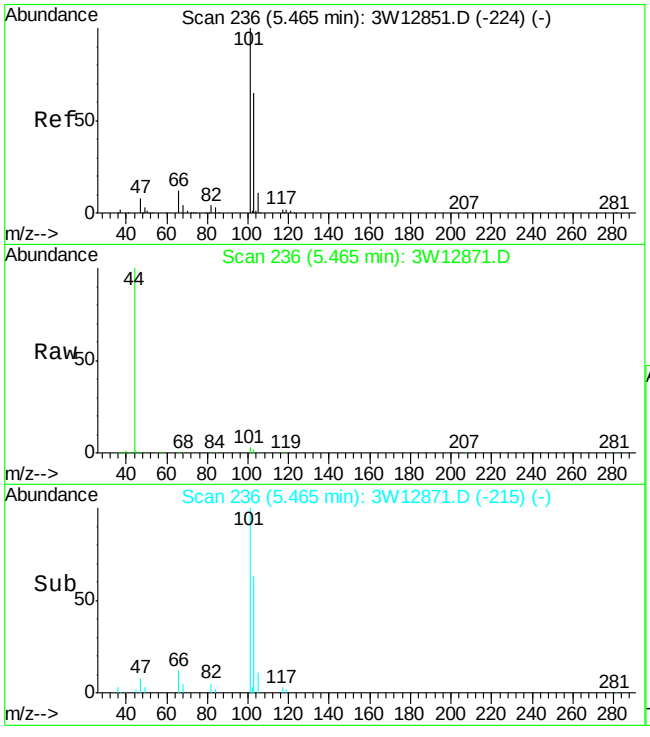


#5
DICHLORODIFLUOROMETHANE
Concen: 0.11 PPBV
RT: 4.24 min Scan# 35
Delta R.T. -0.02 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 85 Resp: 3945

Ion	Ratio	Lower	Upper
85	100		
87	33.2	12.6	52.6
50	13.4	0.0	31.8

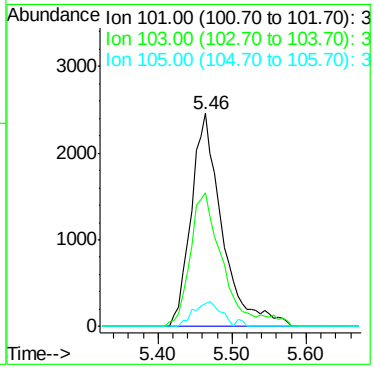


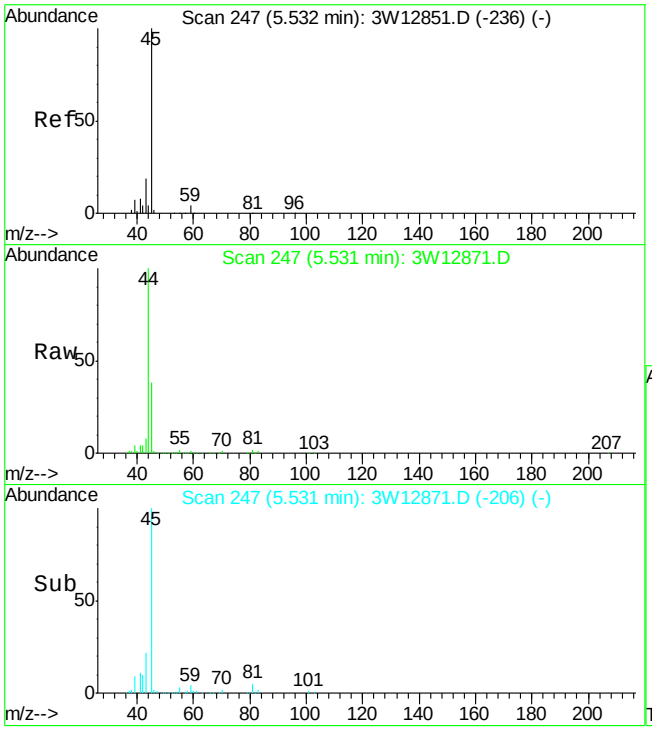


#17
TRICHLOROFLUOROMETHANE
Concen: 0.19 PPBV
RT: 5.46 min Scan# 236
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:101 Resp: 7045

Ion	Ratio	Lower	Upper
101	100		
103	62.7	45.3	85.3
105	10.1	0.0	30.7

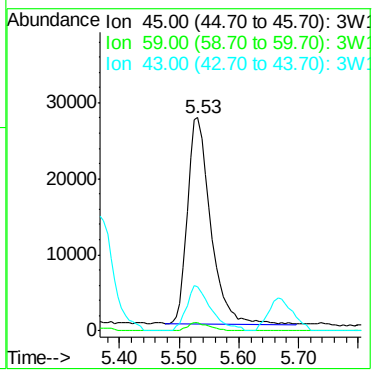


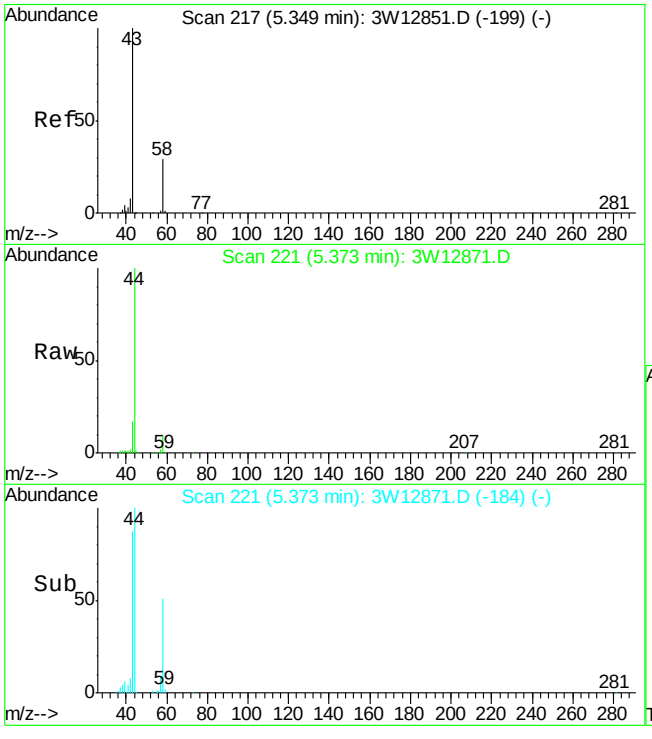


#18
ISOPROPYL ALCOHOL
Concen: 4.30 PPBV
RT: 5.53 min Scan# 247
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 45 Resp: 73393

Ion	Ratio	Lower	Upper
45	100		
59	3.8	0.0	23.9
43	20.7	0.6	40.6

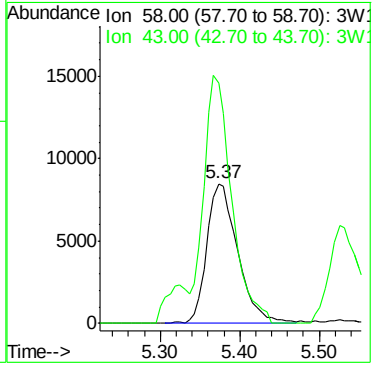


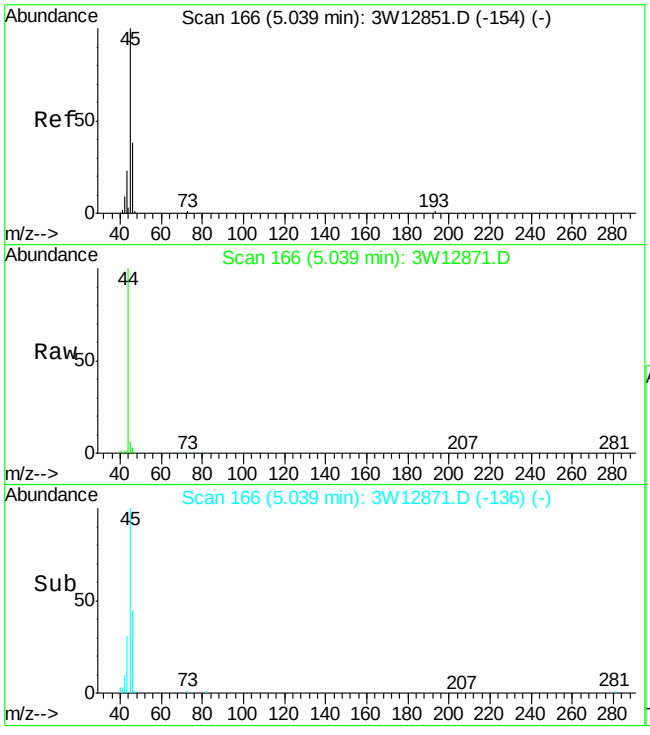


#19
ACETONE
Concen: 4.52 PPBV
RT: 5.37 min Scan# 221
Delta R.T. 0.02 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 58 Resp: 22862

Ion	Ratio	Lower	Upper
58	100		
43	160.0	323.9	363.9#

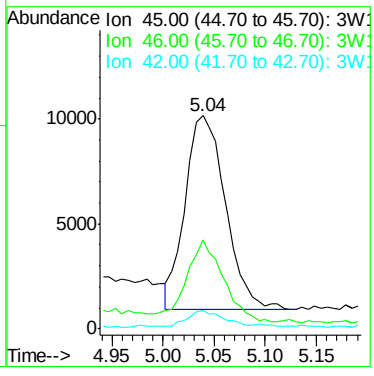


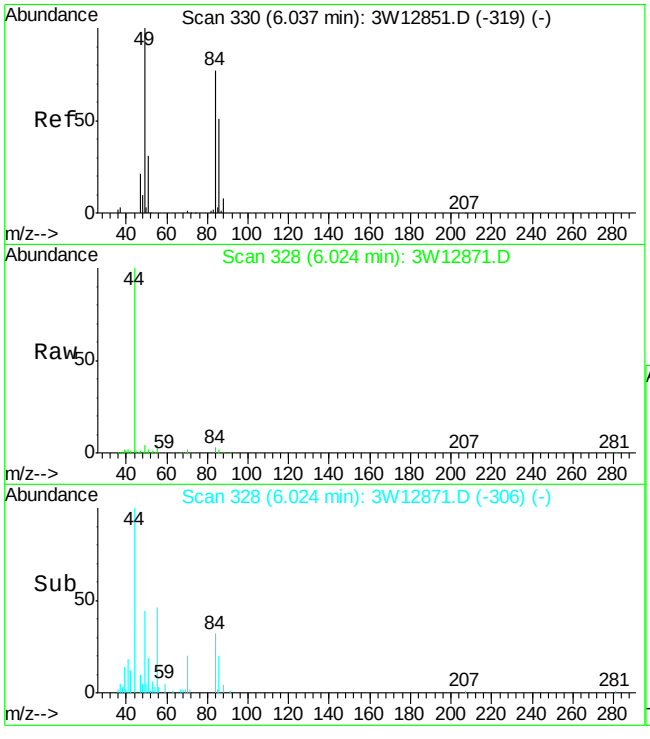


#26
ETHANOL
Concen: 6.24 PPBV
RT: 5.04 min Scan# 166
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 45 Resp: 25339

Ion	Ratio	Lower	Upper
45	100		
46	39.7	17.9	57.9
42	7.3	0.0	29.8

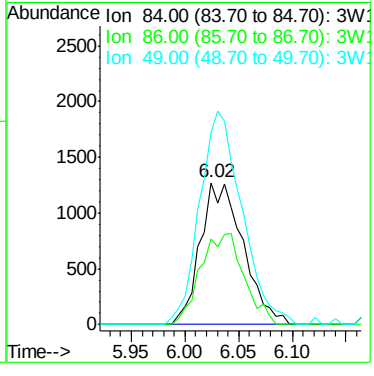


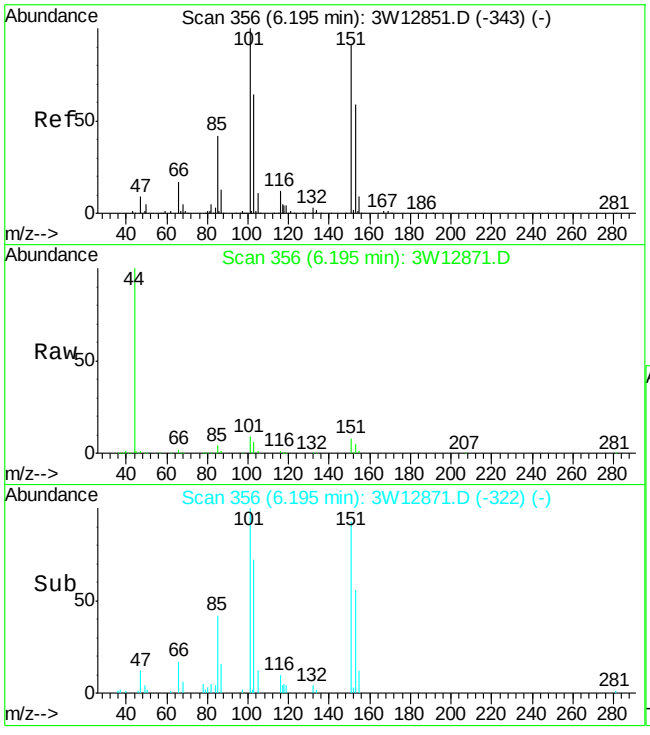


#28
METHYLENE CHLORIDE
Concen: 0.32 PPBV
RT: 6.02 min Scan# 328
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 84 Resp: 3523

Ion	Ratio	Lower	Upper
84	100		
86	65.1	45.5	85.5
49	148.9	0.0	335.0

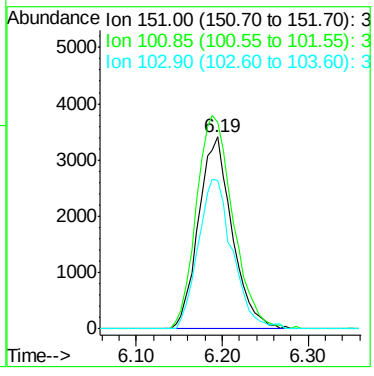


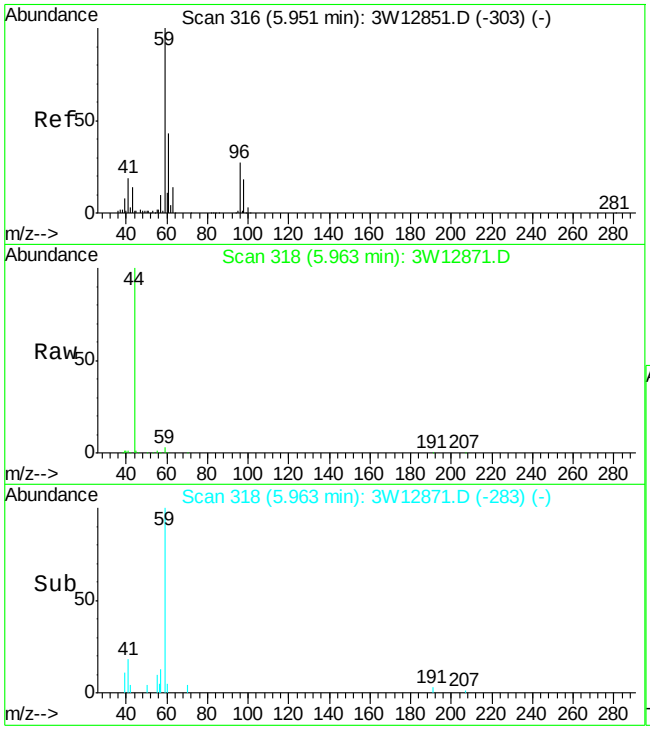


#30
FREON 113
Concen: 0.44 PPBV
RT: 6.19 min Scan# 356
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:151 Resp: 9232

Ion	Ratio	Lower	Upper
151	100		
101	121.4	92.0	132.0
103	79.8	52.3	92.3

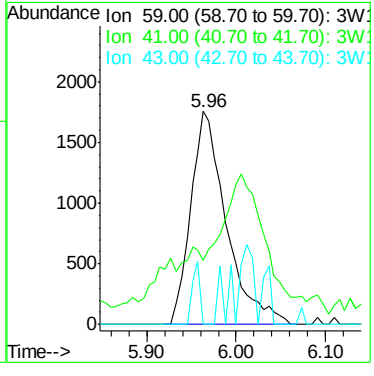


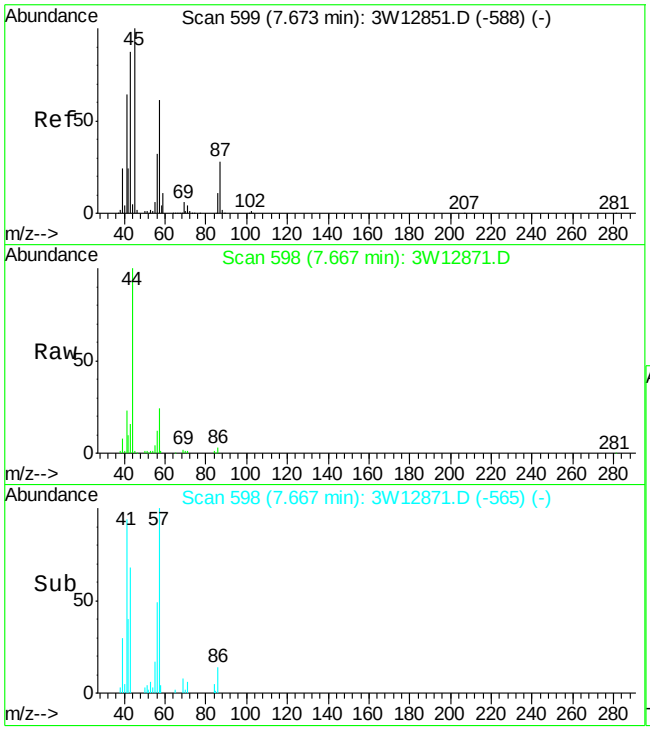


#32
TERTIARY BUTYL ALCOHOL
Concen: 0.24 PPBV
RT: 5.96 min Scan# 318
Delta R.T. 0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 59 Resp: 4843

Ion	Ratio	Lower	Upper
59	100		
41	14.9	0.0	39.0
43	6.6	0.0	35.0

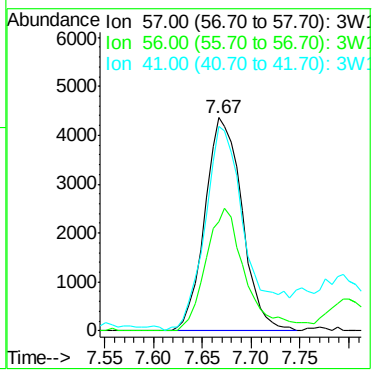


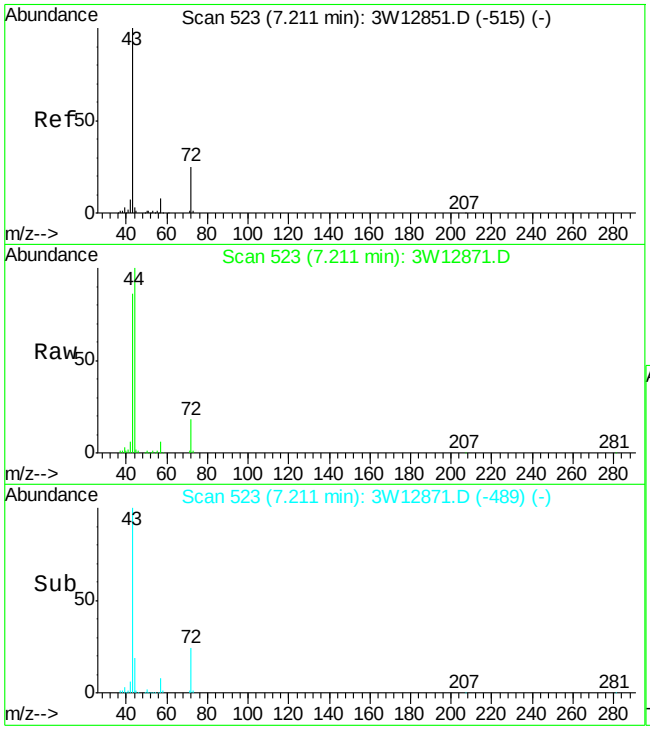


#35
HEXANE
Concen: 0.71 PPBV
RT: 7.67 min Scan# 598
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 57 Resp: 11552

Ion	Ratio	Lower	Upper
57	100		
56	60.9	32.2	72.2
41	107.9	89.9	129.9

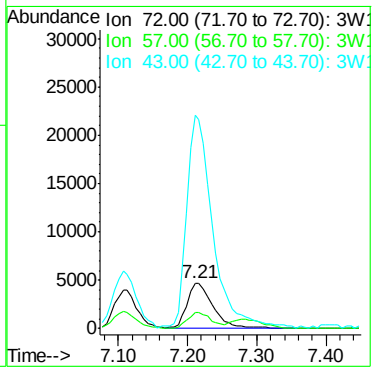


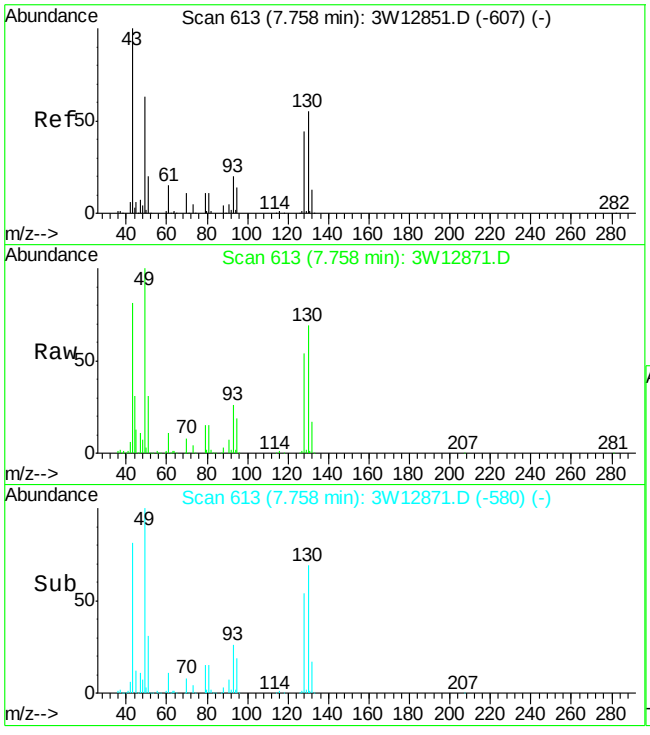


#38
METHYL ETHYL KETONE
Concen: 2.87 PPBV
RT: 7.21 min Scan# 523
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 72 Resp: 12358

Ion	Ratio	Lower	Upper
72	100		
57	35.3	12.0	52.0
43	468.9	378.5	418.5#

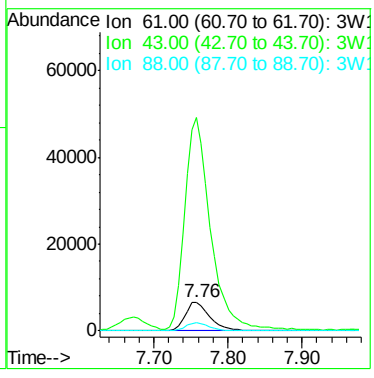


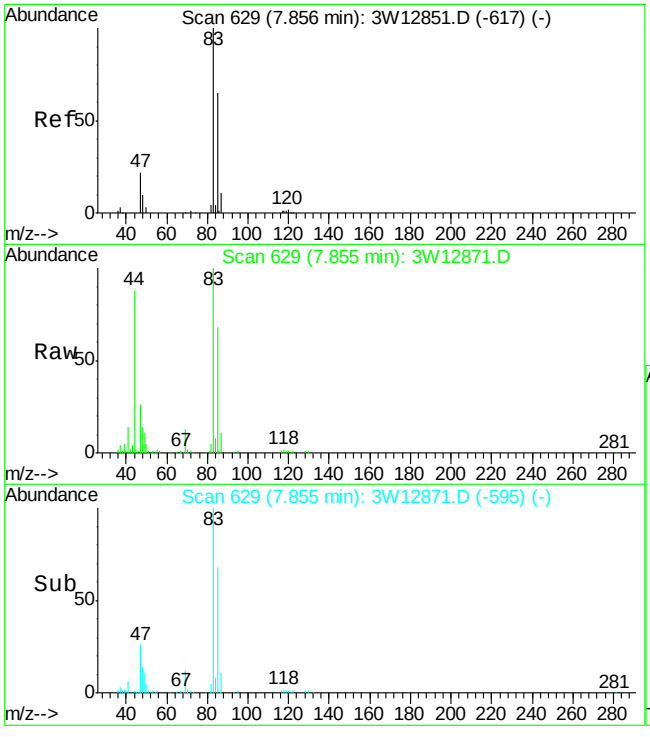


#41
ETHYL ACETATE
Concen: 5.60 PPBV
RT: 7.76 min Scan# 613
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 61 Resp: 15531

Ion	Ratio	Lower	Upper
61	100		
43	755.2	743.7	783.7
88	27.3	12.2	52.2

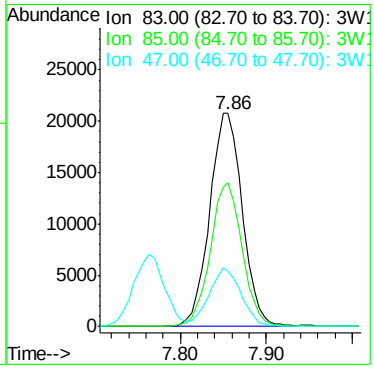


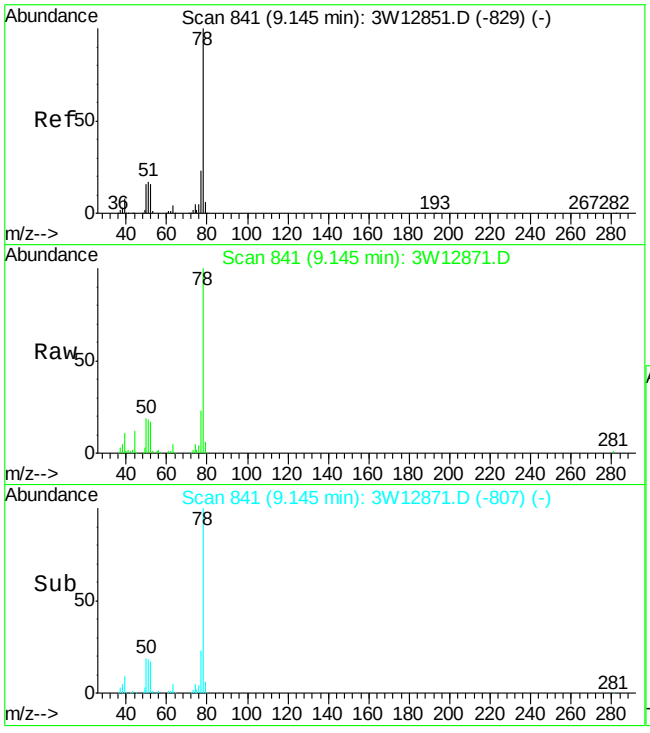


#42
CHLOROFORM
Concen: 2.20 PPBV
RT: 7.86 min Scan# 629
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 83 Resp: 54750

Ion	Ratio	Lower	Upper
83	100		
85	65.8	45.0	85.0
47	27.1	4.7	44.7

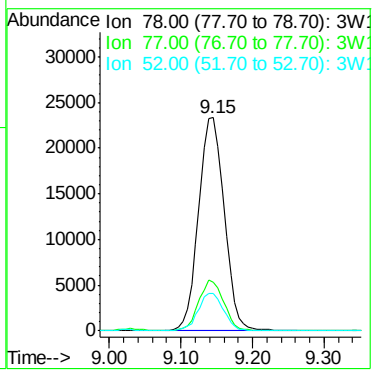


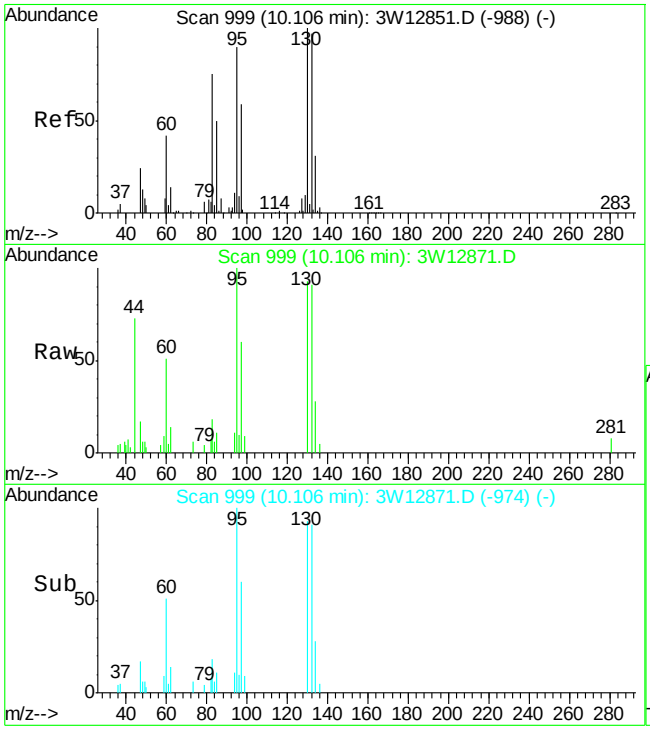


#48
BENZENE
Concen: 1.76 PPBV
RT: 9.15 min Scan# 841
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 78 Resp: 58036

Ion	Ratio	Lower	Upper
78	100		
77	22.9	3.2	43.2
52	17.4	0.0	35.8

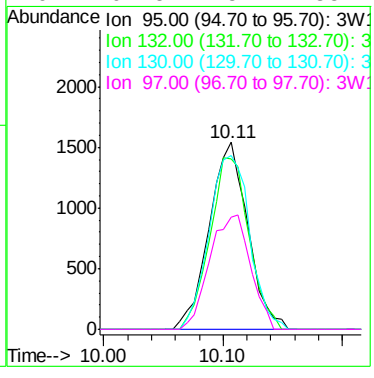


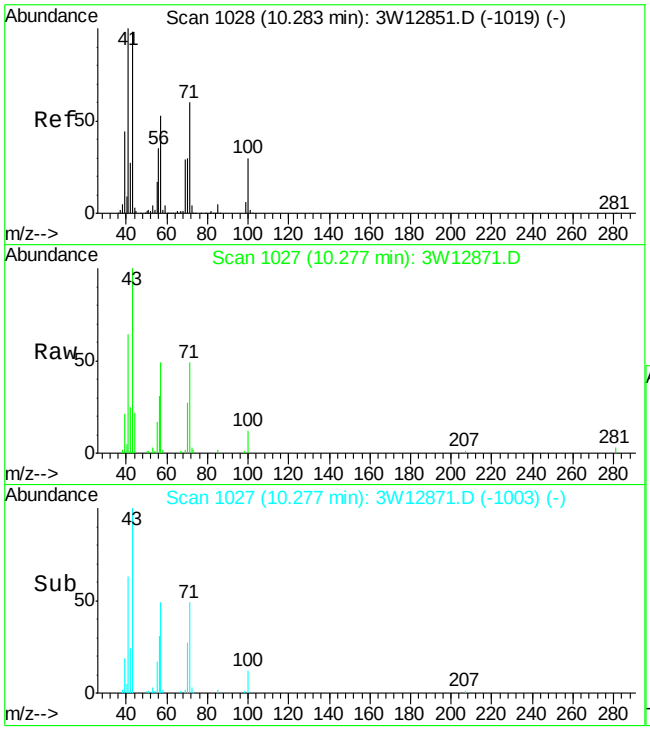


#51
TRICHLOROETHYLENE
Concen: 0.23 PPBV
RT: 10.11 min Scan# 999
Delta R.T. -0.00 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 95 Resp: 3489

Ion	Ratio	Lower	Upper
95	100		
132	93.1	86.9	126.9
130	98.0	89.9	129.9
97	64.5	45.4	85.4

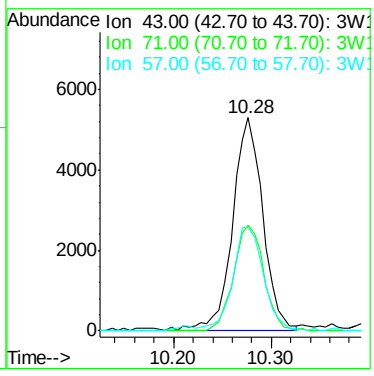


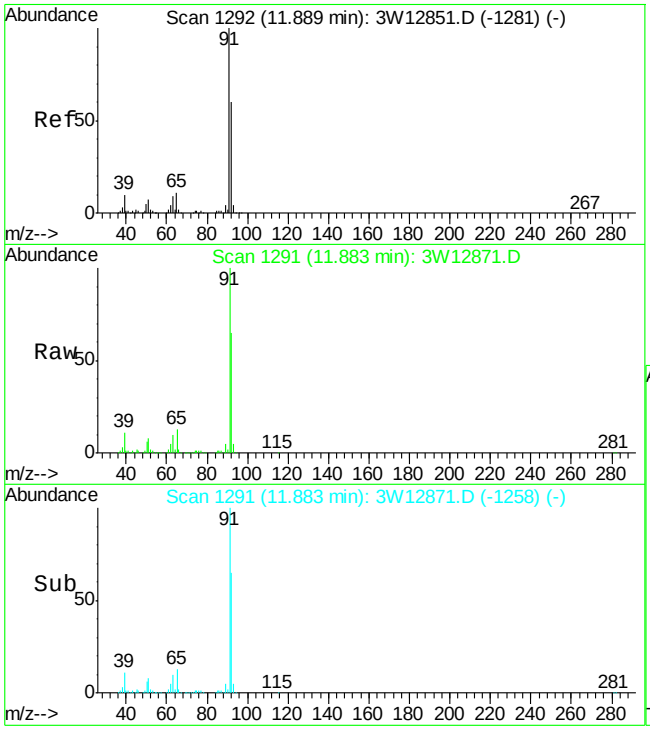


#56
HEPTANE
Concen: 0.59 PPBV
RT: 10.28 min Scan# 1027
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 43 Resp: 11442

Ion	Ratio	Lower	Upper
43	100		
71	49.4	40.7	80.7
57	49.9	34.5	74.5

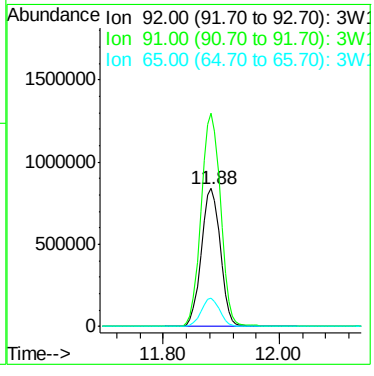


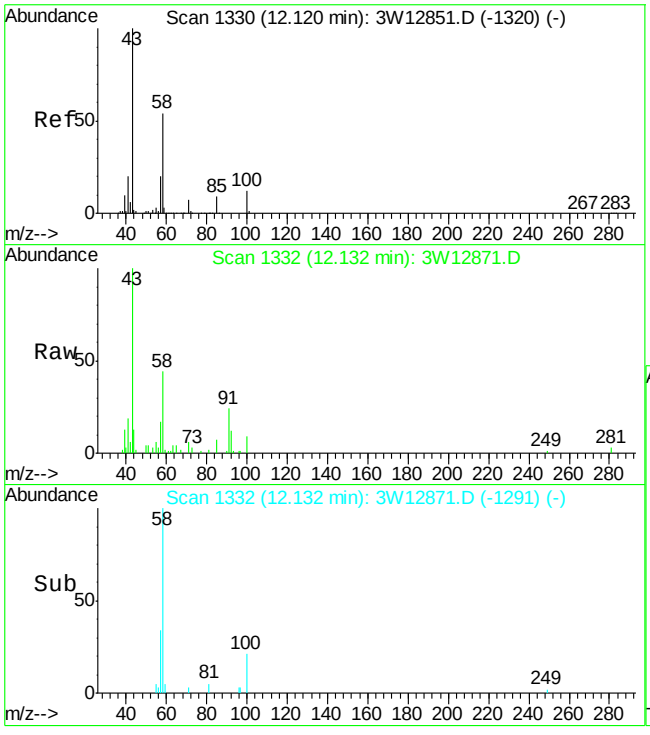


#61
TOLUENE
Concen: 87.17 PPBV
RT: 11.88 min Scan# 1291
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 92 Resp: 1910617

Ion	Ratio	Lower	Upper
92	100		
91	158.3	147.6	187.6
65	20.2	0.0	39.0

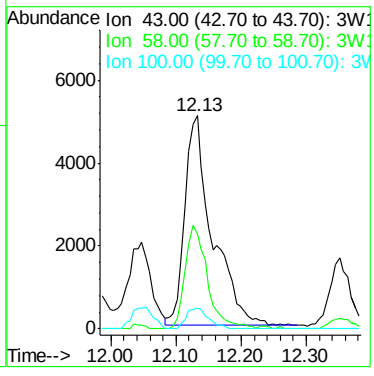


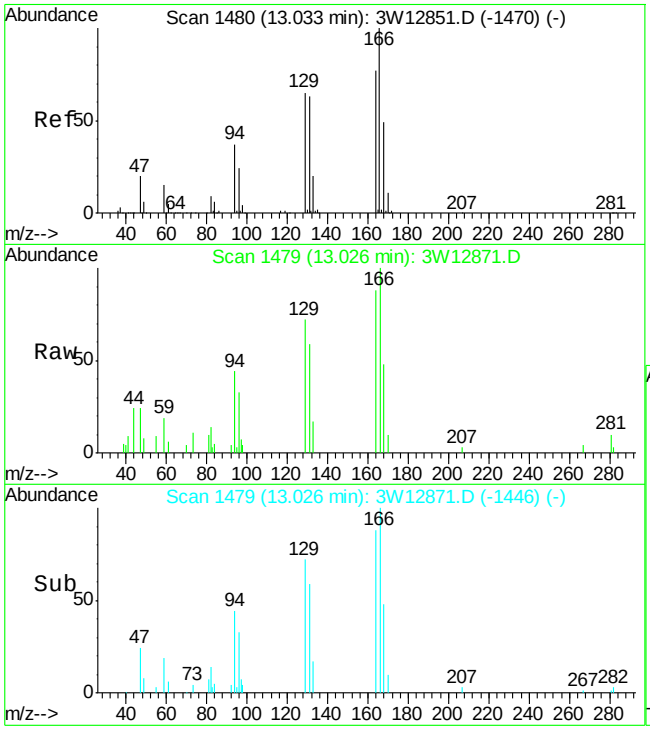


#65
2-HEXANONE
Concen: 1.05 PPBV
RT: 12.13 min Scan# 1332
Delta R.T. 0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 43 Resp: 14887

Ion	Ratio	Lower	Upper
43	100		
58	39.5	34.2	74.2
100	7.8	0.0	31.8

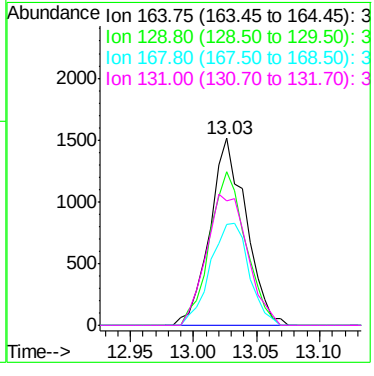


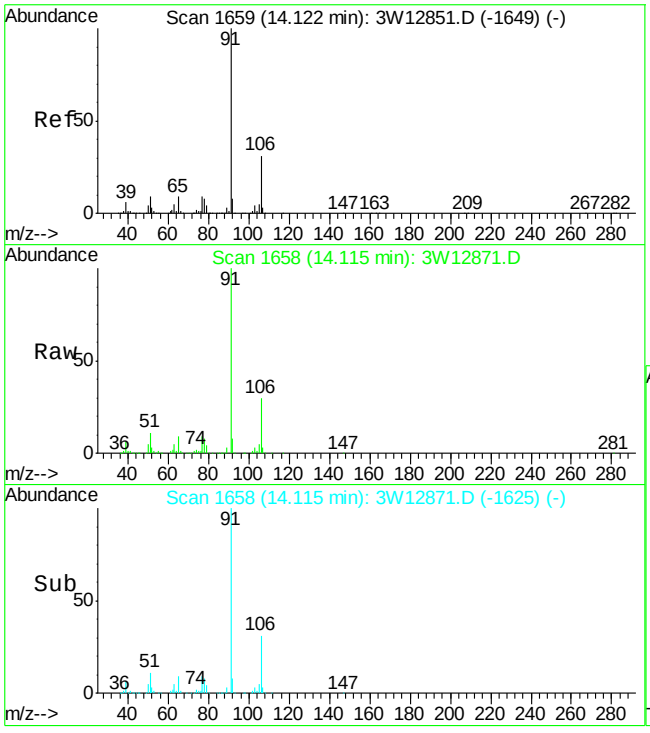


#66
TETRACHLOROETHYLENE
Concen: 0.17 PPBV
RT: 13.03 min Scan# 1479
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:164 Resp: 2993

Ion	Ratio	Lower	Upper
164	100		
129	81.9	63.0	103.0
168	58.5	43.2	83.2
131	79.9	60.5	100.5

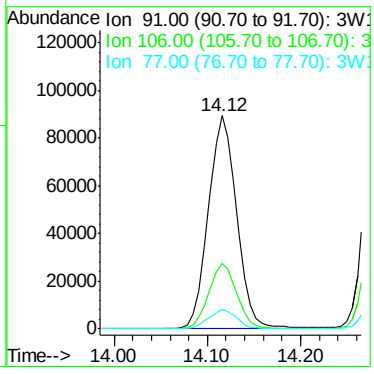


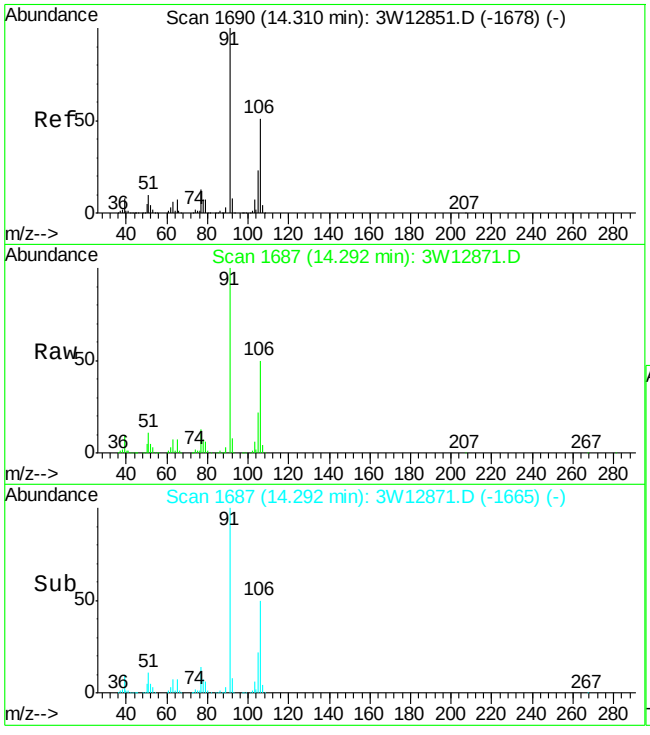


#72
ETHYLBENZENE
Concen: 4.62 PPBV m
RT: 14.12 min Scan# 1658
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion: 91 Resp: 186438

Ion	Ratio	Lower	Upper
91	100		
106	0.0	11.2	51.2#
77	0.0	0.0	28.7

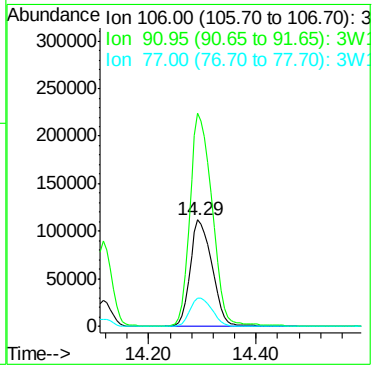


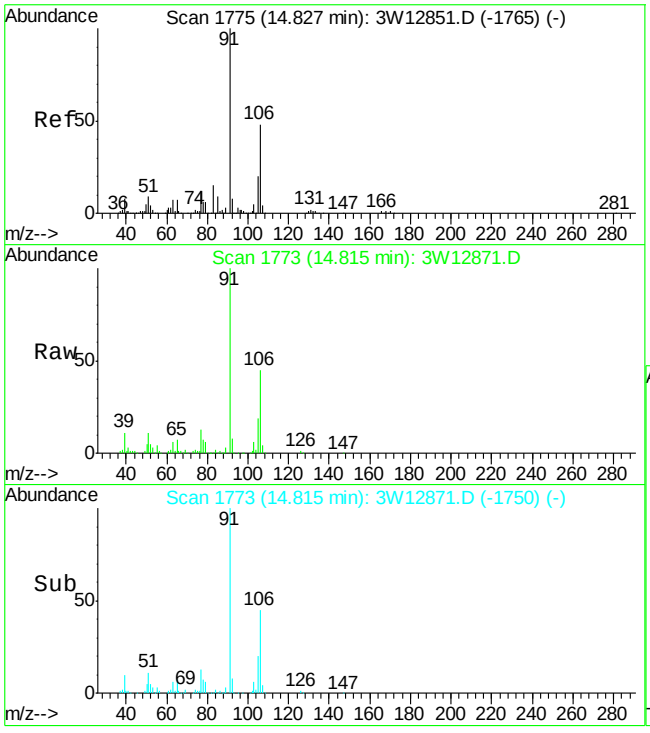


#73
m,p-XYLENE
Concen: 20.82 PPBV
RT: 14.29 min Scan# 1687
Delta R.T. -0.02 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:106 Resp: 318317

Ion	Ratio	Lower	Upper
106	100		
91	200.2	176.7	216.7
77	27.0	6.3	46.3

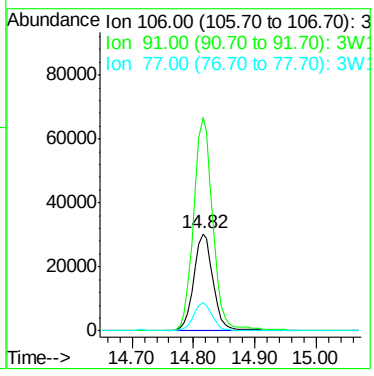


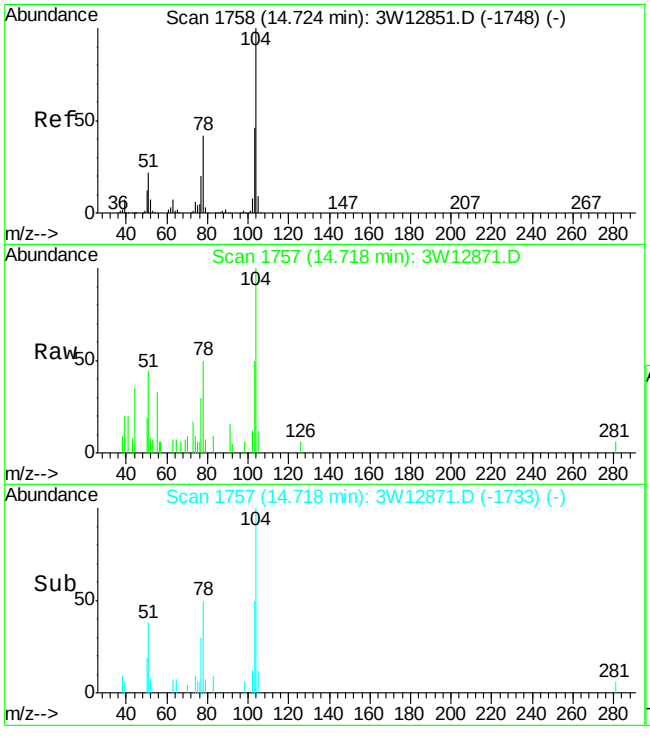


#74
o-XYLENE
Concen: 4.59 PPBV
RT: 14.82 min Scan# 1773
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:106 Resp: 66683

Ion	Ratio	Lower	Upper
106	100		
91	217.0	189.2	229.2
77	28.2	6.0	46.0

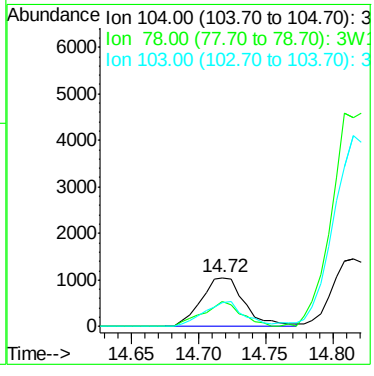


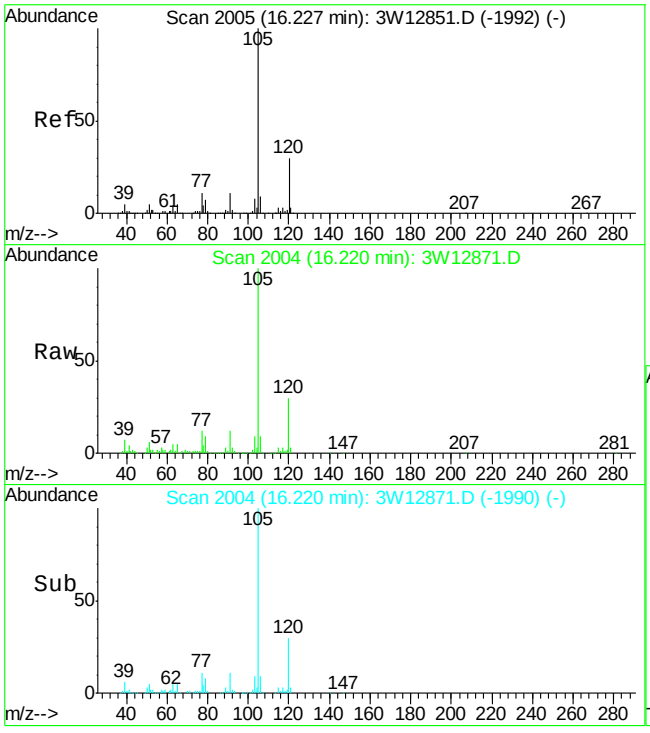


#75
STYRENE
Concen: 0.13 PPBV
RT: 14.72 min Scan# 1757
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:104 Resp: 2367

Ion	Ratio	Lower	Upper
104	100		
78	45.2	21.8	61.8
103	46.6	26.6	66.6

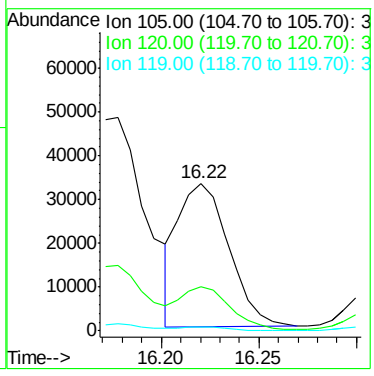


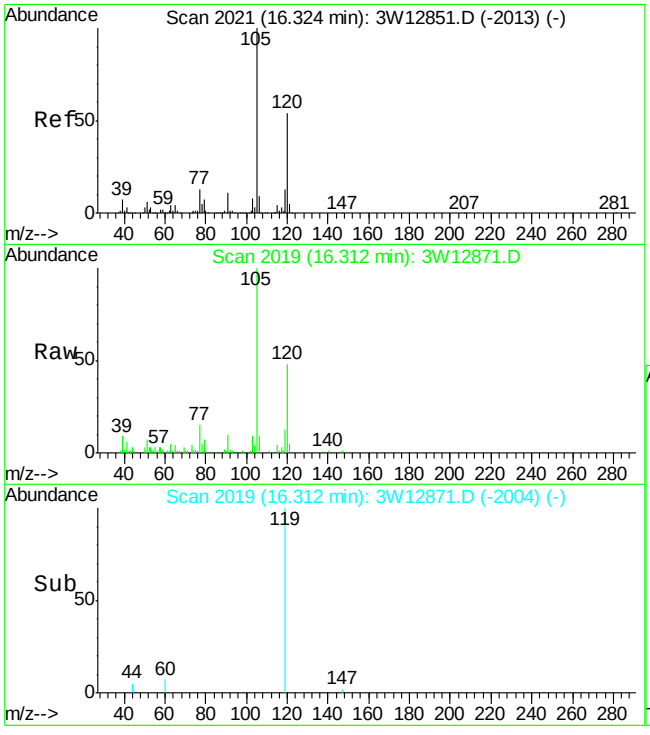


#84
4-ETHYLTOLUENE
Concen: 1.59 PPBV
RT: 16.22 min Scan# 2004
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:105 Resp: 58774

Ion	Ratio	Lower	Upper
105	100		
120	29.6	10.4	50.4
119	2.6	0.0	22.4

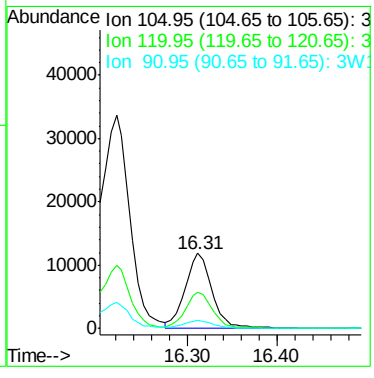


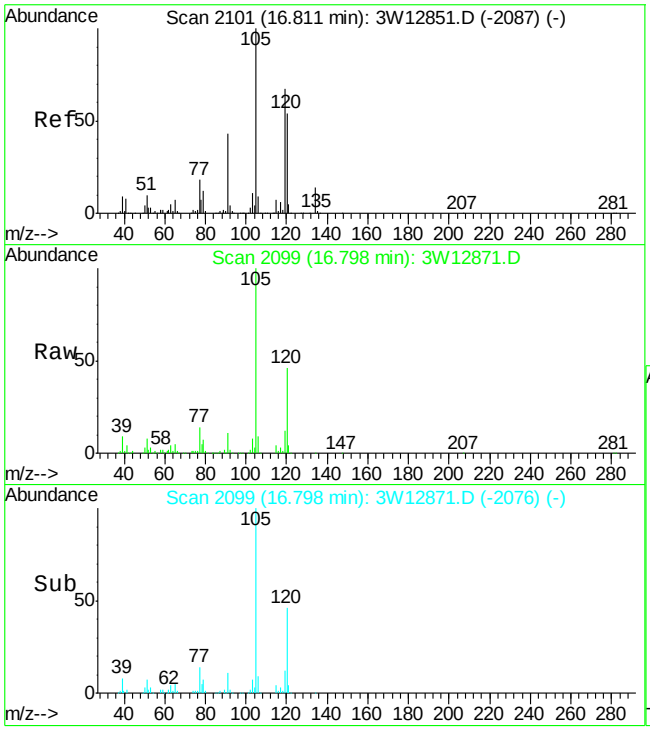


#85
1,3,5-TRIMETHYLBENZENE
Concen: 0.78 PPBV
RT: 16.31 min Scan# 2019
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:105 Resp: 24278

Ion	Ratio	Lower	Upper
105	100		
120	50.6	31.9	71.9
91	10.9	0.0	30.6

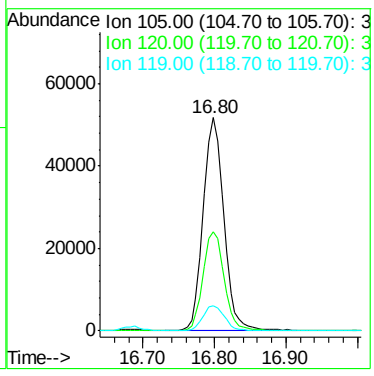




#87
1,2,4-TRIMETHYLBENZENE
Concen: 3.70 PPBV
RT: 16.80 min Scan# 2099
Delta R.T. -0.01 min
Lab File: 3W12871.D
Acq: 5 Oct 2009 1:04 pm

Tgt Ion:105 Resp: 102936

Ion	Ratio	Lower	Upper
105	100		
120	47.6	39.6	79.6
119	12.3	104.5	144.5#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12875.D Vial: 10
Acq On : 5 Oct 2009 3:46 pm Operator: YOUMINH
Sample : JA28237-1 Inst : MS3W
Misc : MS86154,V3W524,20,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:02:05 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

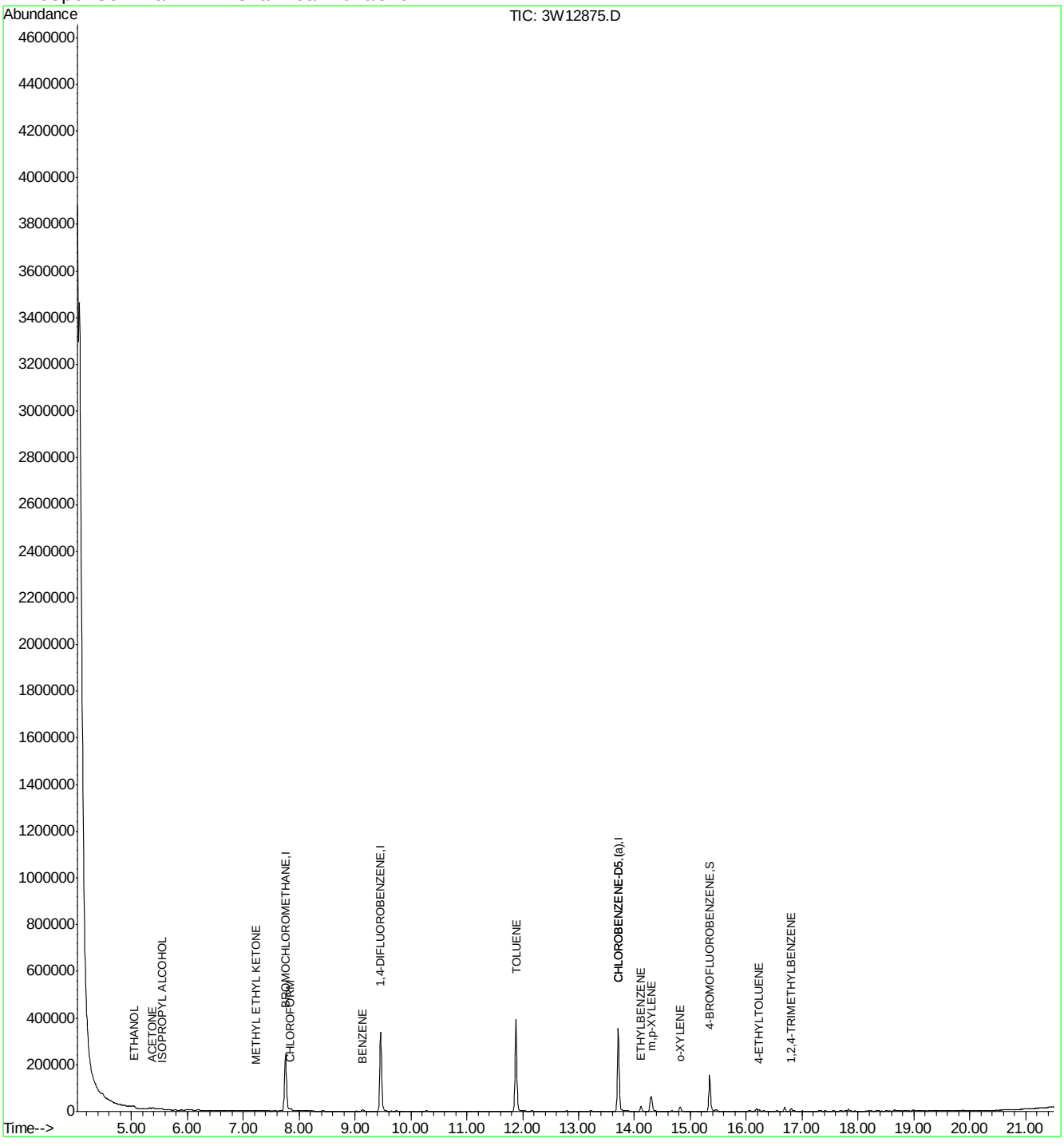
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	87912	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	354164	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	143642	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	143642	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	67882	4.50	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 90.00%			
Target Compounds						Qvalue
18) ISOPROPYL ALCOHOL	5.55	45	9168	0.55	PPBV	99
19) ACETONE	5.38	58	2682	0.54	PPBV #	9
26) ETHANOL	5.04	45	5598	1.41	PPBV	91
38) METHYL ETHYL KETONE	7.24	72	1011	0.24	PPBV	94
42) CHLOROFORM	7.84	83	6655	0.27	PPBV	95
48) BENZENE	9.13	78	6936	0.23	PPBV	97
61) TOLUENE	11.88	92	217697	11.07	PPBV	99
72) ETHYLBENZENE	14.12	91	18804	0.53	PPBV	99
73) m,p-XYLENE	14.29	106	31082	2.33	PPBV	99
74) o-XYLENE	14.82	106	6618	0.52	PPBV	95
84) 4-ETHYLTOLUENE	16.22	105	5185	0.16	PPBV	99
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	8539	0.35	PPBV #	27

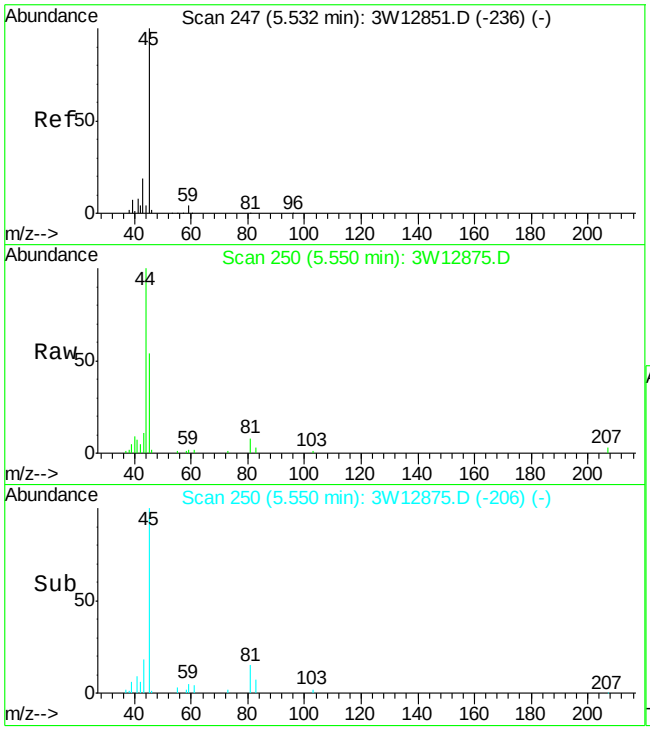
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12875.D Vial: 10
Acq On : 5 Oct 2009 3:46 pm Operator: YOUMINH
Sample : JA28237-1 Inst : MS3W
Misc : MS86154,V3W524,20,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:37 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

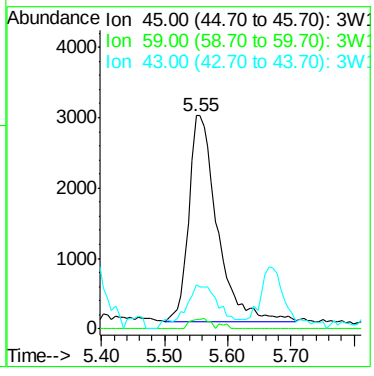


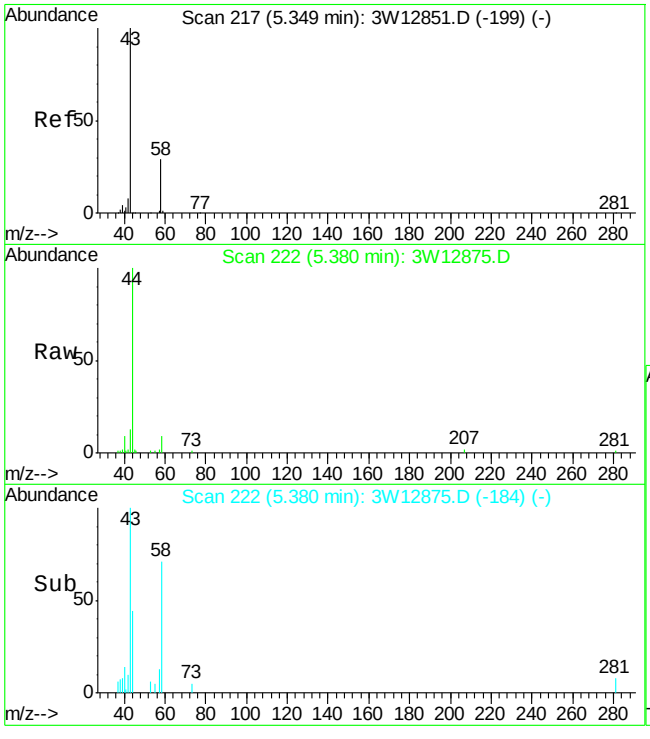


#18
ISOPROPYL ALCOHOL
Concen: 0.55 PPBV
RT: 5.55 min Scan# 250
Delta R.T. 0.02 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 45 Resp: 9168

Ion	Ratio	Lower	Upper
45	100		
59	4.4	0.0	23.9
43	20.8	0.6	40.6

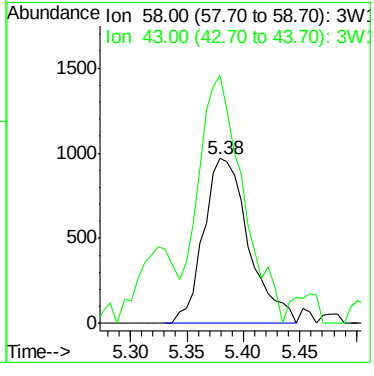


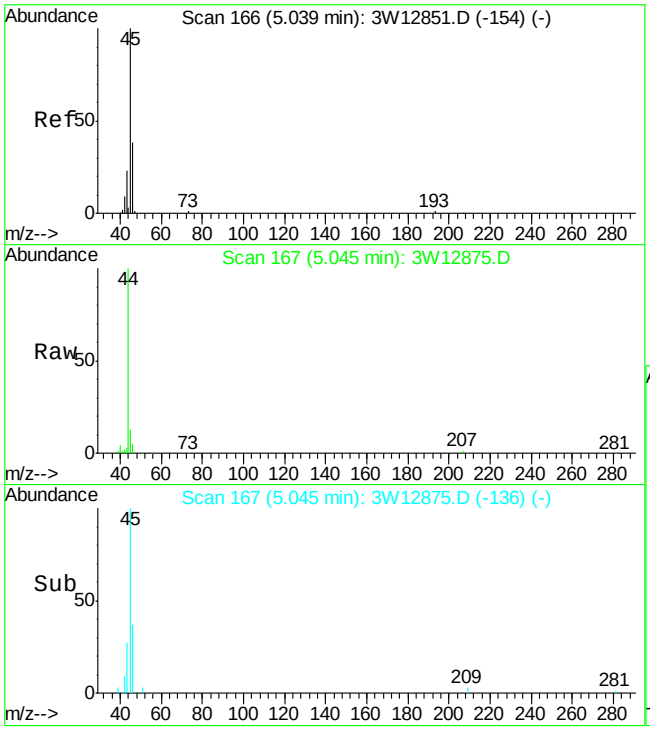


#19
ACETONE
Concen: 0.54 PPBV
RT: 5.38 min Scan# 222
Delta R.T. 0.03 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 58 Resp: 2682

Ion	Ratio	Lower	Upper
58	100		
43	148.3	323.9	363.9#

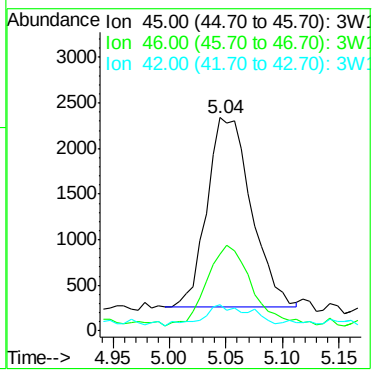


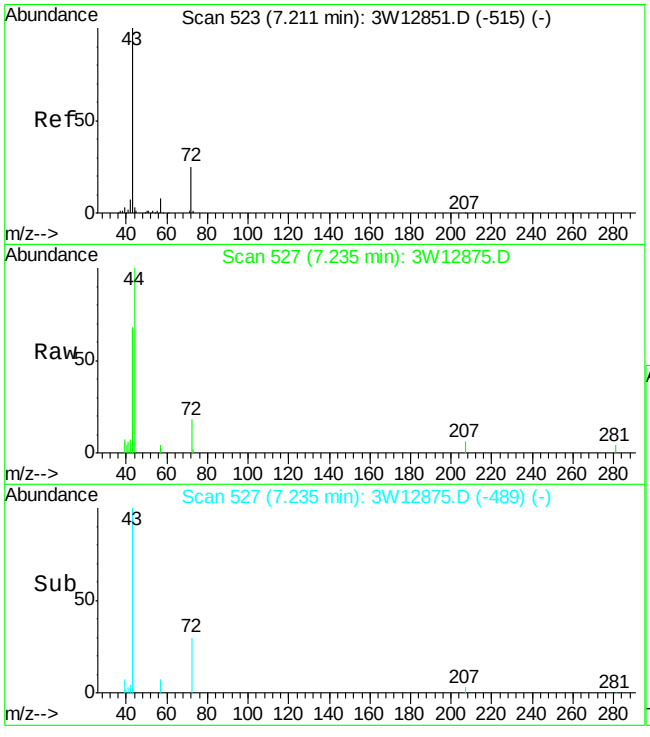


#26
ETHANOL
Concen: 1.41 PPBV
RT: 5.04 min Scan# 167
Delta R.T. 0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 45 Resp: 5598

Ion	Ratio	Lower	Upper
45	100		
46	43.5	17.9	57.9
42	11.9	0.0	29.8

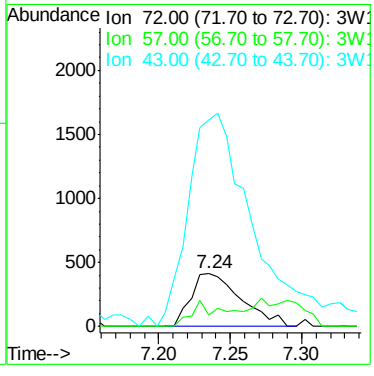


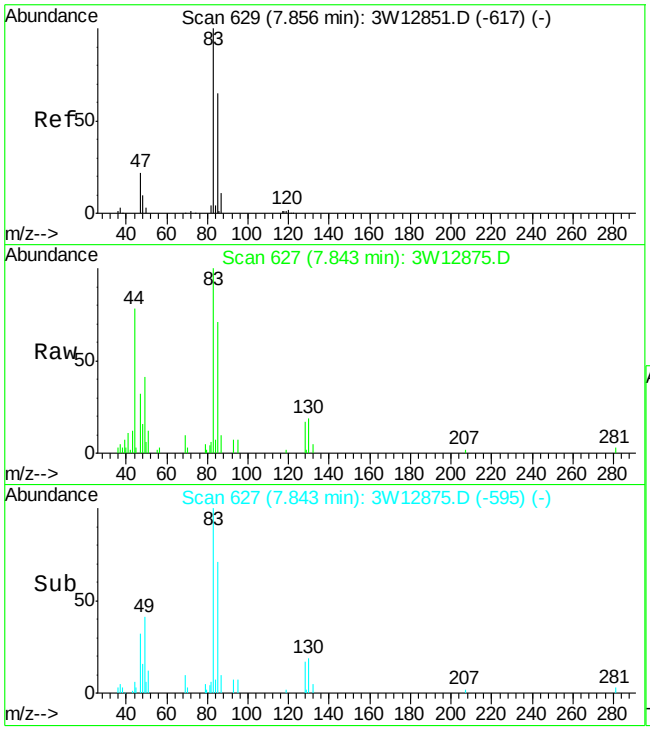


#38
METHYL ETHYL KETONE
Concen: 0.24 PPBV
RT: 7.24 min Scan# 527
Delta R.T. 0.02 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 72 Resp: 1011

Ion	Ratio	Lower	Upper
72	100		
57	21.9	12.0	52.0
43	387.7	378.5	418.5

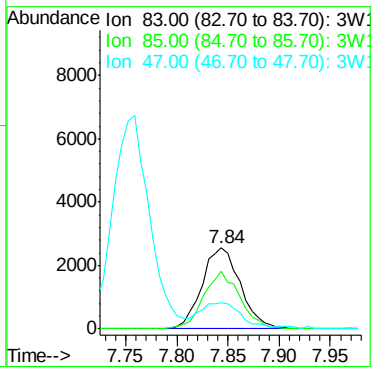


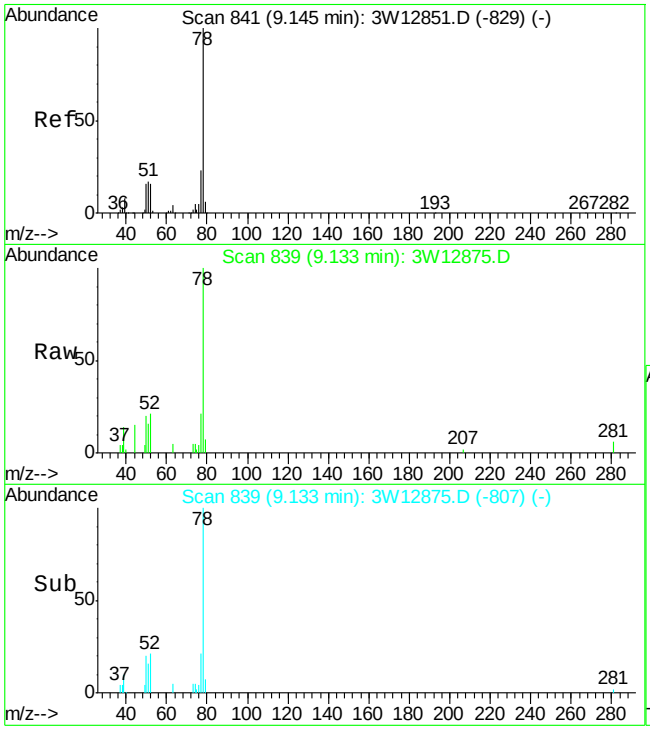


#42
CHLOROFORM
Concen: 0.27 PPBV
RT: 7.84 min Scan# 627
Delta R.T. -0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 83 Resp: 6655

Ion	Ratio	Lower	Upper
83	100		
85	67.0	45.0	85.0
47	30.2	4.7	44.7

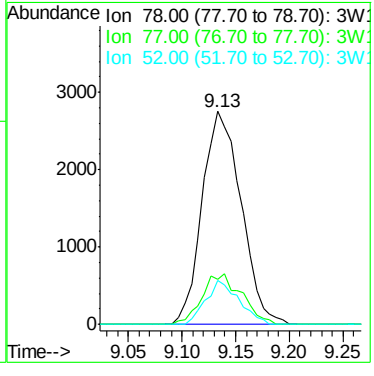


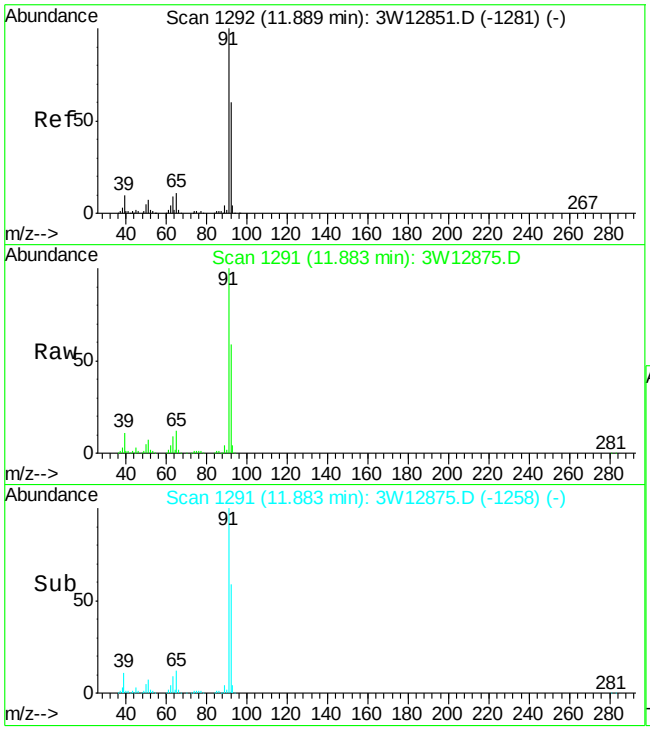


#48
BENZENE
Concen: 0.23 PPBV
RT: 9.13 min Scan# 839
Delta R.T. -0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 78 Resp: 6936

Ion	Ratio	Lower	Upper
78	100		
77	24.0	3.2	43.2
52	17.5	0.0	35.8

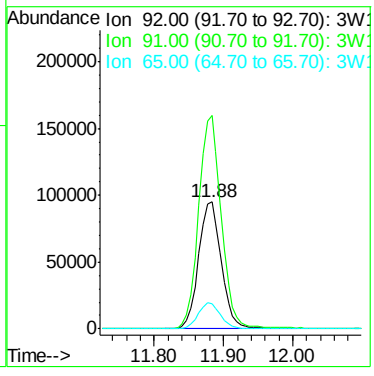


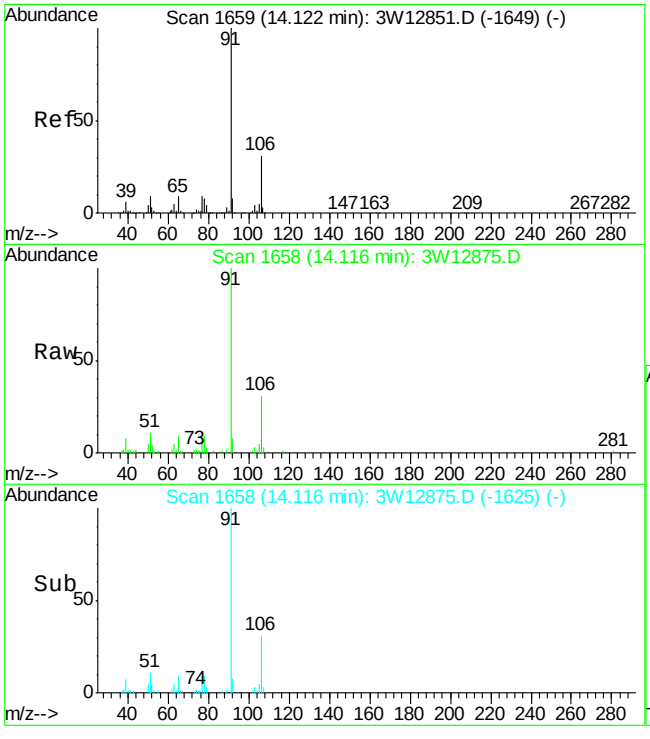


#61
TOLUENE
Concen: 11.07 PPBV
RT: 11.88 min Scan# 1291
Delta R.T. -0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 92 Resp: 217697

Ion	Ratio	Lower	Upper
92	100		
91	168.0	147.6	187.6
65	20.3	0.0	39.0

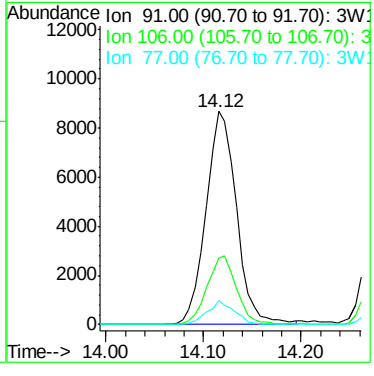


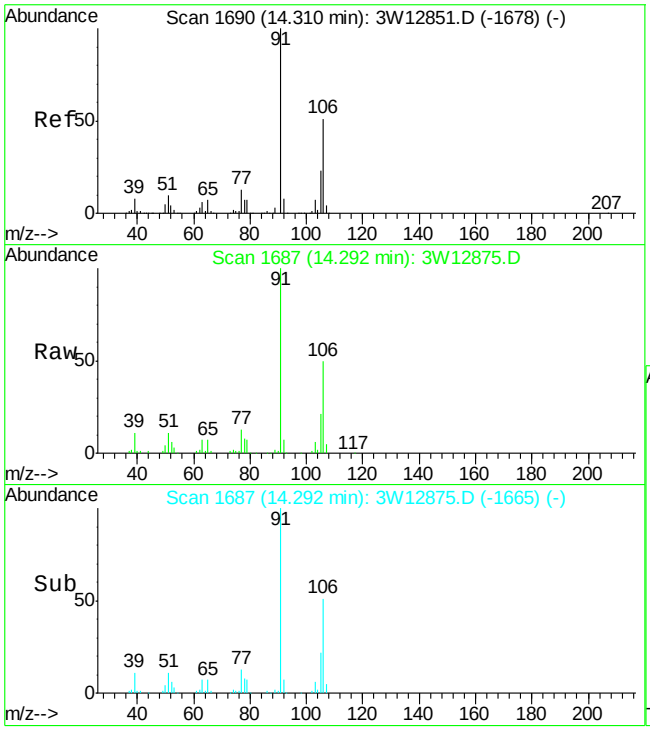


#72
ETHYLBENZENE
Concen: 0.53 PPBV
RT: 14.12 min Scan# 1658
Delta R.T. -0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion: 91 Resp: 18804

Ion	Ratio	Lower	Upper
91	100		
106	30.7	11.2	51.2
77	10.0	0.0	28.7

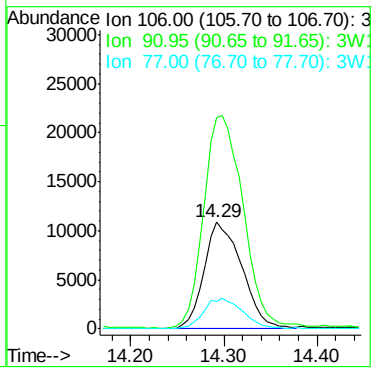


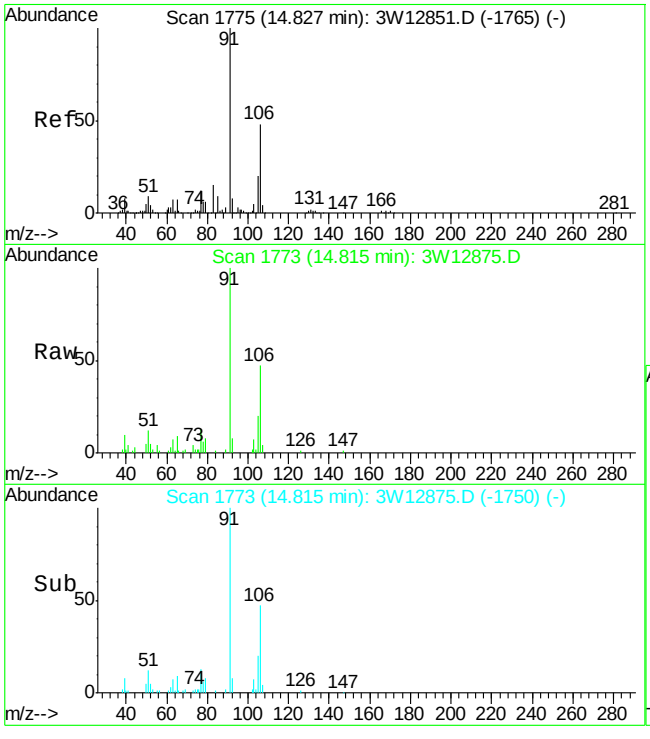


#73
m,p-XYLENE
Concen: 2.33 PPBV
RT: 14.29 min Scan# 1687
Delta R.T. -0.02 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion:106 Resp: 31082

Ion	Ratio	Lower	Upper
106	100		
91	198.2	176.7	216.7
77	25.7	6.3	46.3

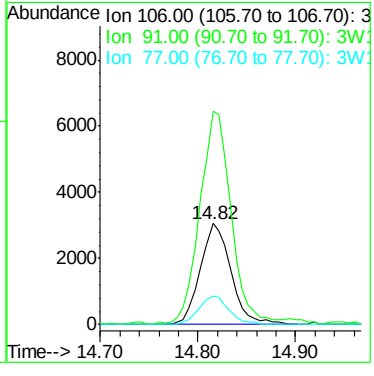


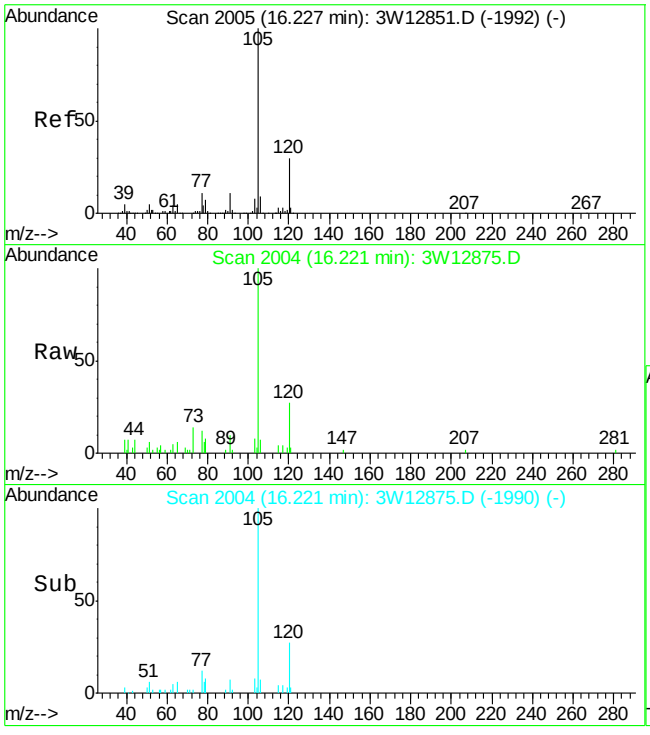


#74
o-XYLENE
Concen: 0.52 PPBV
RT: 14.82 min Scan# 1773
Delta R.T. -0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion:106 Resp: 6618

Ion	Ratio	Lower	Upper
106	100		
91	217.5	189.2	229.2
77	27.6	6.0	46.0

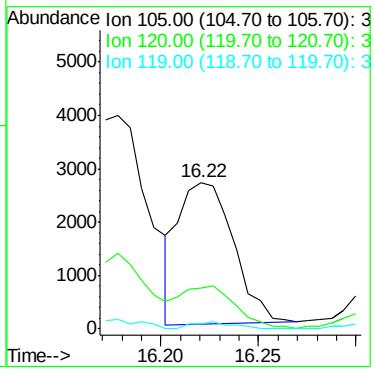


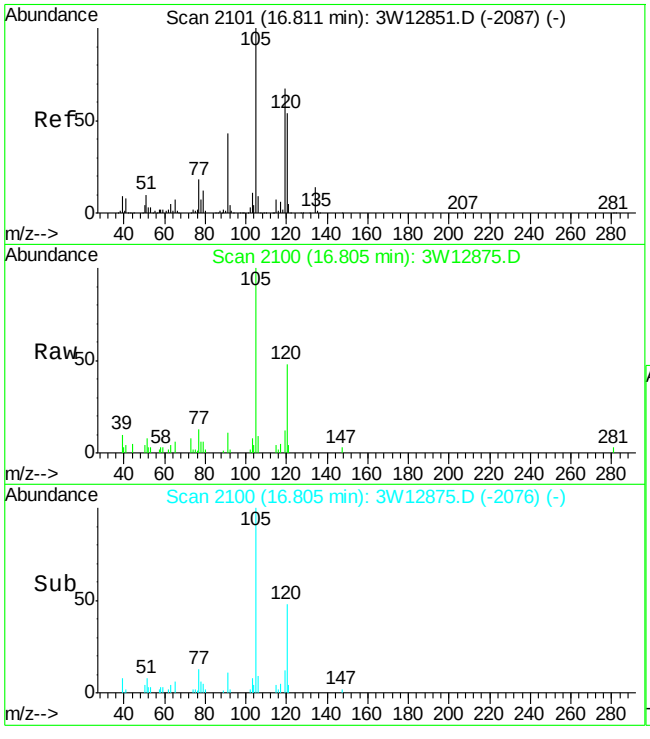


#84
4-ETHYLTOLUENE
Concen: 0.16 PPBV
RT: 16.22 min Scan# 2004
Delta R.T. -0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion:105 Resp: 5185

Ion	Ratio	Lower	Upper
105	100		
120	31.1	10.4	50.4
119	3.4	0.0	22.4

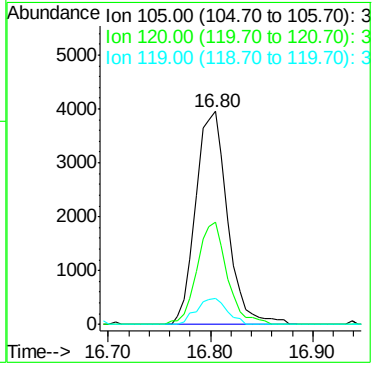




#87
1,2,4-TRIMETHYLBENZENE
Concen: 0.35 PPBV
RT: 16.80 min Scan# 2100
Delta R.T. -0.01 min
Lab File: 3W12875.D
Acq: 5 Oct 2009 3:46 pm

Tgt Ion:105 Resp: 8539

Ion	Ratio	Lower	Upper
105	100		
120	45.3	39.6	79.6
119	11.7	104.5	144.5#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12872.D Vial: 7
Acq On : 5 Oct 2009 1:45 pm Operator: YOUMINH
Sample : JA28237-2 Inst : MS3W
Misc : MS86154,V3W524,100,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:02:00 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

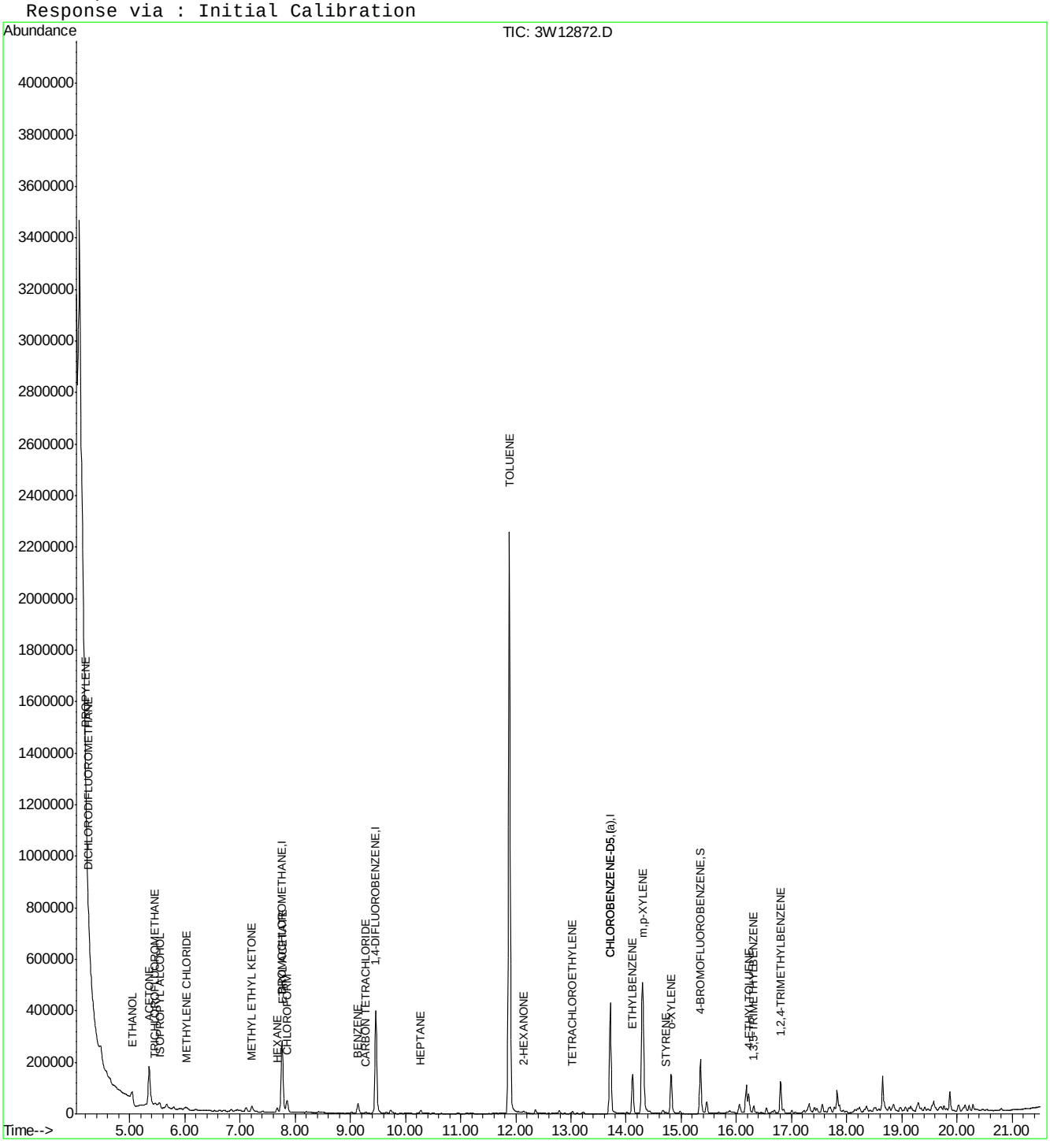
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	97547	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	406973	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	170807	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	170807	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	90297	5.04	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 100.80%			
Target Compounds						Qvalue
5) DICHLORODIFLUOROMETHANE	4.26	85	4715	0.12	PPBV	99
7) PROPYLENE	4.21	41	6586	0.47	PPBV	96
17) TRICHLOROFLUOROMETHANE	5.46	101	8408	0.21	PPBV	100
18) ISOPROPYL ALCOHOL	5.55	45	13740	0.74	PPBV	83
19) ACETONE	5.36	58	80573	14.68	PPBV #	81
26) ETHANOL	5.04	45	36898	8.37	PPBV	97
28) METHYLENE CHLORIDE	6.04	84	2550	0.22	PPBV	94
35) HEXANE	7.67	57	8163	0.46	PPBV #	81
38) METHYL ETHYL KETONE	7.22	72	8596	1.84	PPBV #	76
41) ETHYL ACETATE	7.78	61	1368	0.45	PPBV	96
42) CHLOROFORM	7.85	83	39275	1.45	PPBV	98
45) CARBON TETRACHLORIDE	9.27	117	4718	0.16	PPBV	99
48) BENZENE	9.14	78	37192	1.09	PPBV	98
56) HEPTANE	10.28	43	7705	0.39	PPBV	85
61) TOLUENE	11.88	92	1283752	56.79	PPBV	96
65) 2-HEXANONE	12.14	43	9002	0.61	PPBV	82
66) TETRACHLOROETHYLENE	13.03	164	2315	0.13	PPBV	99
72) ETHYLBENZENE	14.12	91	145355	3.47	PPBV	98
73) m,p-XYLENE	14.30	106	256746	16.17	PPBV	99
74) o-XYLENE	14.82	106	54256	3.59	PPBV	98
75) STYRENE	14.72	104	2203	0.11	PPBV	90
84) 4-ETHYLTOLUENE	16.22	105	52993	1.38	PPBV	98
85) 1,3,5-TRIMETHYLBENZENE	16.32	105	20147	0.62	PPBV	98
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	85898	2.97	PPBV #	28

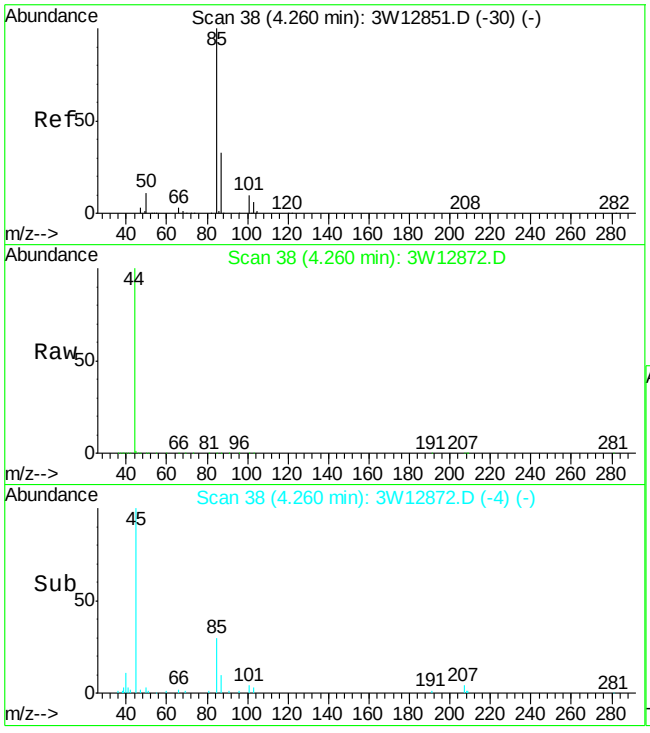
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12872.D Vial: 7
Acq On : 5 Oct 2009 1:45 pm Operator: YOUMINH
Sample : JA28237-2 Inst : MS3W
Misc : MS86154,V3W524,100,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 8 11:11 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

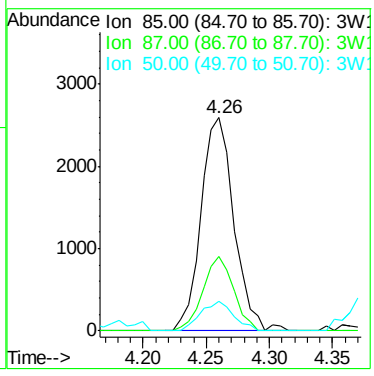


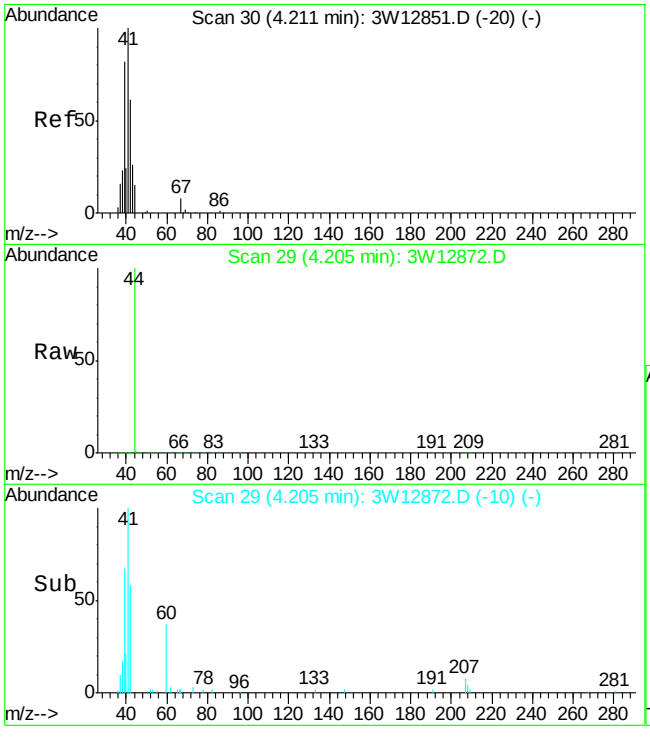


#5
DICHLORODIFLUOROMETHANE
Concen: 0.12 PPBV
RT: 4.26 min Scan# 38
Delta R.T. 0.00 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 85 Resp: 4715

Ion	Ratio	Lower	Upper
85	100		
87	32.4	12.6	52.6
50	13.6	0.0	31.8

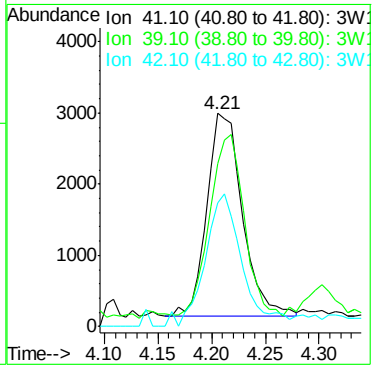


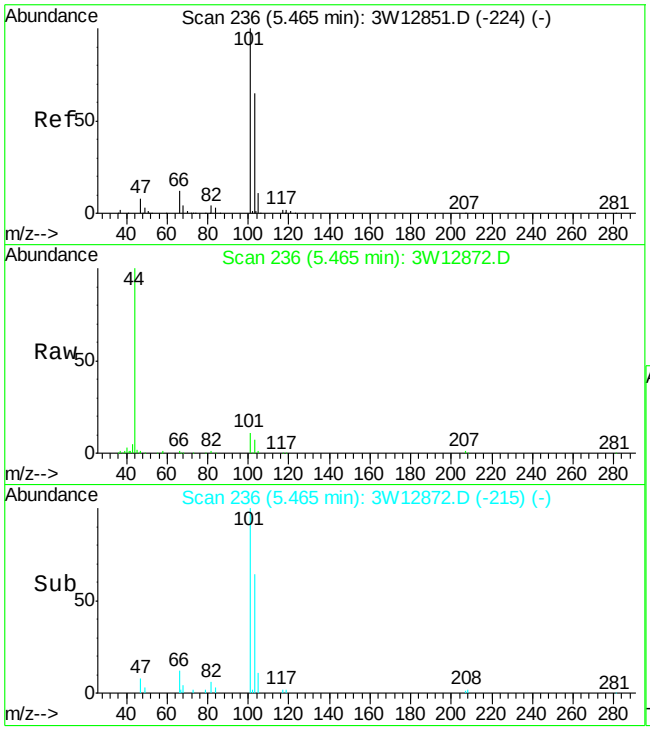


#7
PROPYLENE
Concen: 0.47 PPBV
RT: 4.21 min Scan# 29
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 41 Resp: 6586

Ion	Ratio	Lower	Upper
41	100		
39	86.0	65.9	105.9
42	68.0	40.3	80.3

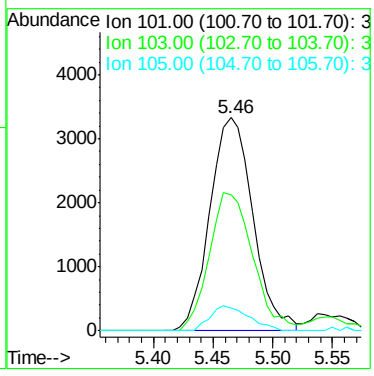


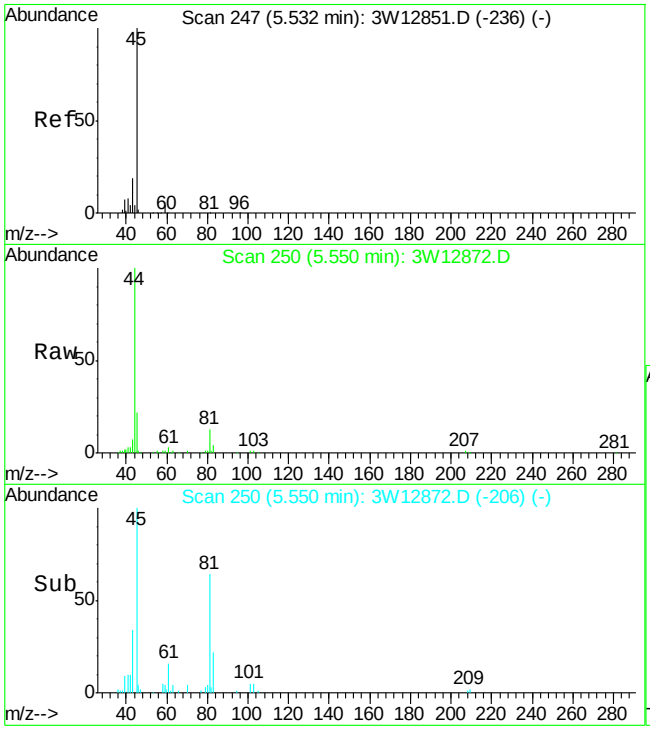


#17
TRICHLOROFLUOROMETHANE
Concen: 0.21 PPBV
RT: 5.46 min Scan# 236
Delta R.T. 0.00 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:101 Resp: 8408

Ion	Ratio	Lower	Upper
101	100		
103	65.4	45.3	85.3
105	10.5	0.0	30.7

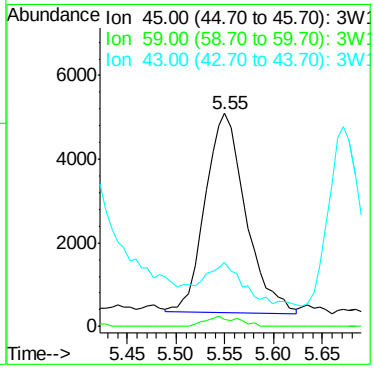


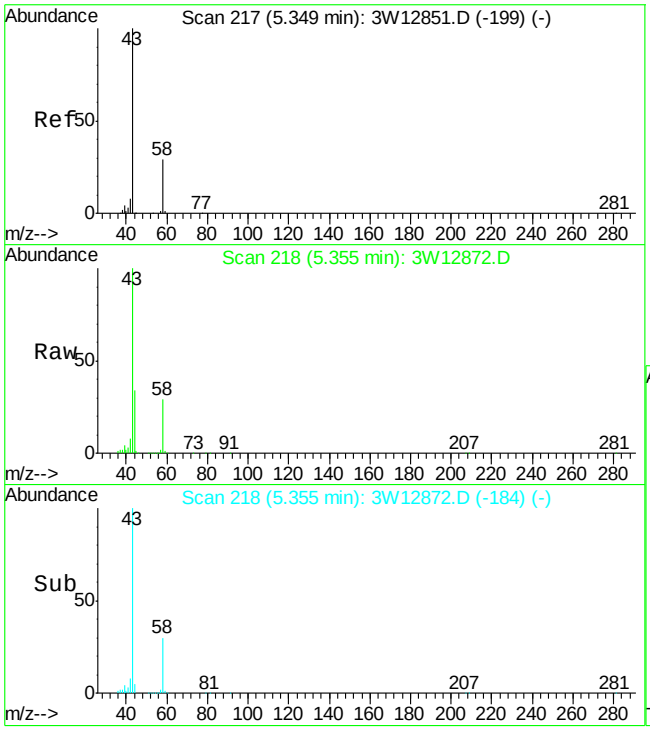


#18
ISOPROPYL ALCOHOL
Concen: 0.74 PPBV
RT: 5.55 min Scan# 250
Delta R.T. 0.02 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 45 Resp: 13740

Ion	Ratio	Lower	Upper
45	100		
59	3.2	0.0	23.9
43	30.0	0.6	40.6

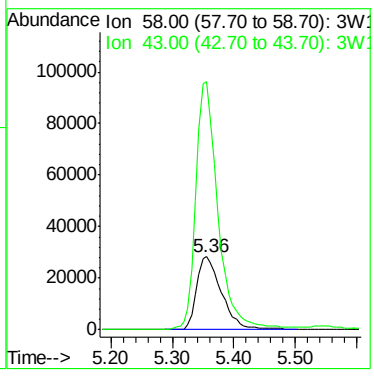


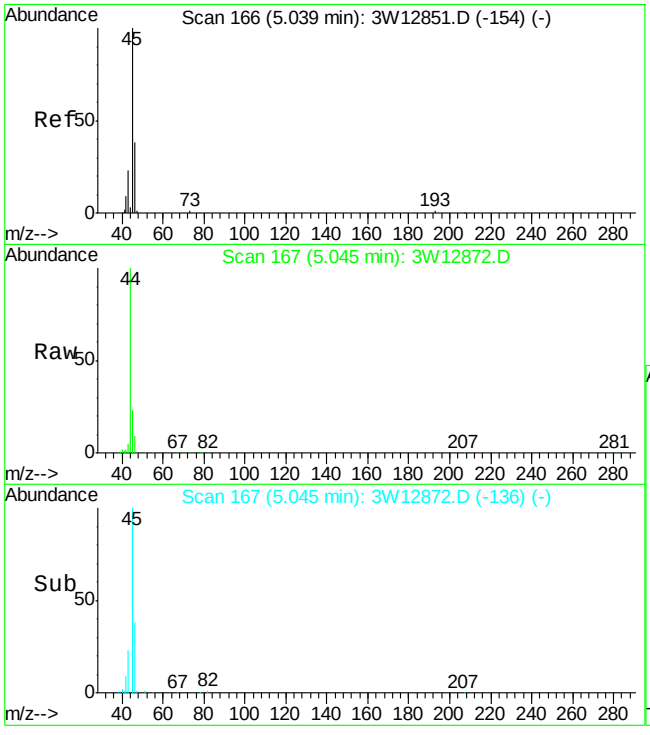


#19
ACETONE
Concen: 14.68 PPBV
RT: 5.36 min Scan# 218
Delta R.T. 0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 58 Resp: 80573

Ion	Ratio	Lower	Upper
58	100		
43	302.4	323.9	363.9#

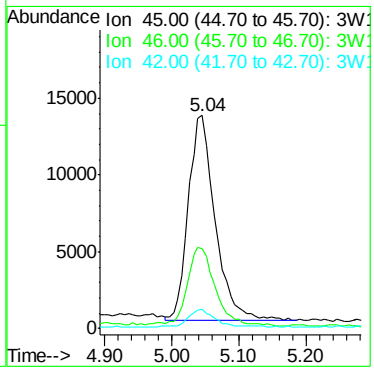


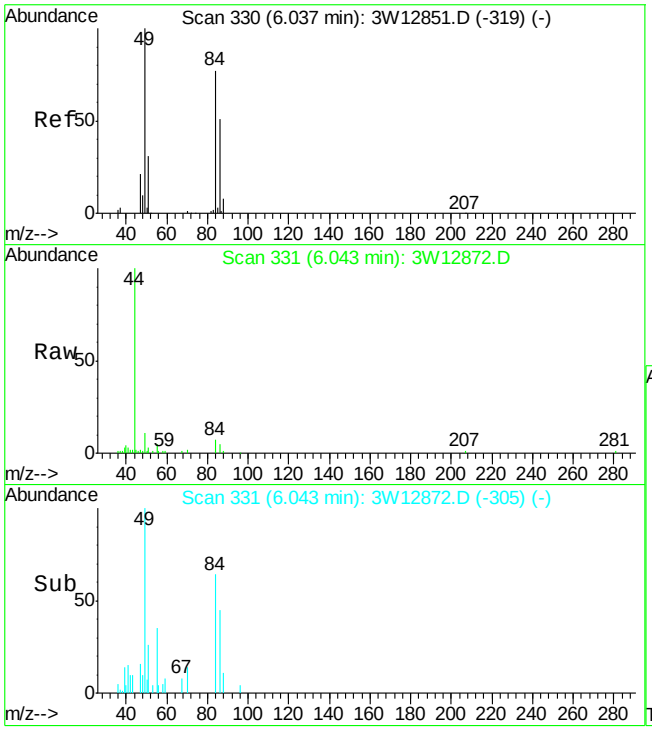


#26
ETHANOL
Concen: 8.37 PPBV
RT: 5.04 min Scan# 167
Delta R.T. 0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 45 Resp: 36898

Ion	Ratio	Lower	Upper
45	100		
46	39.6	17.9	57.9
42	8.9	0.0	29.8

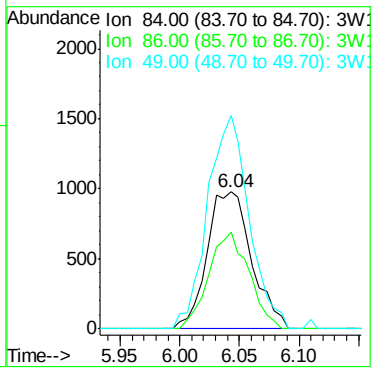


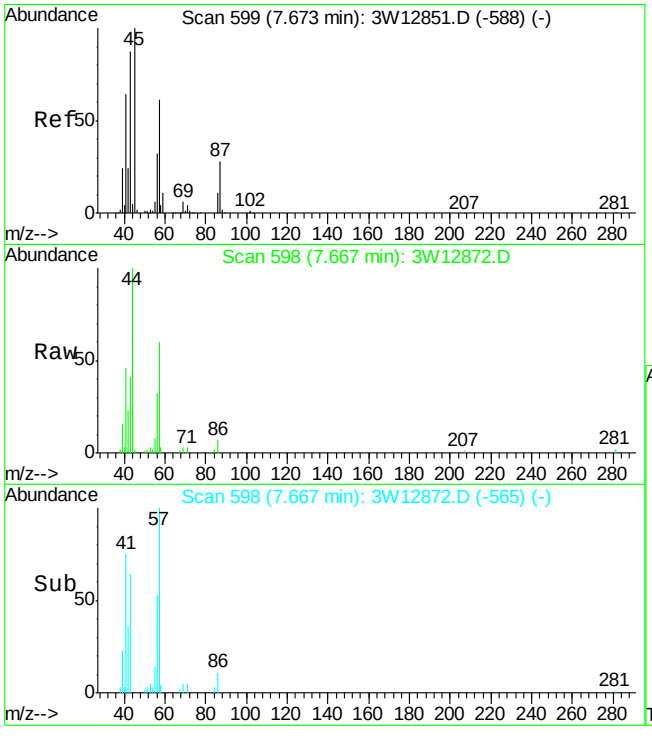


#28
METHYLENE CHLORIDE
Concen: 0.22 PPBV
RT: 6.04 min Scan# 331
Delta R.T. 0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 84 Resp: 2550

Ion	Ratio	Lower	Upper
84	100		
86	63.8	45.5	85.5
49	145.2	0.0	335.0

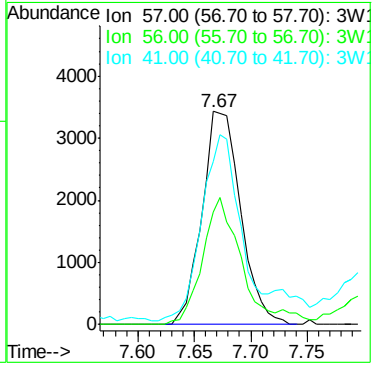


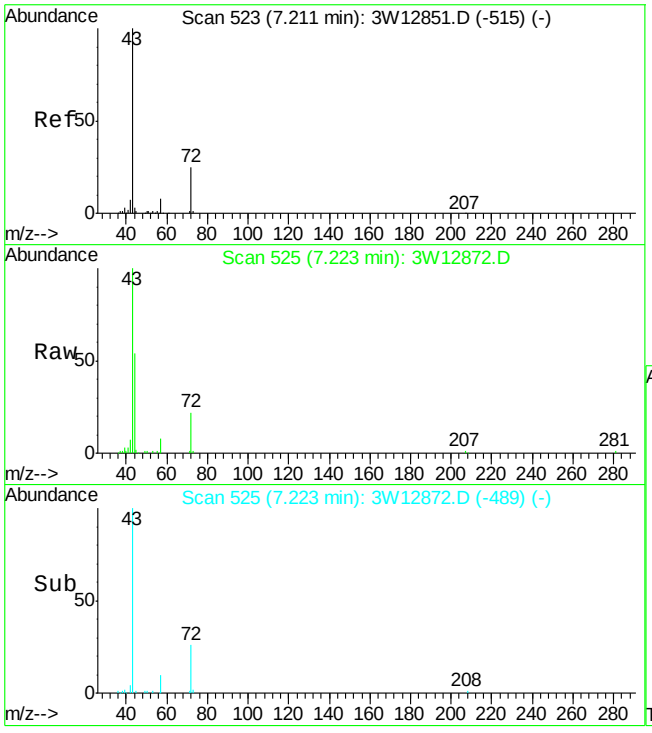


#35
HEXANE
Concen: 0.46 PPBV
RT: 7.67 min Scan# 598
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 57 Resp: 8163

Ion	Ratio	Lower	Upper
57	100		
56	61.3	32.2	72.2
41	87.2	89.9	129.9#

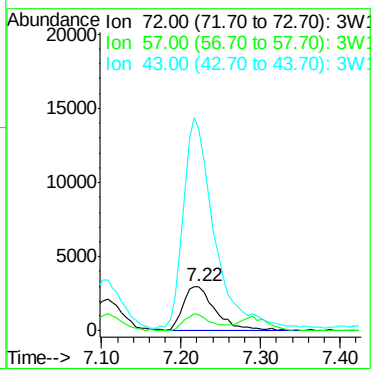


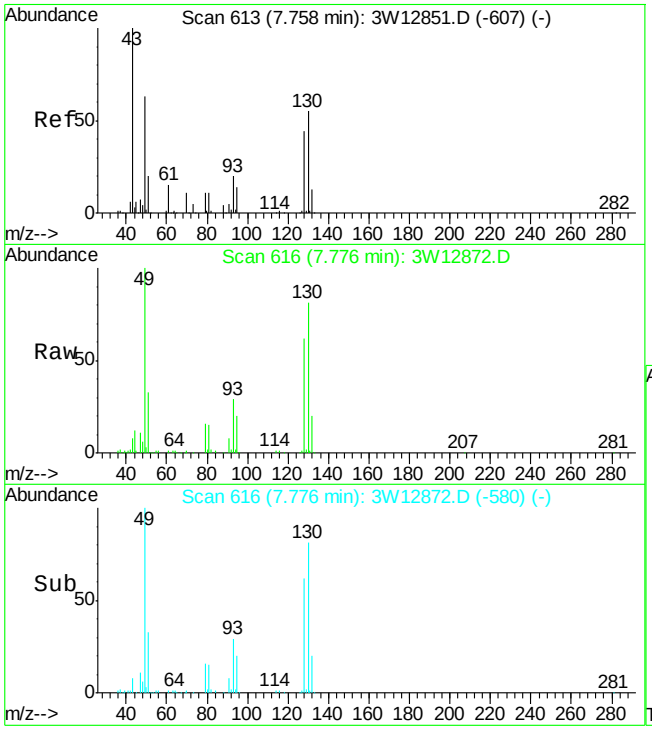


#38
METHYL ETHYL KETONE
Concen: 1.84 PPBV
RT: 7.22 min Scan# 525
Delta R.T. 0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 72 Resp: 8596

Ion	Ratio	Lower	Upper
72	100		
57	37.6	12.0	52.0
43	456.8	378.5	418.5#

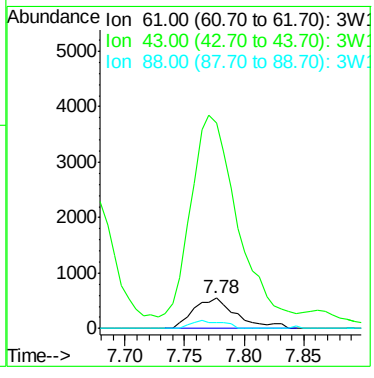


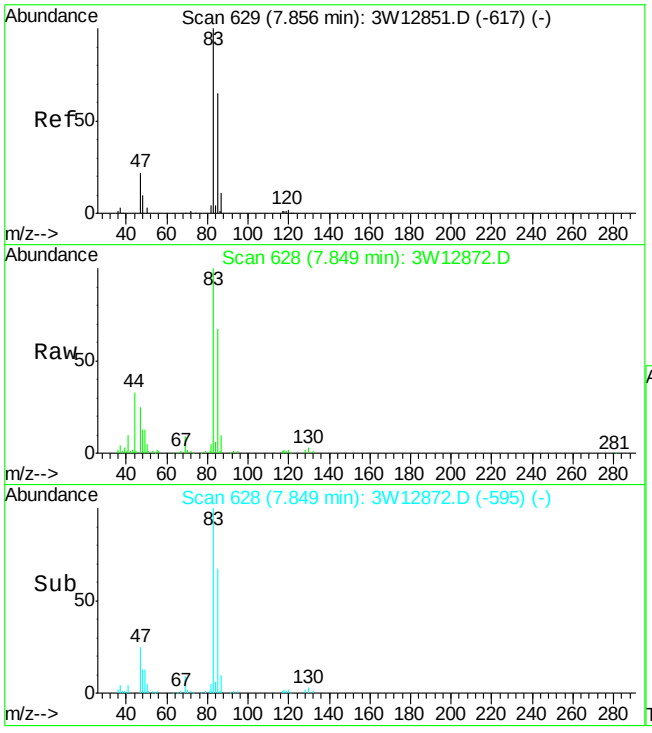


#41
ETHYL ACETATE
Concen: 0.45 PPBV
RT: 7.78 min Scan# 616
Delta R.T. 0.02 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 61 Resp: 1368

Ion	Ratio	Lower	Upper
61	100		
43	775.5	743.7	783.7
88	19.4	12.2	52.2

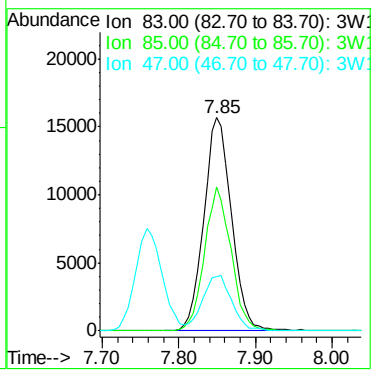


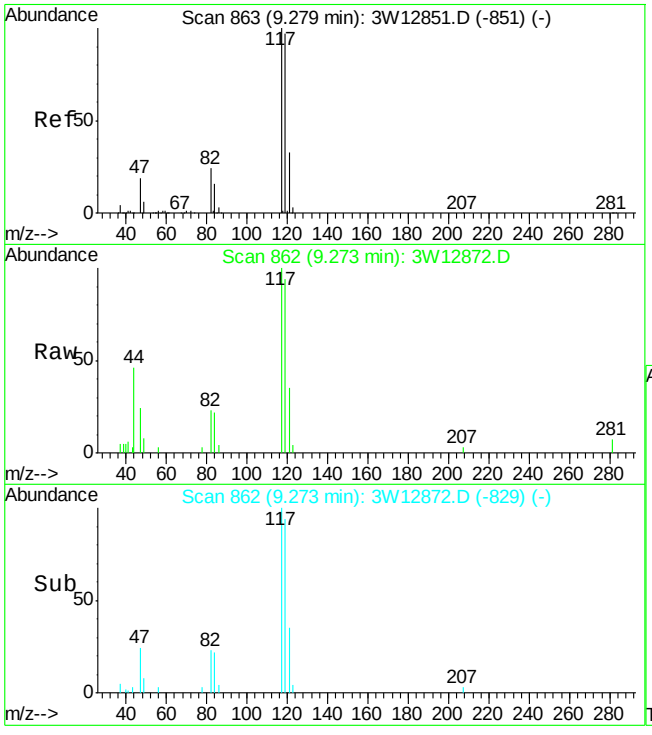


#42
CHLOROFORM
Concen: 1.45 PPBV
RT: 7.85 min Scan# 628
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 83 Resp: 39275

Ion	Ratio	Lower	Upper
83	100		
85	64.8	45.0	85.0
47	27.3	4.7	44.7

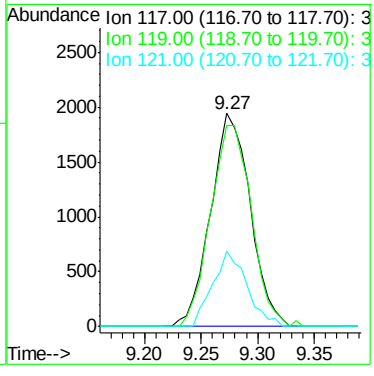


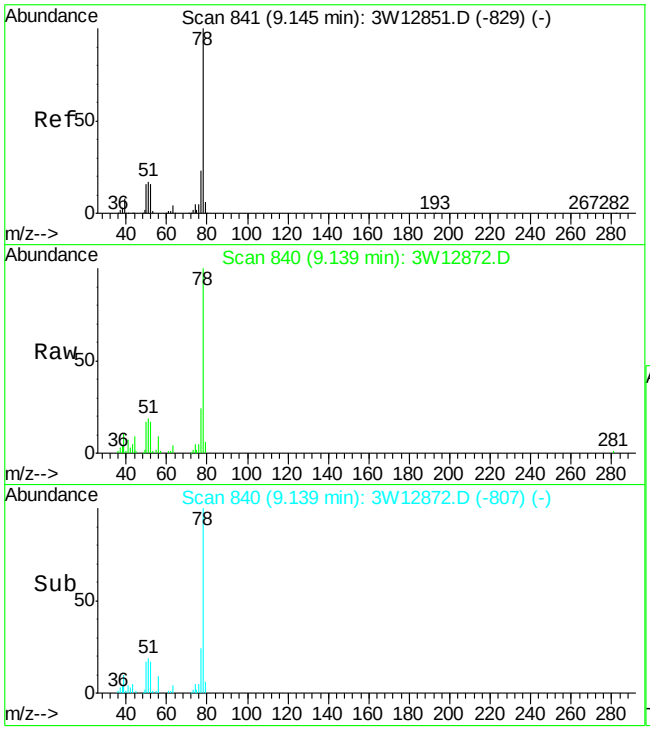


#45
CARBON TETRACHLORIDE
Concen: 0.16 PPBV
RT: 9.27 min Scan# 862
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:117 Resp: 4718

Ion	Ratio	Lower	Upper
117	100		
119	97.4	77.2	117.2
121	30.5	11.6	51.6

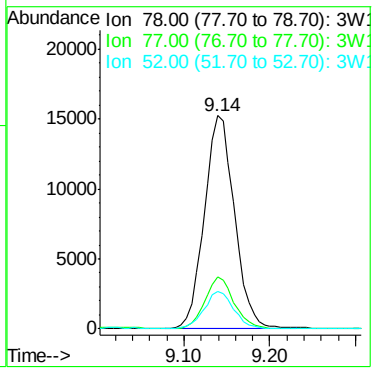


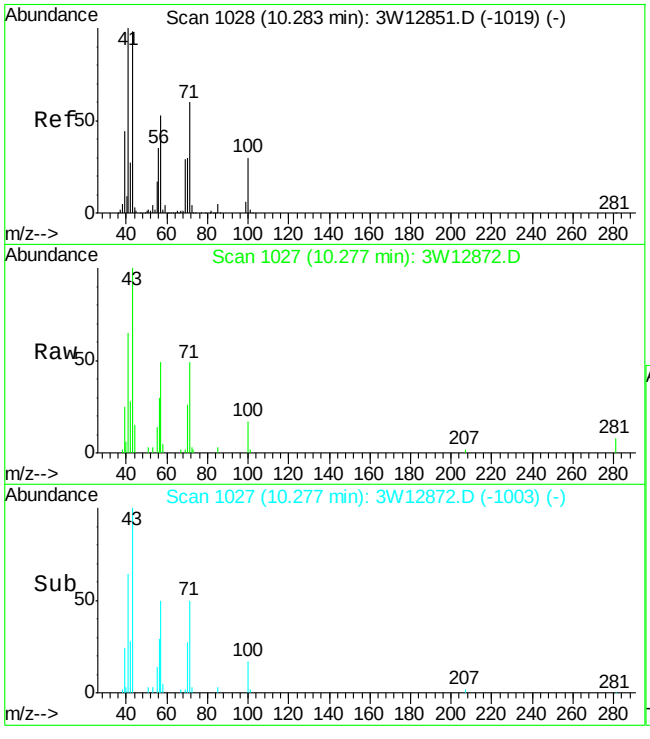


#48
BENZENE
Concen: 1.09 PPBV
RT: 9.14 min Scan# 840
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 78 Resp: 37192

Ion	Ratio	Lower	Upper
78	100		
77	23.5	3.2	43.2
52	17.1	0.0	35.8

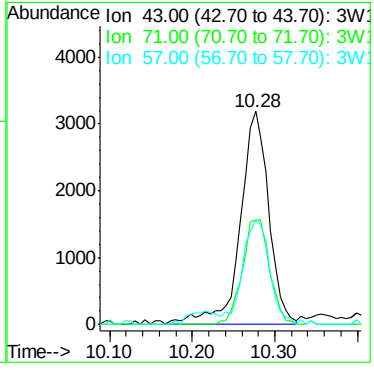


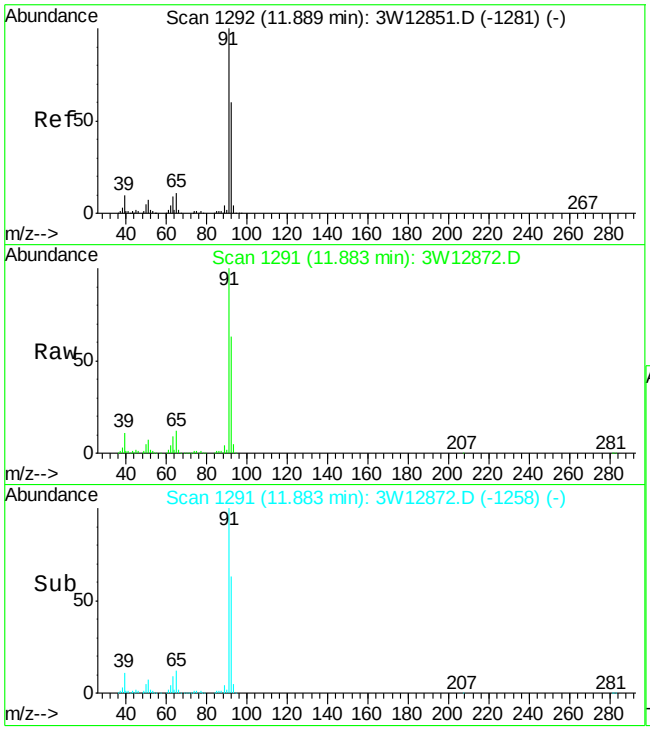


#56
HEPTANE
Concen: 0.39 PPBV
RT: 10.28 min Scan# 1027
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 43 Resp: 7705

Ion	Ratio	Lower	Upper
43	100		
71	46.6	40.7	80.7
57	46.0	34.5	74.5

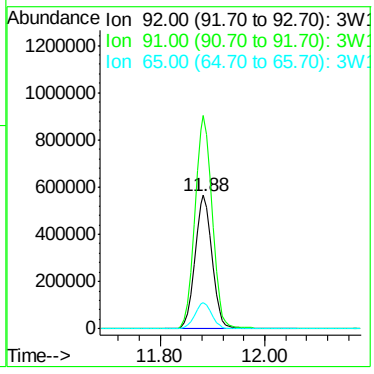


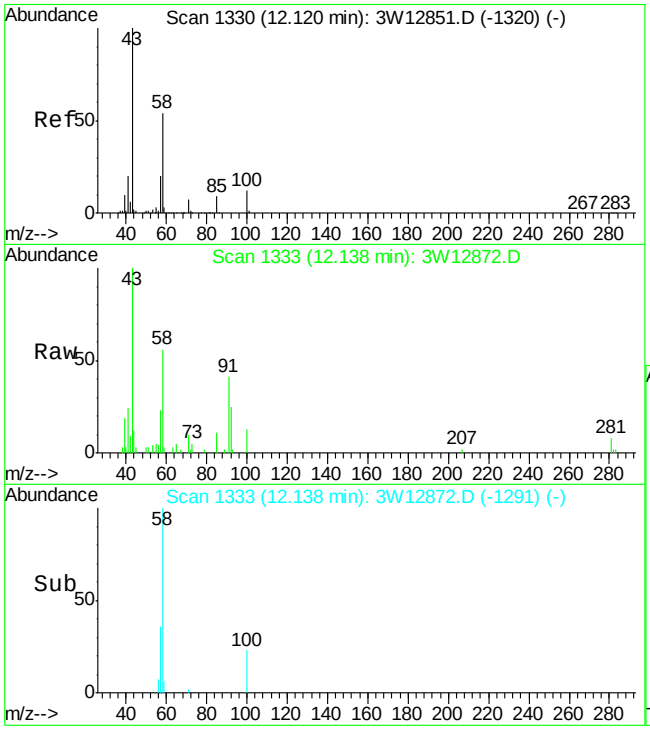


#61
TOLUENE
Concen: 56.79 PPBV
RT: 11.88 min Scan# 1291
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 92 Resp: 1283752

Ion	Ratio	Lower	Upper
92	100		
91	162.0	147.6	187.6
65	19.8	0.0	39.0

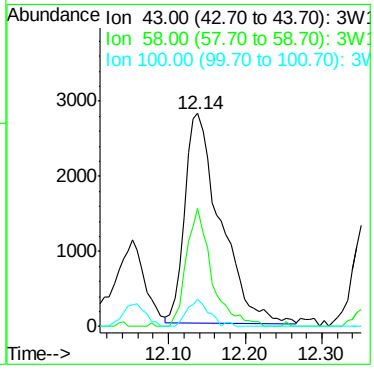


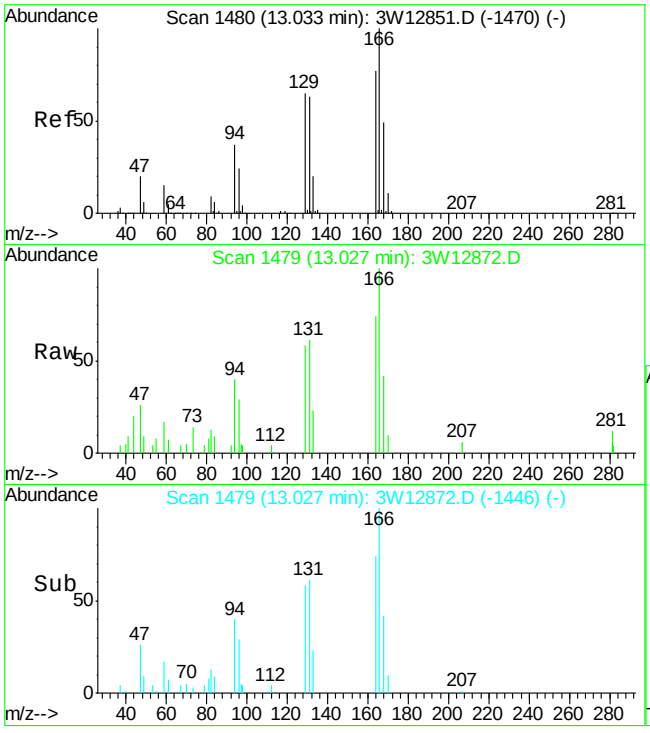


#65
2-HEXANONE
Concen: 0.61 PPBV
RT: 12.14 min Scan# 1333
Delta R.T. 0.02 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 43 Resp: 9002

Ion	Ratio	Lower	Upper
43	100		
58	40.0	34.2	74.2
100	8.2	0.0	31.8

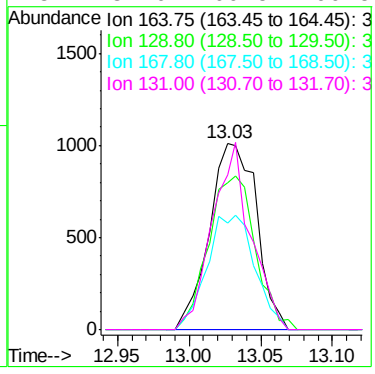


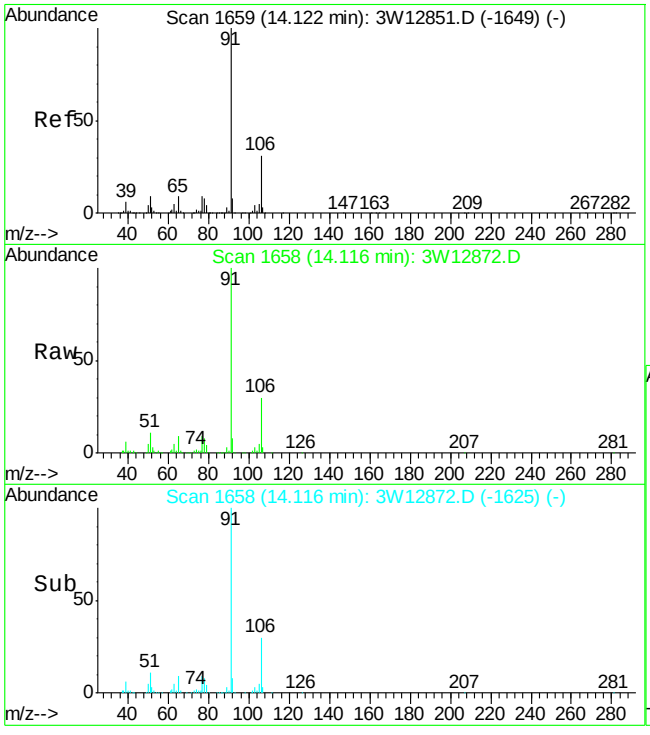


#66
TETRACHLOROETHYLENE
Concen: 0.13 PPBV
RT: 13.03 min Scan# 1479
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:164 Resp: 2315

Ion	Ratio	Lower	Upper
164	100		
129	82.2	63.0	103.0
168	62.4	43.2	83.2
131	82.6	60.5	100.5

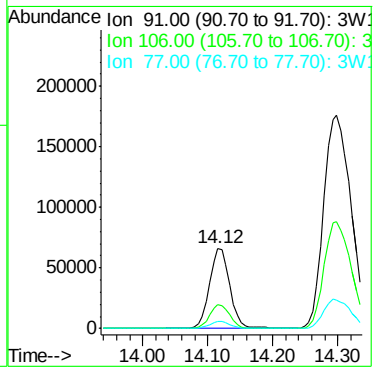


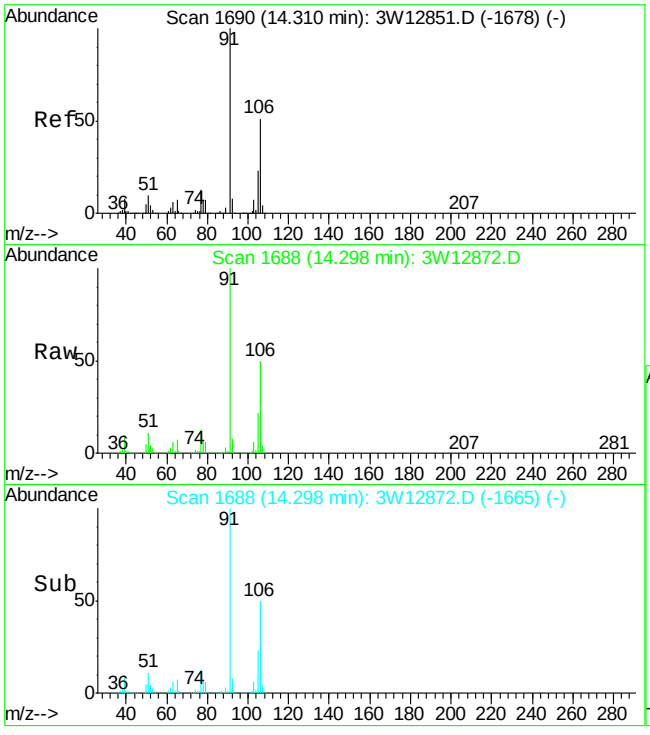


#72
ETHYLBENZENE
Concen: 3.47 PPBV
RT: 14.12 min Scan# 1658
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion: 91 Resp: 145355

Ion	Ratio	Lower	Upper
91	100		
106	29.9	11.2	51.2
77	8.8	0.0	28.7

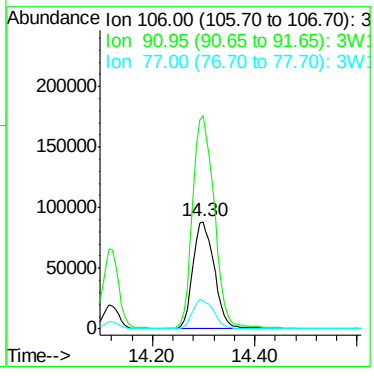


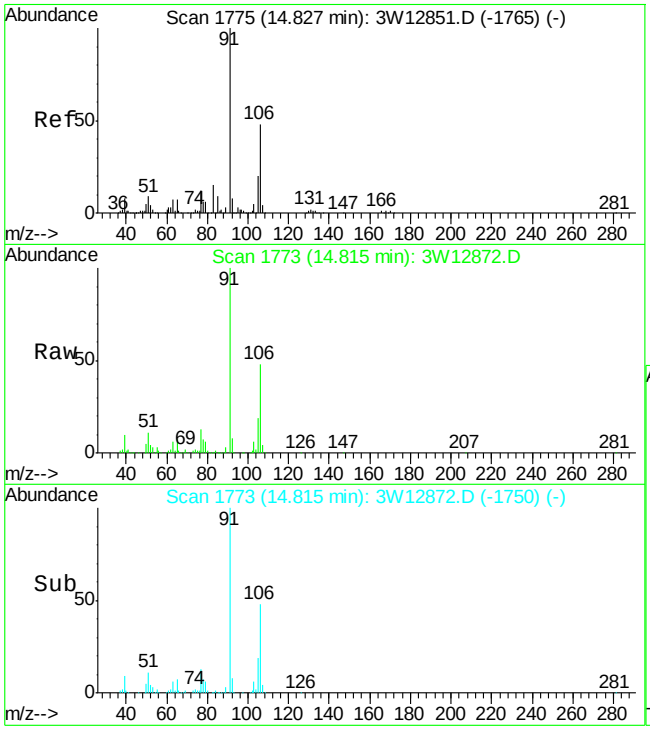


#73
m,p-XYLENE
Concen: 16.17 PPBV
RT: 14.30 min Scan# 1688
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:106 Resp: 256746

Ion	Ratio	Lower	Upper
106	100		
91	199.1	176.7	216.7
77	26.1	6.3	46.3

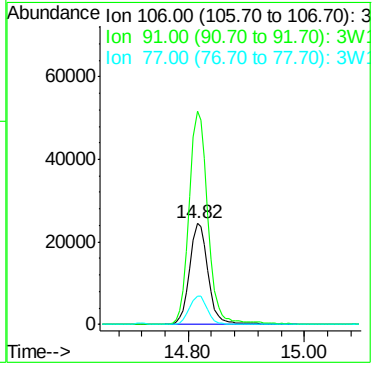


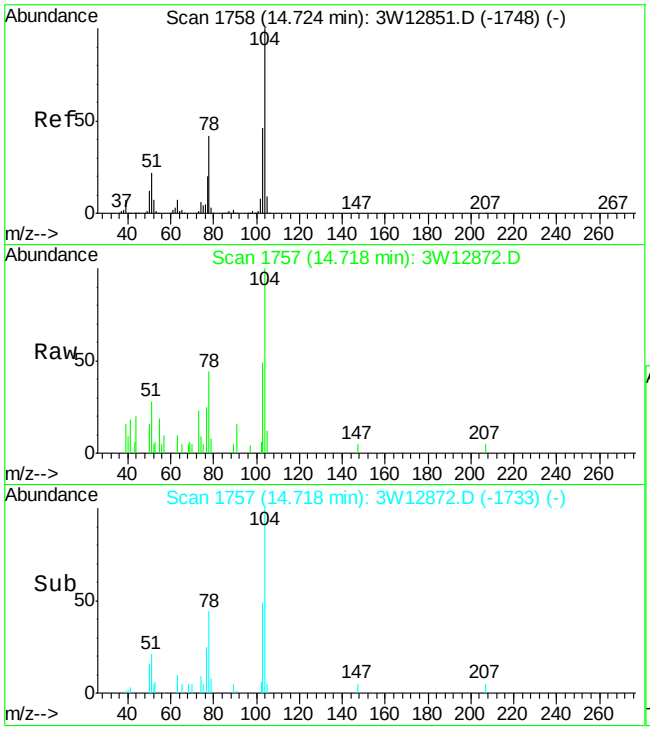


#74
o-XYLENE
Concen: 3.59 PPBV
RT: 14.82 min Scan# 1773
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:106 Resp: 54256

Ion	Ratio	Lower	Upper
106	100		
91	211.5	189.2	229.2
77	28.2	6.0	46.0

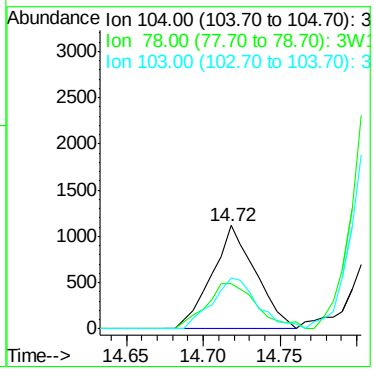


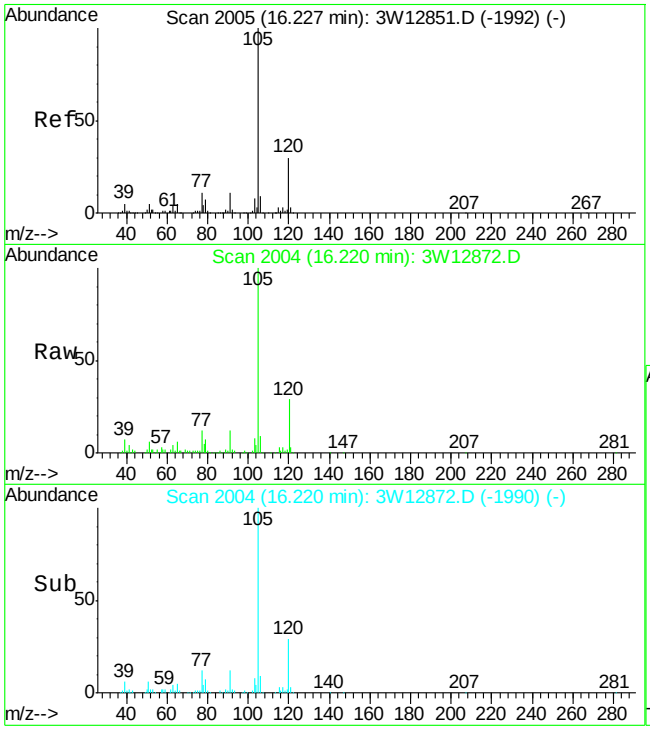


#75
STYRENE
Concen: 0.11 PPBV
RT: 14.72 min Scan# 1757
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:104 Resp: 2203

Ion	Ratio	Lower	Upper
104	100		
78	51.4	21.8	61.8
103	50.6	26.6	66.6

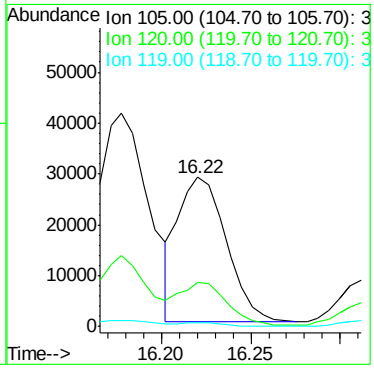


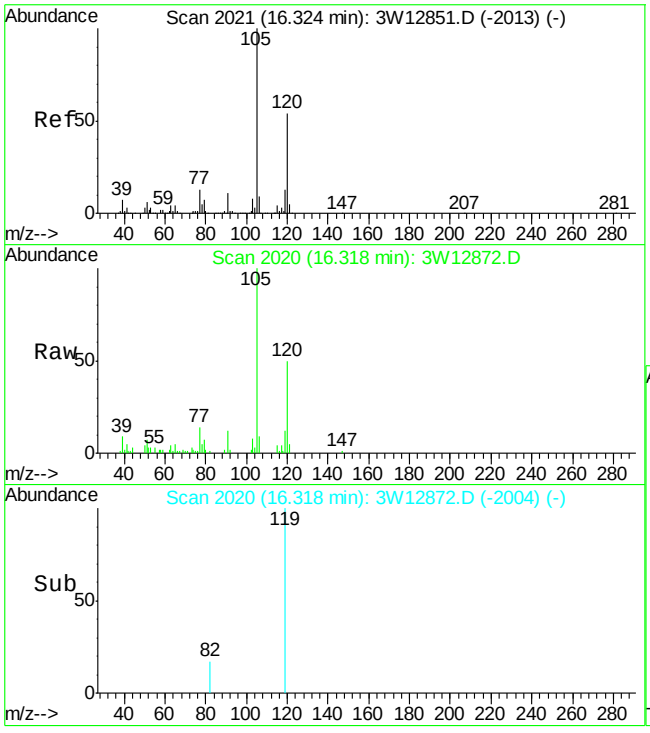


#84
4-ETHYLTOLUENE
Concen: 1.38 PPBV
RT: 16.22 min Scan# 2004
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:105 Resp: 52993

Ion	Ratio	Lower	Upper
105	100		
120	29.5	10.4	50.4
119	2.7	0.0	22.4

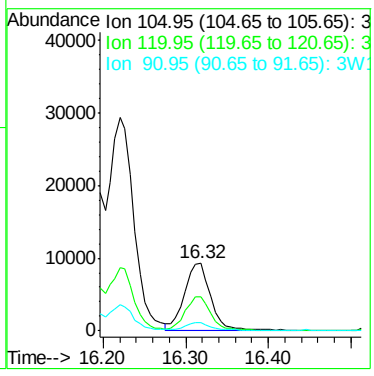


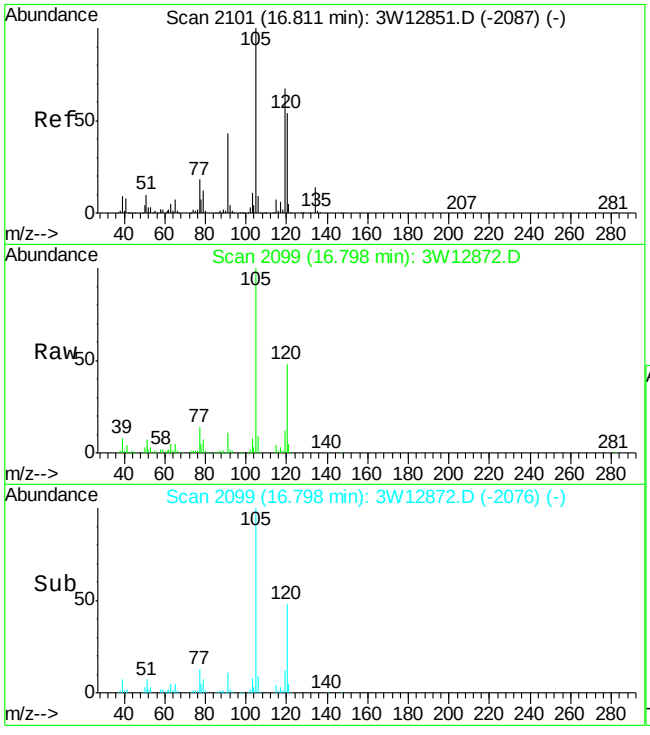


#85
1,3,5-TRIMETHYLBENZENE
Concen: 0.62 PPBV
RT: 16.32 min Scan# 2020
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:105 Resp: 20147

Ion	Ratio	Lower	Upper
105	100		
120	50.9	31.9	71.9
91	11.2	0.0	30.6

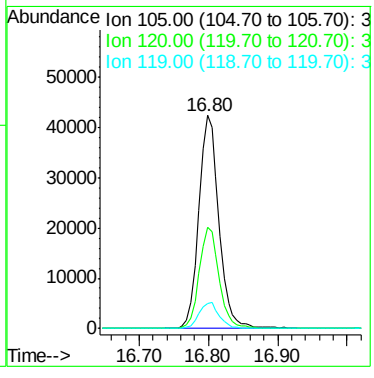




#87
1,2,4-TRIMETHYLBENZENE
Concen: 2.97 PPBV
RT: 16.80 min Scan# 2099
Delta R.T. -0.01 min
Lab File: 3W12872.D
Acq: 5 Oct 2009 1:45 pm

Tgt Ion:105 Resp: 85898

Ion	Ratio	Lower	Upper
105	100		
120	47.1	39.6	79.6
119	12.4	104.5	144.5#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12876.D Vial: 11
Acq On : 5 Oct 2009 4:25 pm Operator: YOUMINH
Sample : JA28237-2 Inst : MS3W
Misc : MS86154,V3W524,40,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:02:07 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

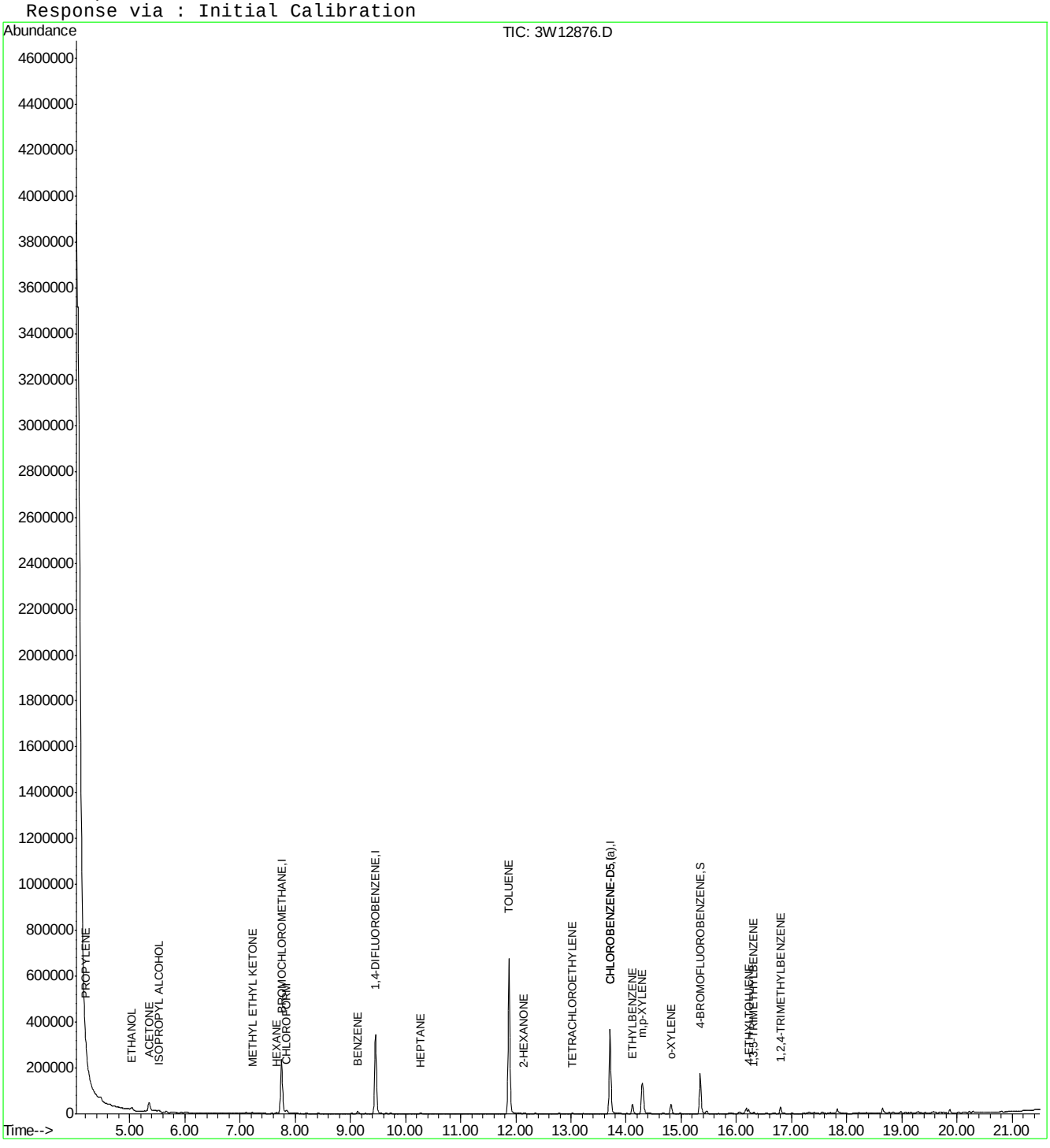
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	80057	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	344183	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	147689	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	147689	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	74255	4.79	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 95.80%			
Target Compounds						Qvalue
7) PROPYLENE	4.21	41	2740	0.24	PPBV	97
18) ISOPROPYL ALCOHOL	5.54	45	4446	0.29	PPBV	73
19) ACETONE	5.36	58	20352	4.52	PPBV	93
26) ETHANOL	5.04	45	10824	2.99	PPBV	97
35) HEXANE	7.67	57	2215	0.15	PPBV	95
38) METHYL ETHYL KETONE	7.22	72	1955	0.51	PPBV #	78
42) CHLOROFORM	7.84	83	11291	0.51	PPBV	97
48) BENZENE	9.13	78	10293	0.36	PPBV	97
56) HEPTANE	10.27	43	2281	0.14	PPBV	85
61) TOLUENE	11.88	92	364988	19.09	PPBV	99
65) 2-HEXANONE	12.15	43	2386	0.19	PPBV #	67
66) TETRACHLOROETHYLENE	13.03	164	656	0.04	PPBV	93
72) ETHYLBENZENE	14.12	91	38360	1.06	PPBV	96
73) m,p-XYLENE	14.29	106	65099	4.74	PPBV	93
74) o-XYLENE	14.82	106	13558	1.04	PPBV	93
84) 4-ETHYLTOLUENE	16.22	105	11769	0.35	PPBV	100
85) 1,3,5-TRIMETHYLBENZENE	16.31	105	4567	0.16	PPBV	97
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	19294	0.77	PPBV #	27

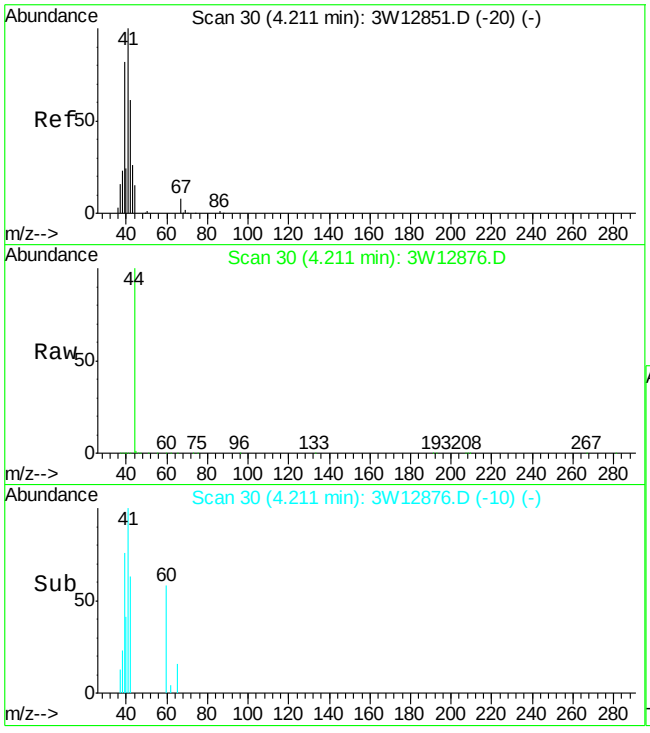
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12876.D Vial: 11
Acq On : 5 Oct 2009 4:25 pm Operator: YOUMINH
Sample : JA28237-2 Inst : MS3W
Misc : MS86154,V3W524,40,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:38 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

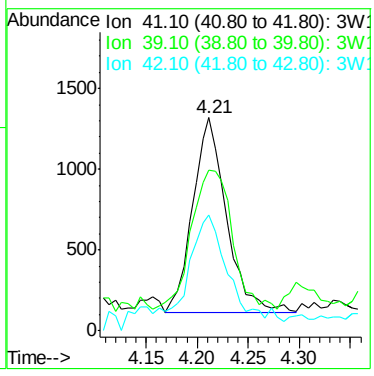


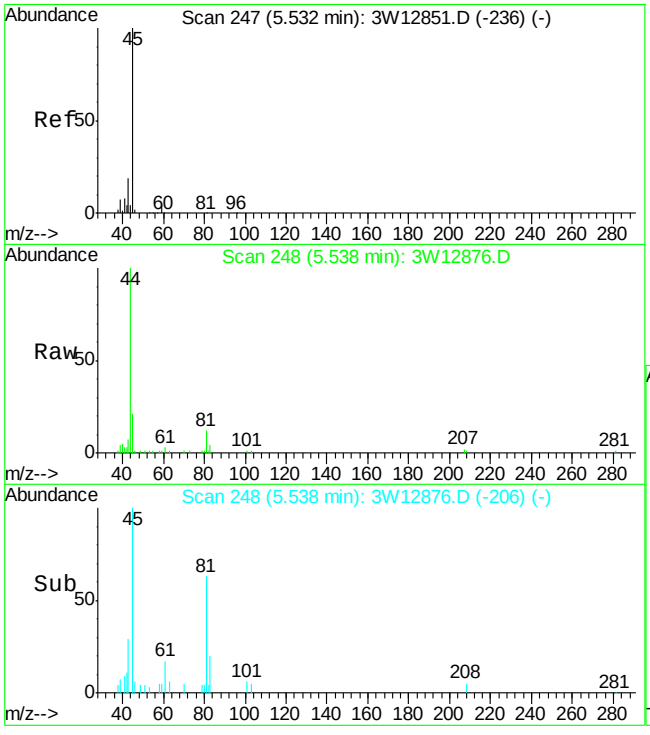


#7
PROPYLENE
Concen: 0.24 PPBV
RT: 4.21 min Scan# 30
Delta R.T. 0.00 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 41 Resp: 2740

Ion	Ratio	Lower	Upper
41	100		
39	87.2	65.9	105.9
42	64.1	40.3	80.3

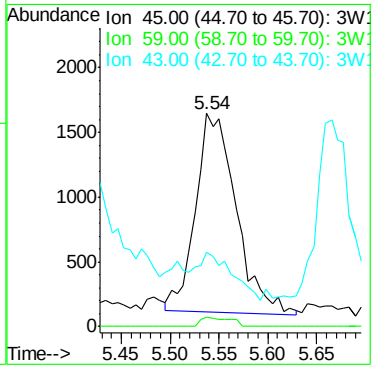


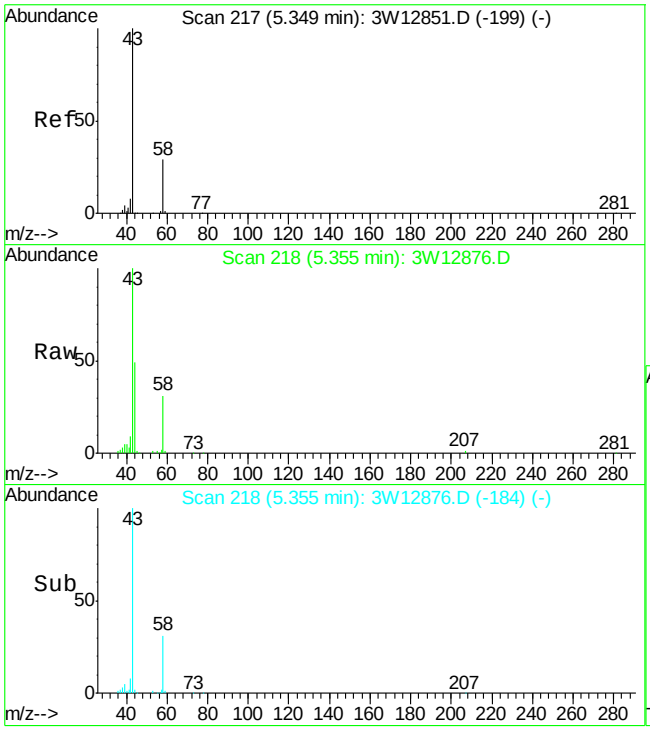


#18
ISOPROPYL ALCOHOL
Concen: 0.29 PPBV
RT: 5.54 min Scan# 248
Delta R.T. 0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 45 Resp: 4446

Ion	Ratio	Lower	Upper
45	100		
59	4.5	0.0	23.9
43	35.1	0.6	40.6

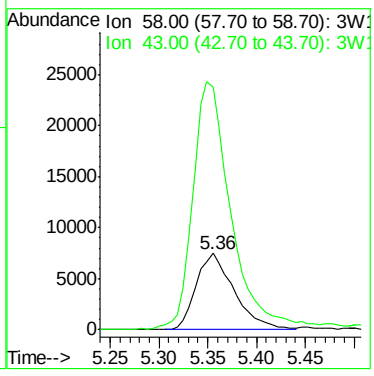


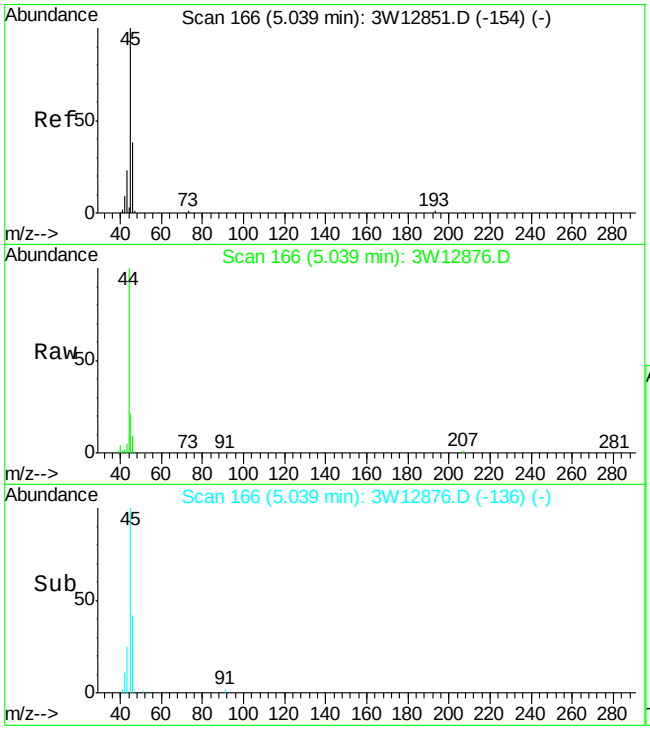


#19
ACETONE
Concen: 4.52 PPBV
RT: 5.36 min Scan# 218
Delta R.T. 0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 58 Resp: 20352

Ion	Ratio	Lower	Upper
58	100		
43	328.4	323.9	363.9

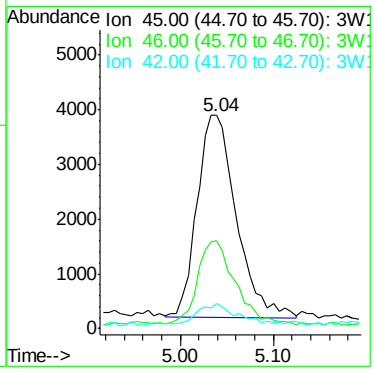


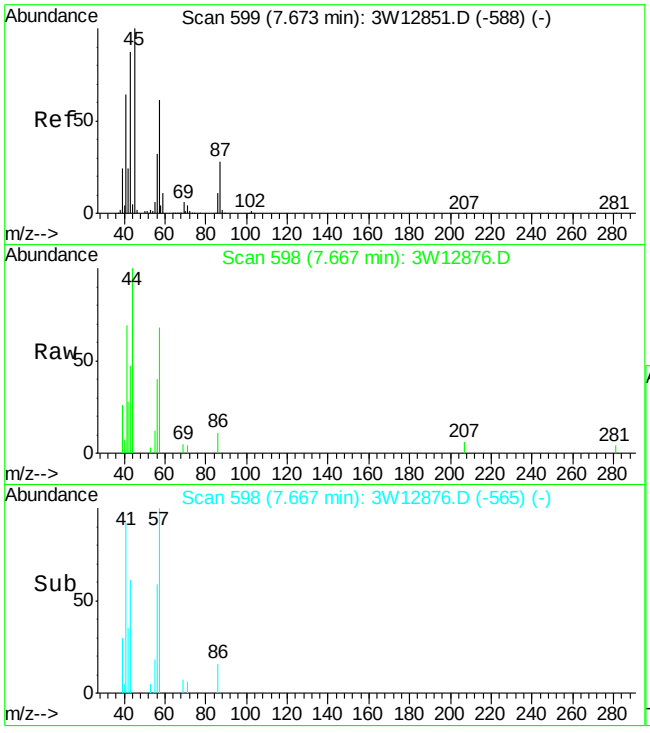


#26
ETHANOL
Concen: 2.99 PPBV
RT: 5.04 min Scan# 166
Delta R.T. 0.00 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 45 Resp: 10824

Ion	Ratio	Lower	Upper
45	100		
46	39.9	17.9	57.9
42	9.3	0.0	29.8

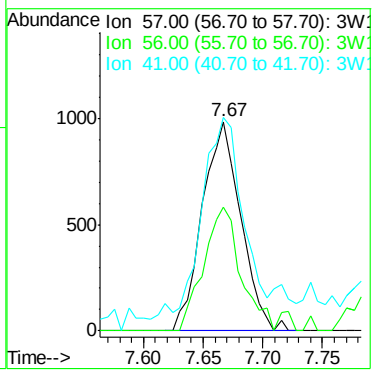


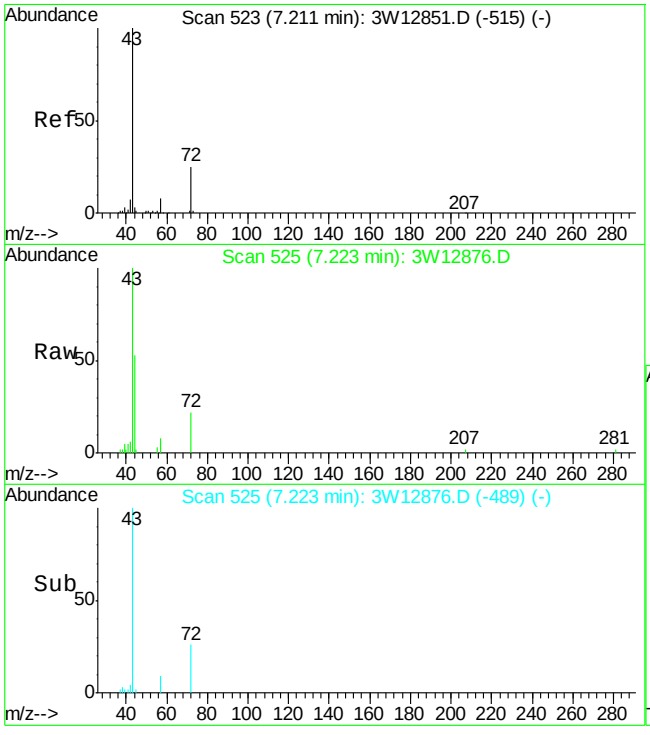


#35
HEXANE
Concen: 0.15 PPBV
RT: 7.67 min Scan# 598
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 57 Resp: 2215

Ion	Ratio	Lower	Upper
57	100		
56	57.0	32.2	72.2
41	105.3	89.9	129.9

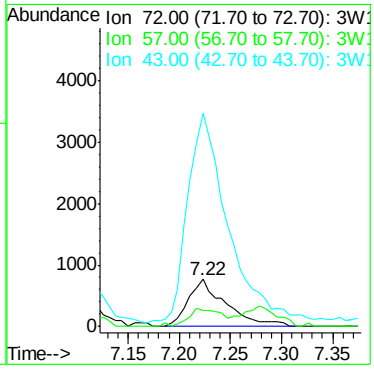


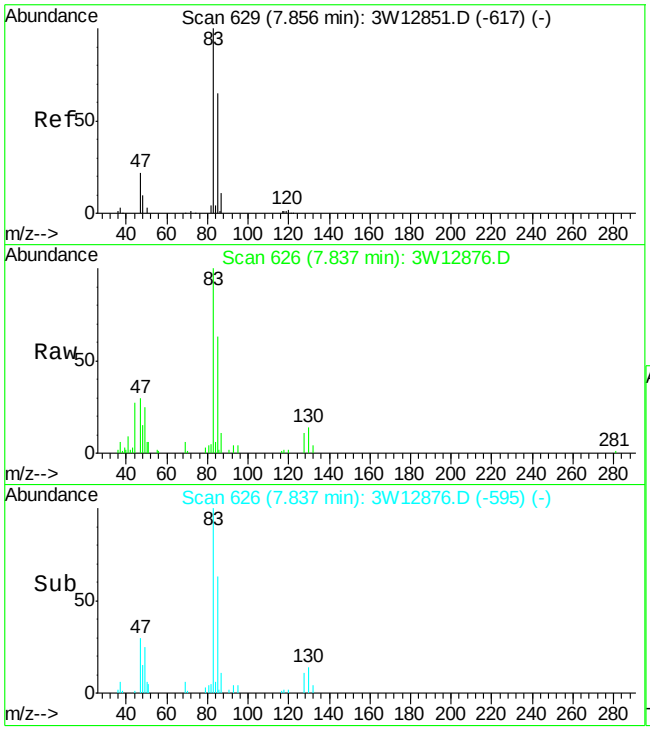


#38
METHYL ETHYL KETONE
Concen: 0.51 PPBV
RT: 7.22 min Scan# 525
Delta R.T. 0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 72 Resp: 1955

Ion	Ratio	Lower	Upper
72	100		
57	35.1	12.0	52.0
43	452.5	378.5	418.5#

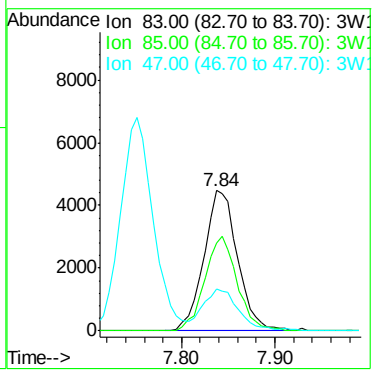


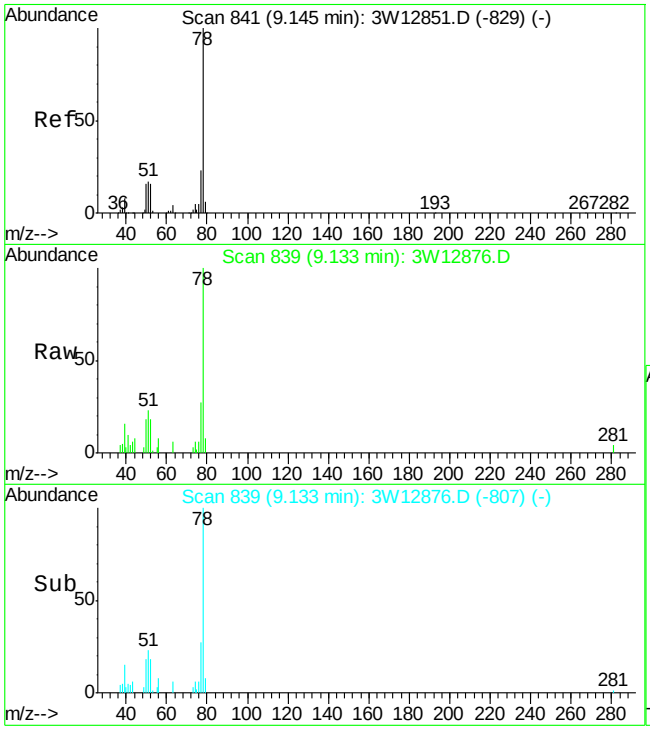


#42
CHLOROFORM
Concen: 0.51 PPBV
RT: 7.84 min Scan# 626
Delta R.T. -0.02 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 83 Resp: 11291

Ion	Ratio	Lower	Upper
83	100		
85	64.5	45.0	85.0
47	29.0	4.7	44.7

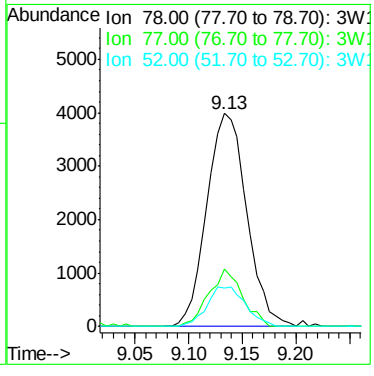


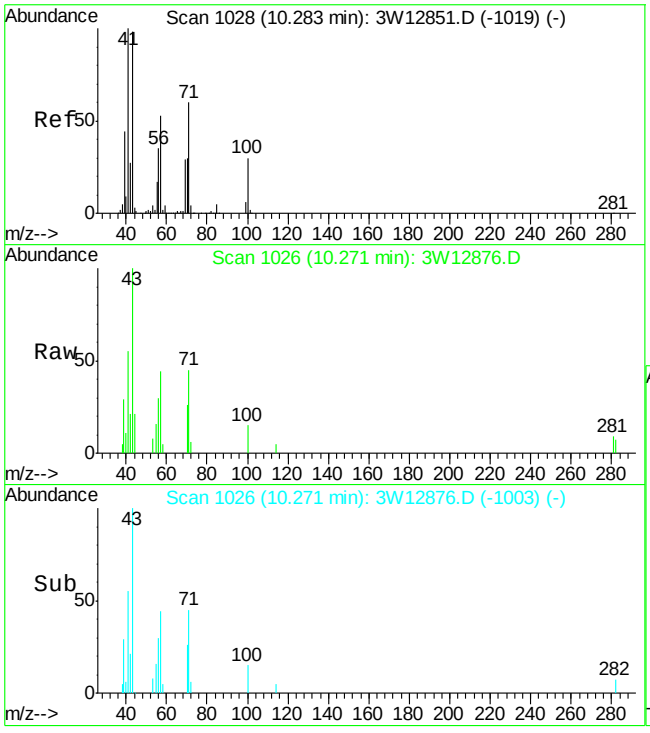


#48
BENZENE
Concen: 0.36 PPBV
RT: 9.13 min Scan# 839
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 78 Resp: 10293

Ion	Ratio	Lower	Upper
78	100		
77	22.8	3.2	43.2
52	17.9	0.0	35.8

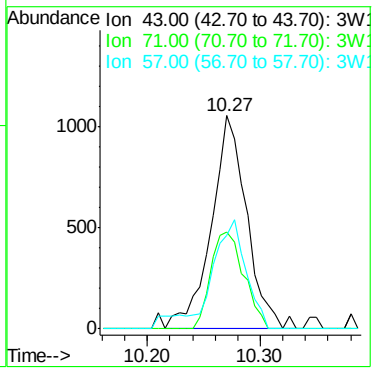


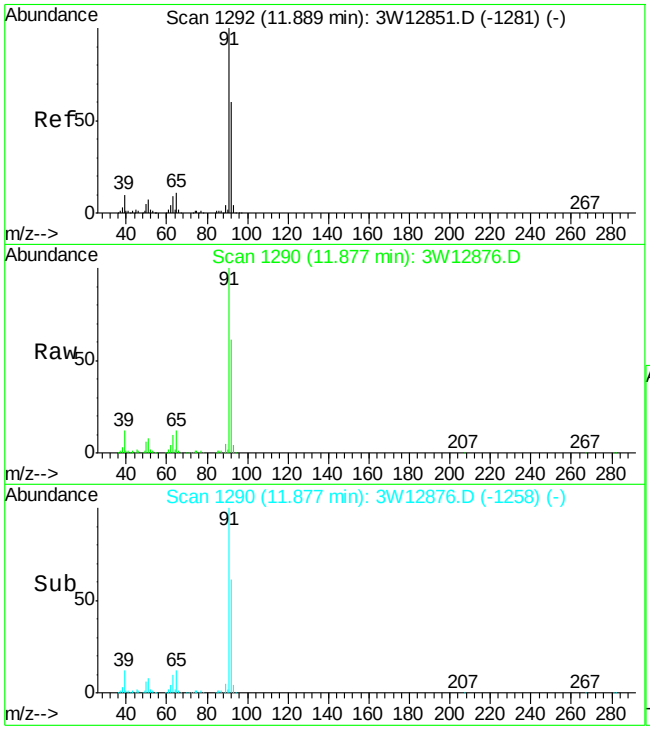


#56
HEPTANE
Concen: 0.14 PPBV
RT: 10.27 min Scan# 1026
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 43 Resp: 2281

Ion	Ratio	Lower	Upper
43	100		
71	42.4	40.7	80.7
57	51.5	34.5	74.5

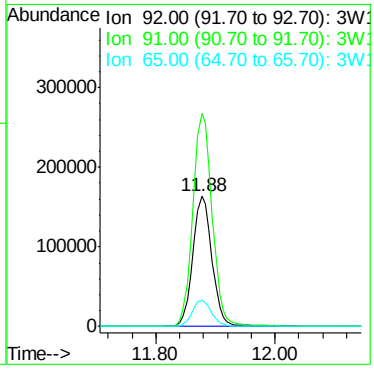


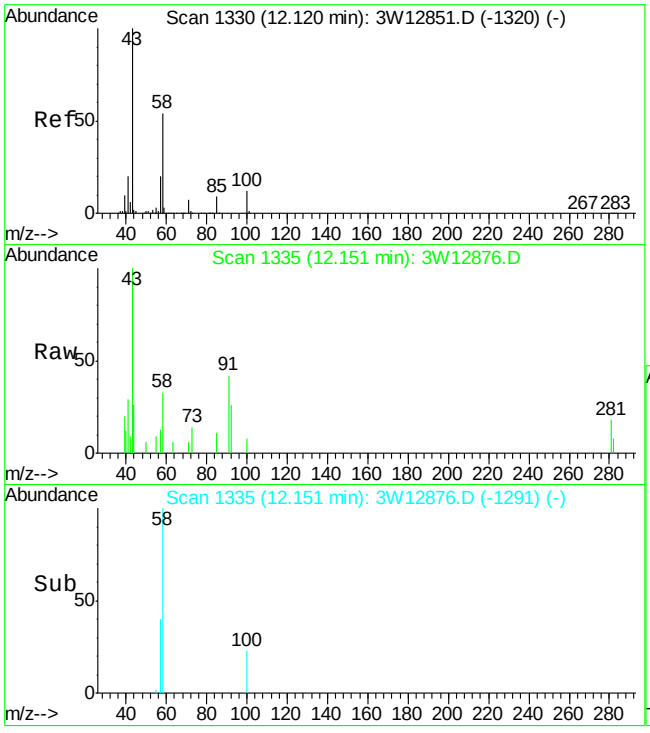


#61
TOLUENE
Concen: 19.09 PPBV
RT: 11.88 min Scan# 1290
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 92 Resp: 364988

Ion	Ratio	Lower	Upper
92	100		
91	166.3	147.6	187.6
65	20.5	0.0	39.0

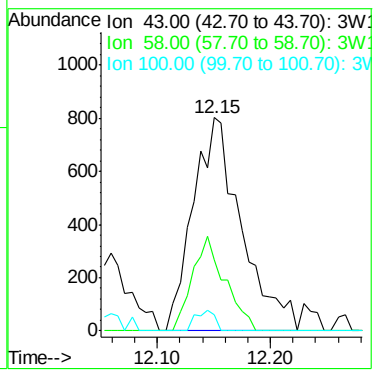


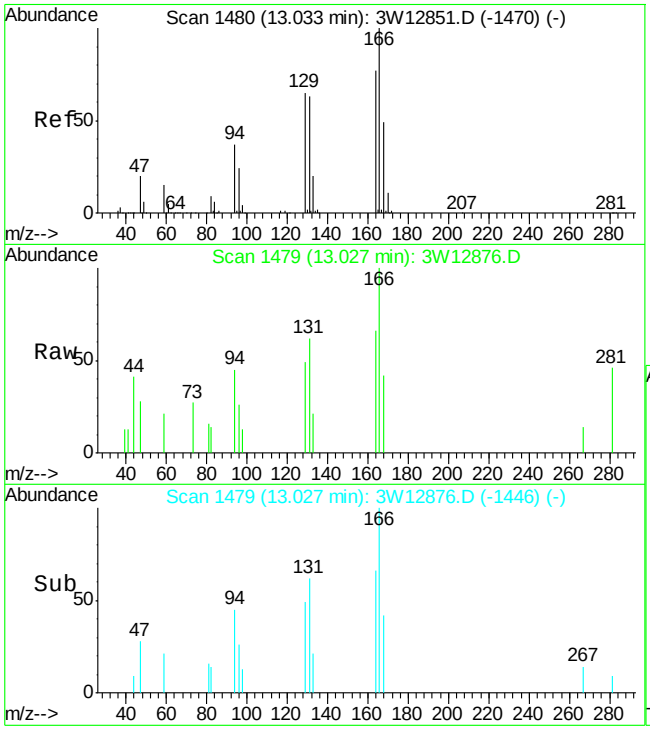


#65
2-HEXANONE
Concen: 0.19 PPBV
RT: 12.15 min Scan# 1335
Delta R.T. 0.03 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 43 Resp: 2386

Ion	Ratio	Lower	Upper
43	100		
58	30.1	34.2	74.2#
100	0.0	0.0	31.8

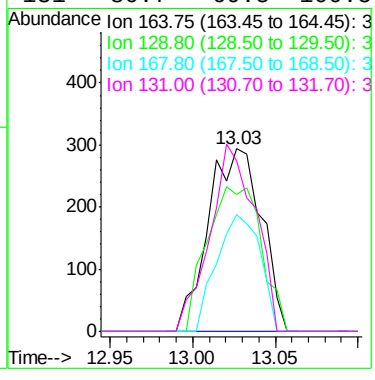


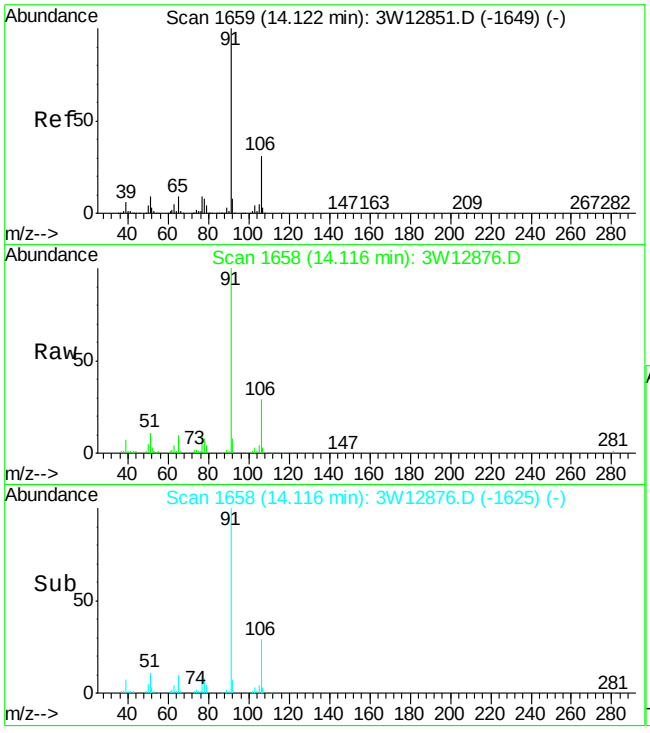


#66
TETRACHLOROETHYLENE
Concen: 0.04 PPBV
RT: 13.03 min Scan# 1479
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion:164 Resp: 656

Ion	Ratio	Lower	Upper
164	100		
129	80.9	63.0	103.0
168	52.1	43.2	83.2
131	86.7	60.5	100.5

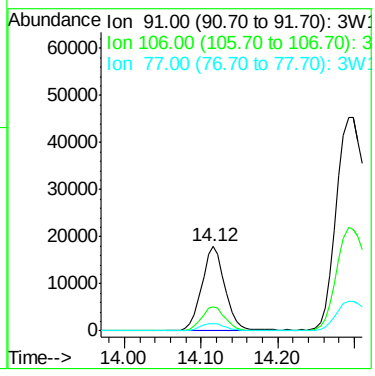


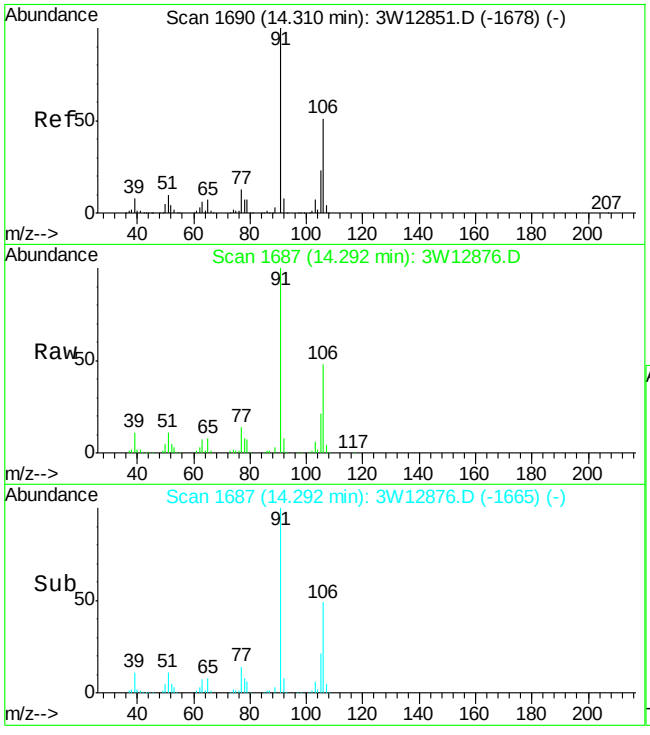


#72
ETHYLBENZENE
Concen: 1.06 PPBV
RT: 14.12 min Scan# 1658
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion: 91 Resp: 38360

Ion	Ratio	Lower	Upper
91	100		
106	28.9	11.2	51.2
77	9.1	0.0	28.7

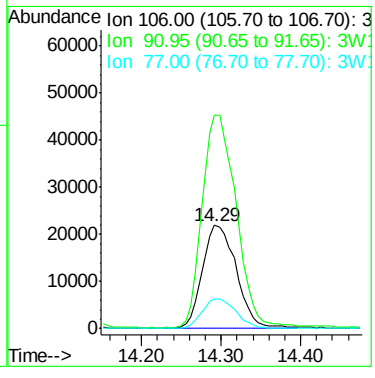


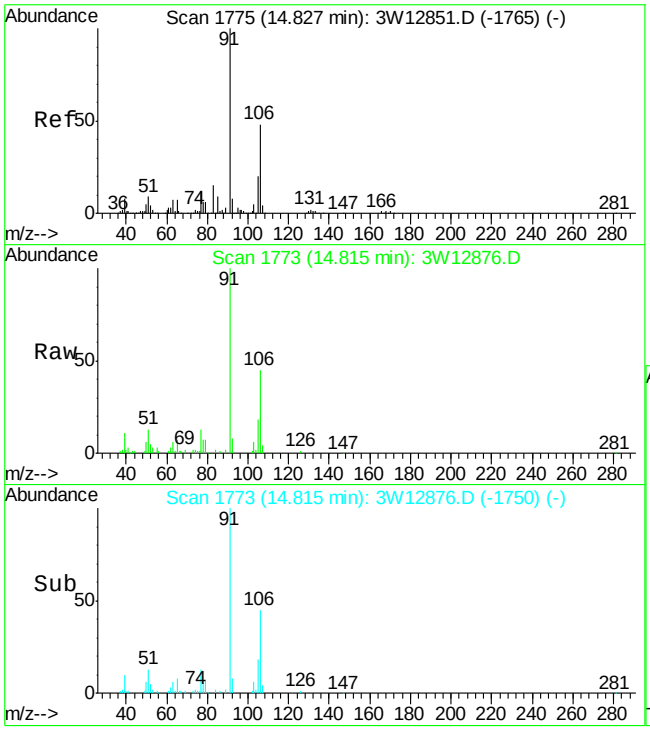


#73
m,p-XYLENE
Concen: 4.74 PPBV
RT: 14.29 min Scan# 1687
Delta R.T. -0.02 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion:106 Resp: 65099

Ion	Ratio	Lower	Upper
106	100		
91	206.8	176.7	216.7
77	28.8	6.3	46.3

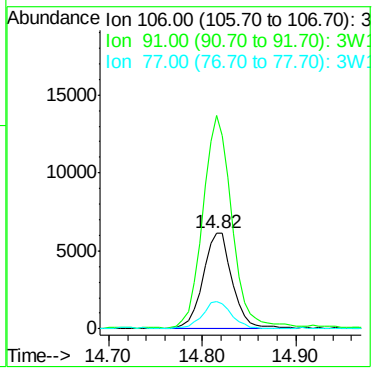


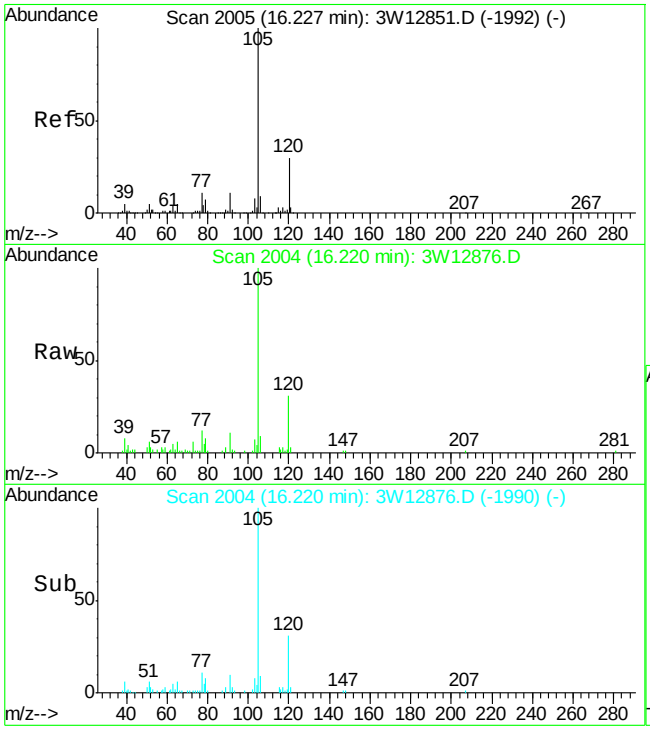


#74
o-XYLENE
Concen: 1.04 PPBV
RT: 14.82 min Scan# 1773
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion:106 Resp: 13558

Ion	Ratio	Lower	Upper
106	100		
91	220.9	189.2	229.2
77	28.9	6.0	46.0

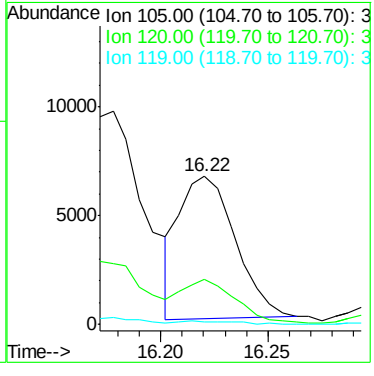


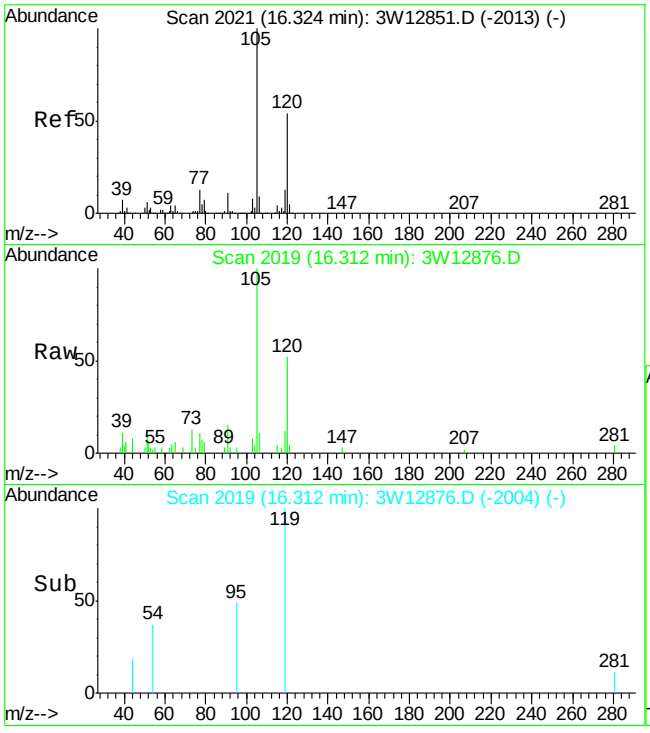


#84
4-ETHYLTOLUENE
Concen: 0.35 PPBV
RT: 16.22 min Scan# 2004
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion:105 Resp: 11769

Ion	Ratio	Lower	Upper
105	100		
120	30.3	10.4	50.4
119	2.7	0.0	22.4

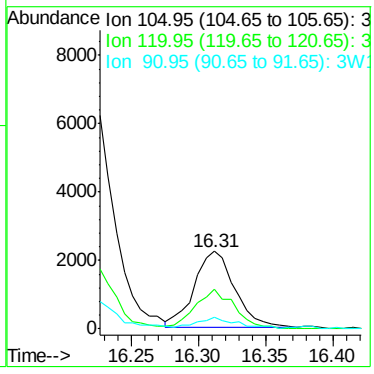


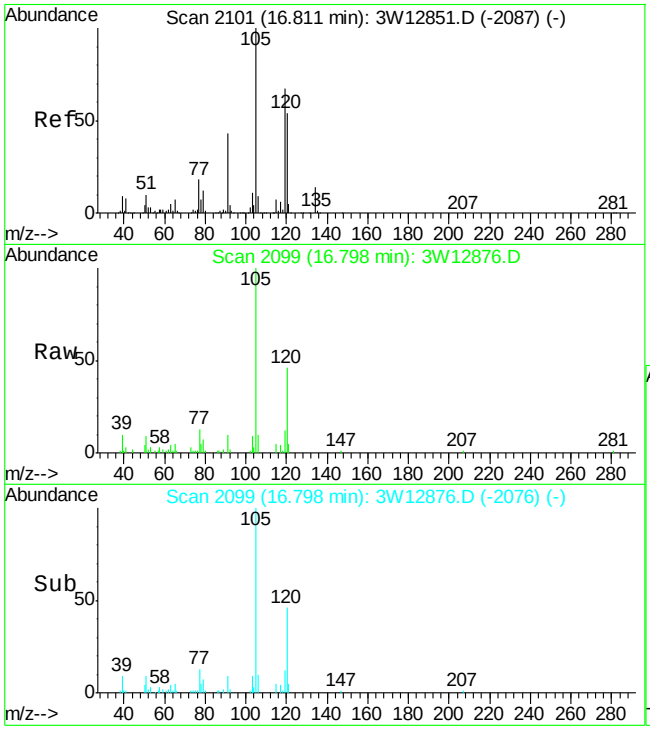


#85
1,3,5-TRIMETHYLBENZENE
Concen: 0.16 PPBV
RT: 16.31 min Scan# 2019
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion:105 Resp: 4567

Ion	Ratio	Lower	Upper
105	100		
120	51.6	31.9	71.9
91	15.3	0.0	30.6

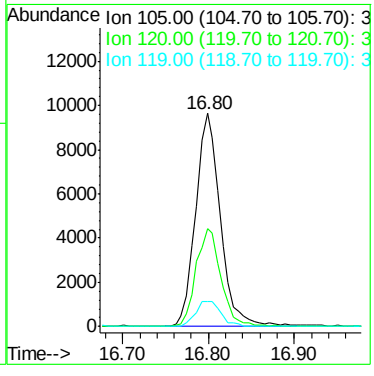




#87
1,2,4-TRIMETHYLBENZENE
Concen: 0.77 PPBV
RT: 16.80 min Scan# 2099
Delta R.T. -0.01 min
Lab File: 3W12876.D
Acq: 5 Oct 2009 4:25 pm

Tgt Ion:105 Resp: 19294

Ion	Ratio	Lower	Upper
105	100		
120	46.3	39.6	79.6
119	12.1	104.5	144.5#



Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 10/08/09 11:15

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12873.D Vial: 8
Acq On : 5 Oct 2009 2:25 pm Operator: YOUMINH
Sample : JA28237-3 Inst : MS3W
Misc : MS86154,V3W524,100,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:02:02 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

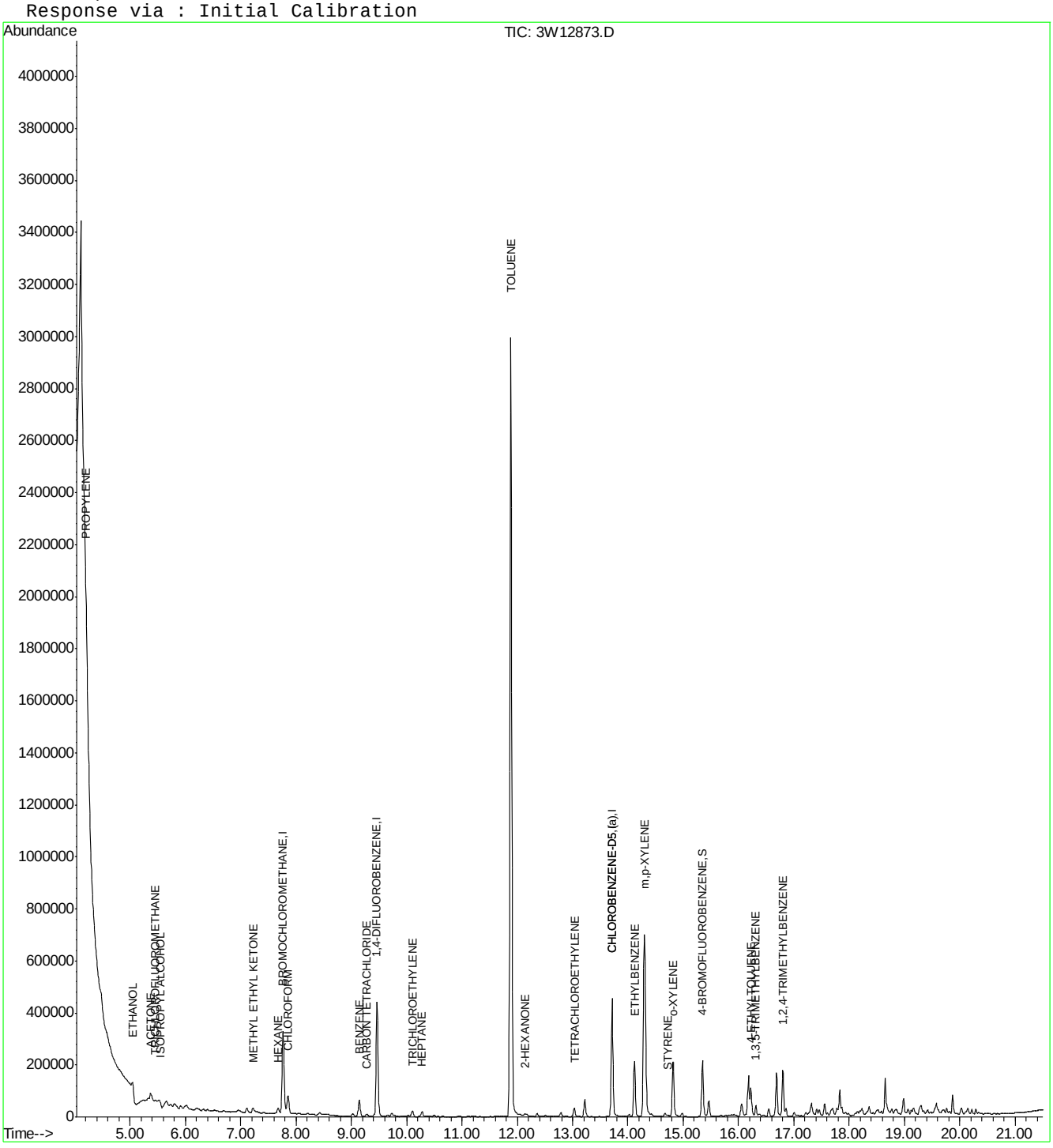
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.77	128	111469	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.47	114	457441	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	177168	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	177168	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	92625	4.98	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 99.60%			
Target Compounds						Qvalue
7) PROPYLENE	4.21	41	3646	0.23	PPBV	92
17) TRICHLOROFLUOROMETHANE	5.46	101	5967	0.13	PPBV	99
18) ISOPROPYL ALCOHOL	5.56	45	6776	0.32	PPBV	99
19) ACETONE	5.38	58	22947	3.66	PPBV #	29
26) ETHANOL	5.05	45	21480m	4.26	PPBV	
35) HEXANE	7.68	57	11318	0.56	PPBV	88
38) METHYL ETHYL KETONE	7.22	72	8309	1.56	PPBV	92
42) CHLOROFORM	7.86	83	57926	1.88	PPBV	98
45) CARBON TETRACHLORIDE	9.27	117	6558	0.19	PPBV	99
48) BENZENE	9.15	78	66551	1.74	PPBV	99
51) TRICHLOROETHYLENE	10.11	95	7501	0.43	PPBV	96
56) HEPTANE	10.28	43	10280	0.46	PPBV	89
61) TOLUENE	11.88	92	1761296	69.32	PPBV	94
65) 2-HEXANONE	12.14	43	9642	0.63	PPBV	80
66) TETRACHLOROETHYLENE	13.03	164	9892	0.53	PPBV	97
72) ETHYLBENZENE	14.12	91	198338	4.56	PPBV	99
73) m,p-XYLENE	14.30	106	356905	21.67	PPBV	98
74) o-XYLENE	14.82	106	75809	4.84	PPBV	98
75) STYRENE	14.72	104	2989	0.15	PPBV	99
84) 4-ETHYLTOLUENE	16.22	105	76576	1.93	PPBV	97
85) 1,3,5-TRIMETHYLBENZENE	16.31	105	29676	0.89	PPBV	99
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	121271	4.05	PPBV #	28

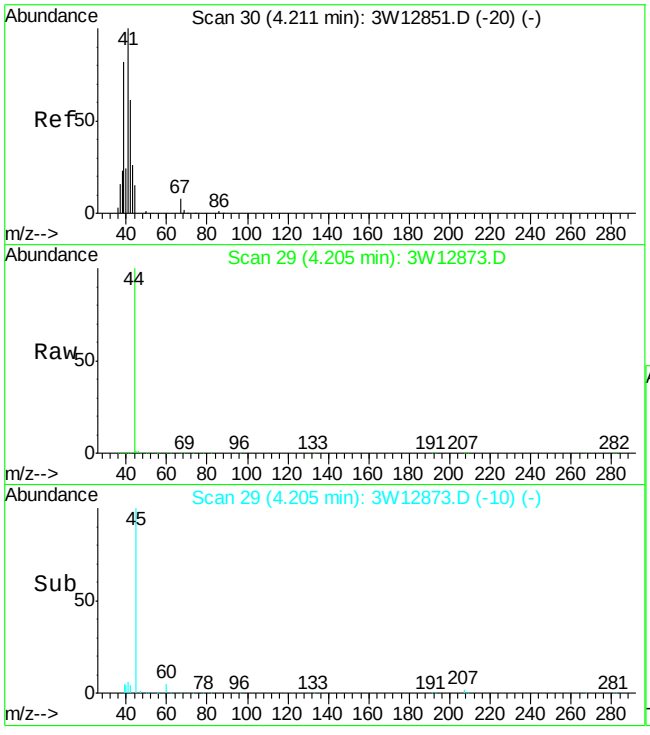
(#) = qualifier out of range (m) = manual integration (+) = signals summed
3W12873.D M3W523.M Thu Oct 08 11:11:19 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12873.D Vial: 8
Acq On : 5 Oct 2009 2:25 pm Operator: YOUMINH
Sample : JA28237-3 Inst : MS3W
Misc : MS86154,V3W524,100,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 8 11:11 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

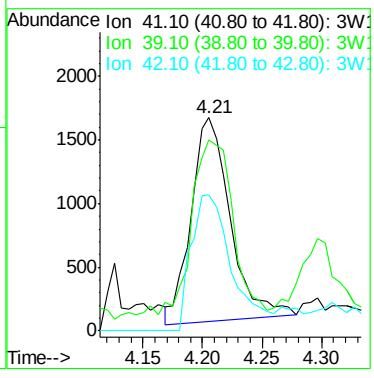


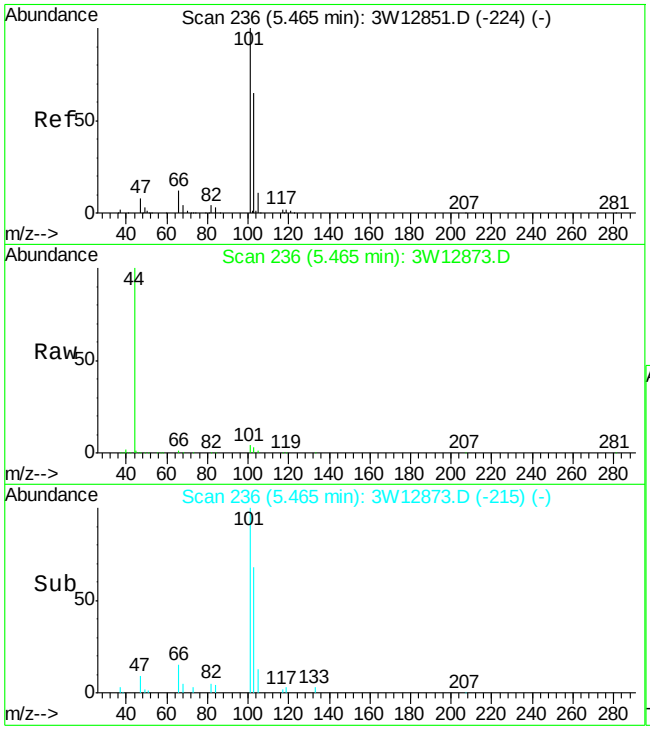


#7
PROPYLENE
Concen: 0.23 PPBV
RT: 4.21 min Scan# 29
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 41 Resp: 3646

Ion	Ratio	Lower	Upper
41	100		
39	90.1	65.9	105.9
42	70.0	40.3	80.3

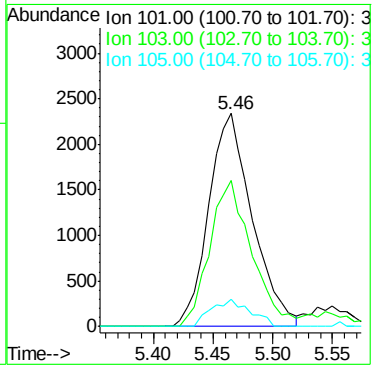


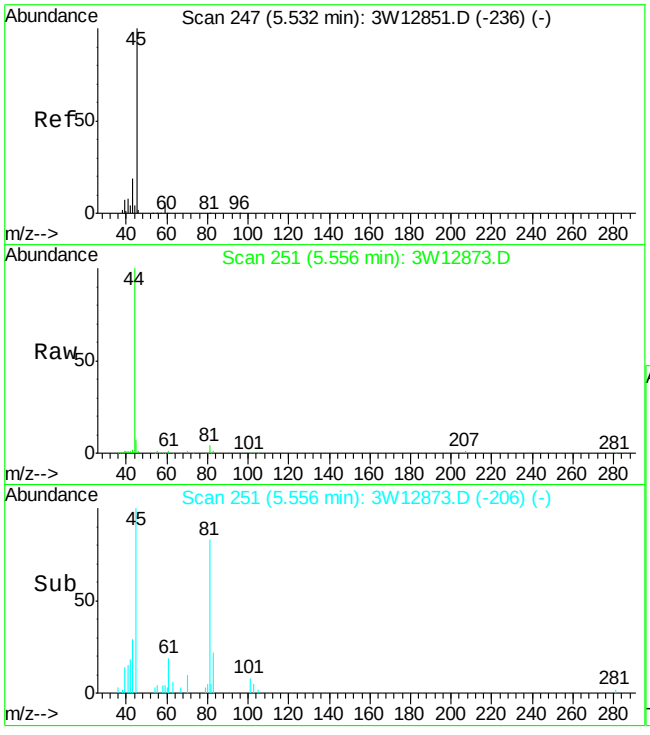


#17
TRICHLOROFLUOROMETHANE
Concen: 0.13 PPBV
RT: 5.46 min Scan# 236
Delta R.T. 0.00 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:101 Resp: 5967

Ion	Ratio	Lower	Upper
101	100		
103	65.9	45.3	85.3
105	11.5	0.0	30.7

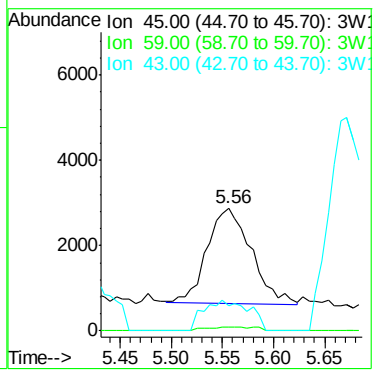


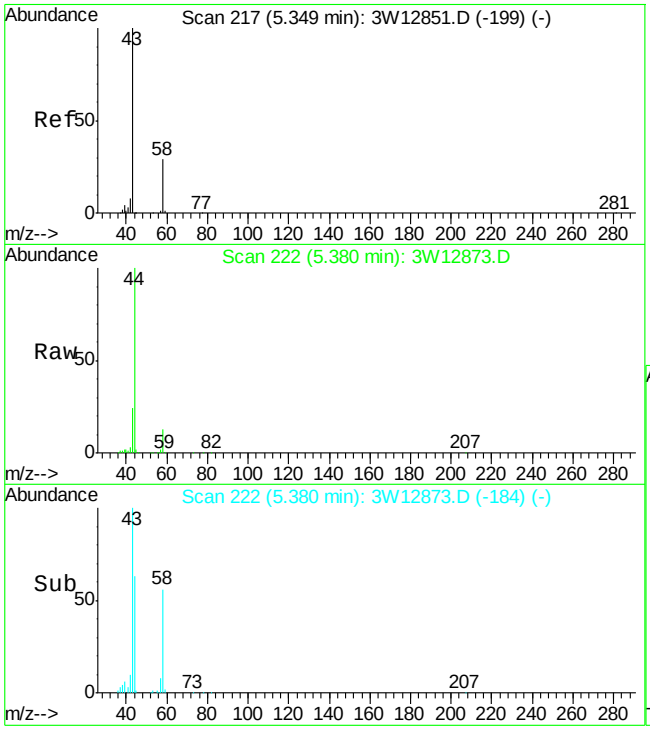


#18
ISOPROPYL ALCOHOL
Concen: 0.32 PPBV
RT: 5.56 min Scan# 251
Delta R.T. 0.02 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 45 Resp: 6776

Ion	Ratio	Lower	Upper
45	100		
59	2.7	0.0	23.9
43	20.7	0.6	40.6

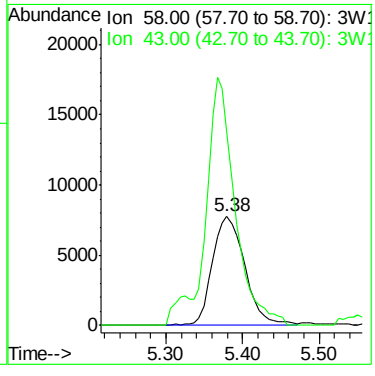


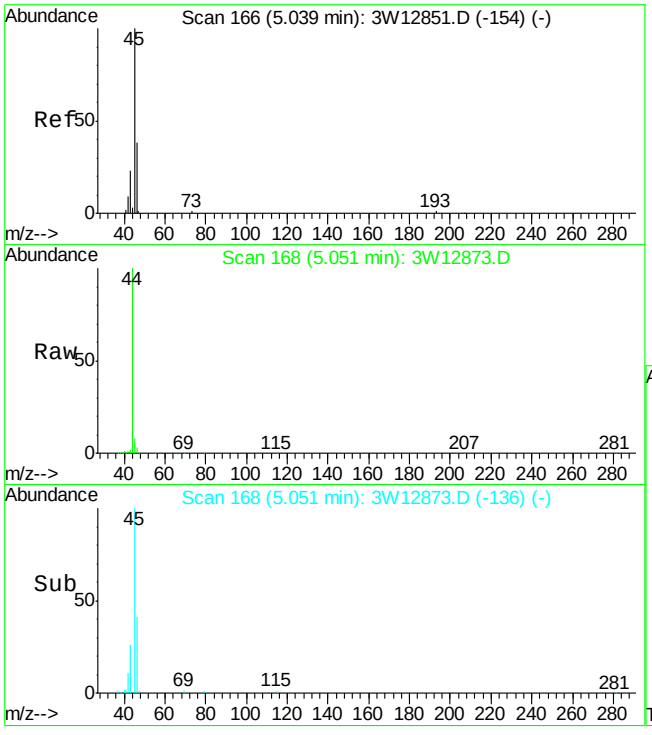


#19
ACETONE
Concen: 3.66 PPBV
RT: 5.38 min Scan# 222
Delta R.T. 0.03 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 58 Resp: 22947

Ion	Ratio	Lower	Upper
58	100		
43	191.7	323.9	363.9#

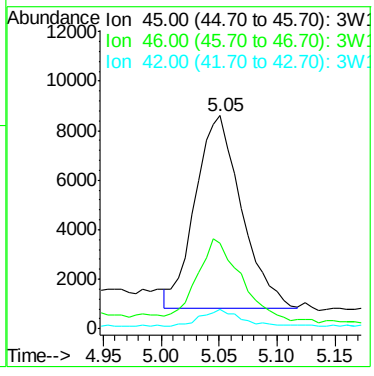


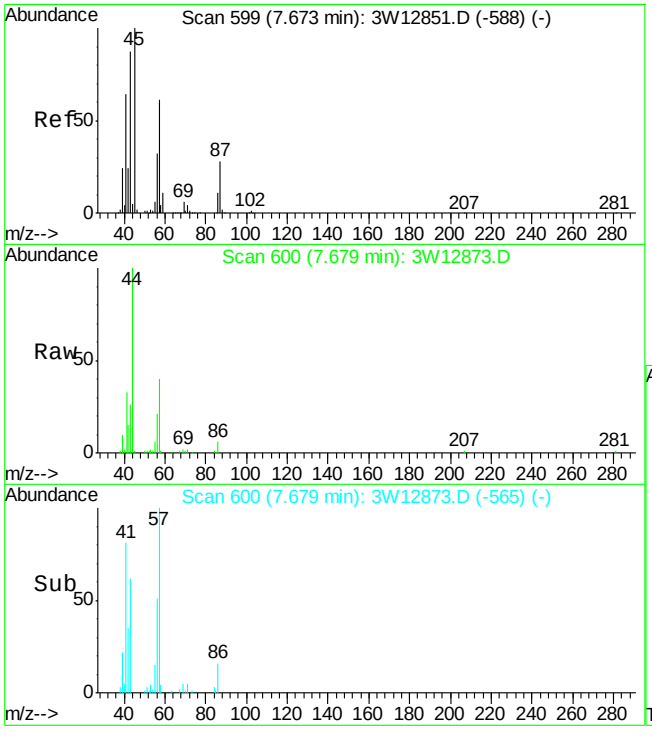


#26
ETHANOL
Concen: 4.26 PPBV m
RT: 5.05 min Scan# 168
Delta R.T. 0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 45 Resp: 21480

Ion	Ratio	Lower	Upper
45	100		
46	0.0	17.9	57.9#
42	0.0	0.0	29.8

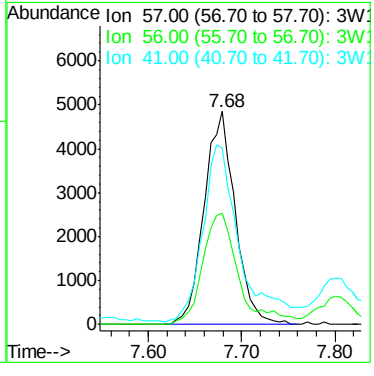


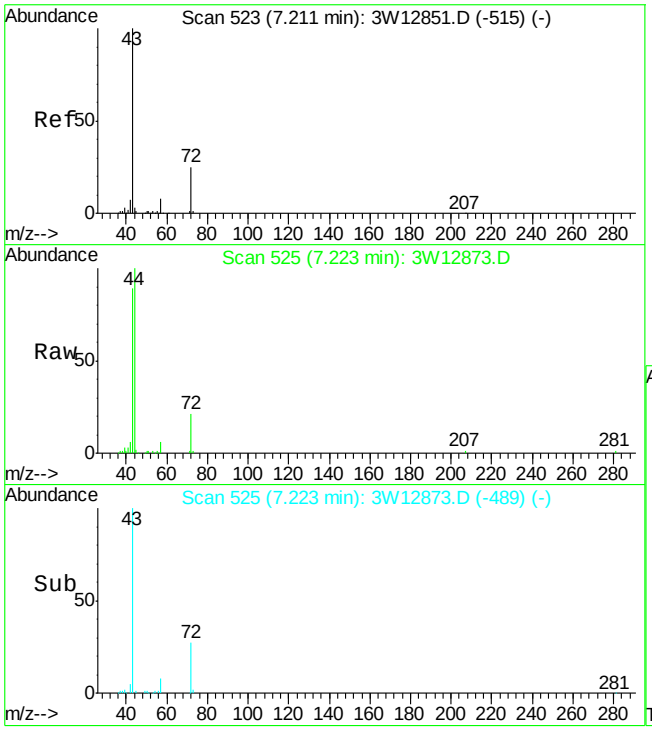


#35
HEXANE
Concen: 0.56 PPBV
RT: 7.68 min Scan# 600
Delta R.T. 0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 57 Resp: 11318

Ion	Ratio	Lower	Upper
57	100		
56	60.8	32.2	72.2
41	97.5	89.9	129.9

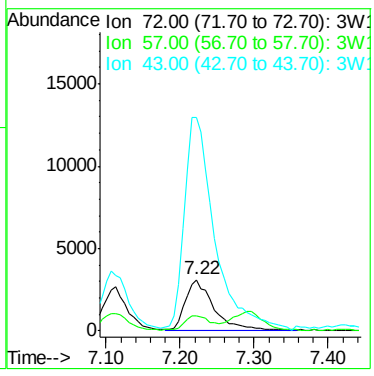


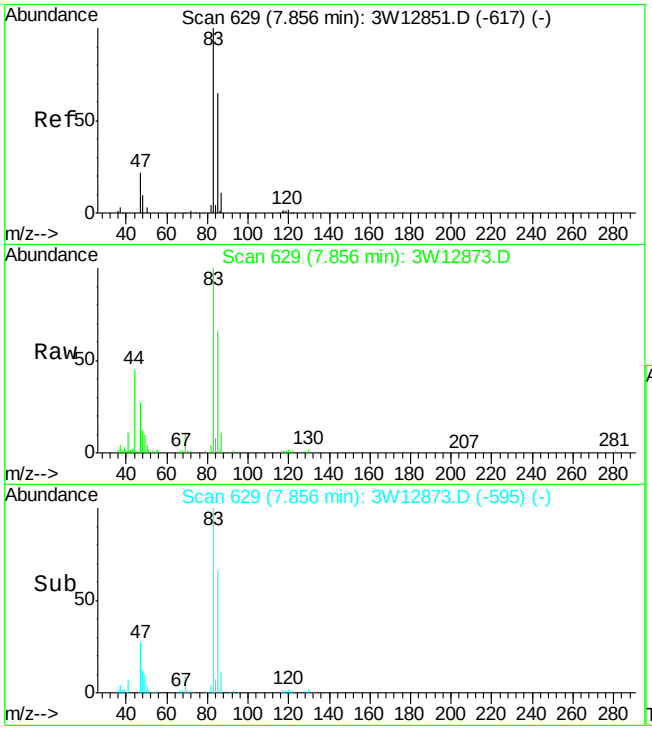


#38
METHYL ETHYL KETONE
Concen: 1.56 PPBV
RT: 7.22 min Scan# 525
Delta R.T. 0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 72 Resp: 8309

Ion	Ratio	Lower	Upper
72	100		
57	30.0	12.0	52.0
43	417.5	378.5	418.5

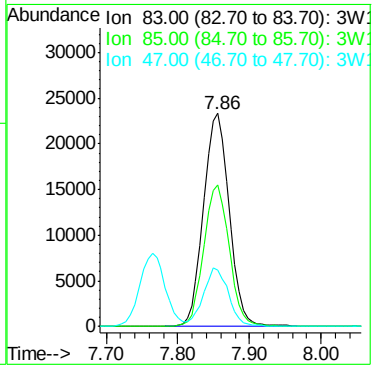


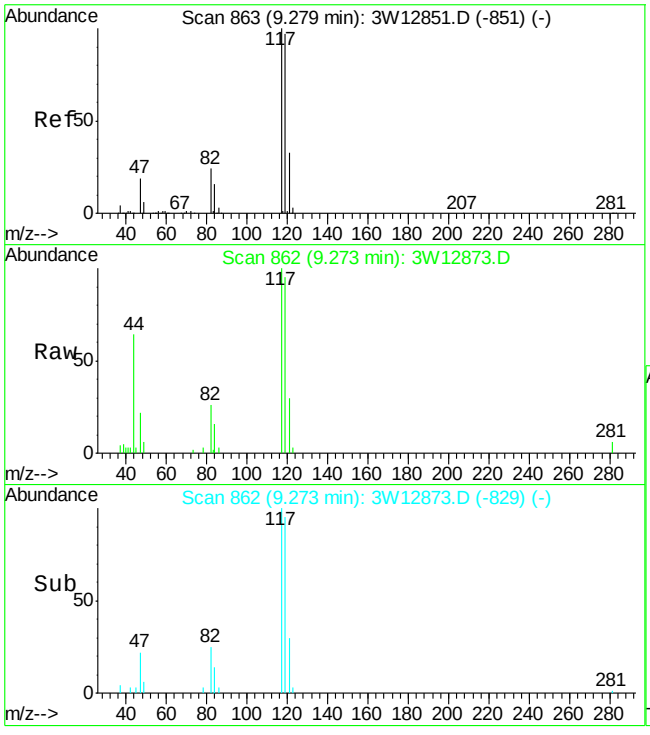


#42
CHLOROFORM
Concen: 1.88 PPBV
RT: 7.86 min Scan# 629
Delta R.T. 0.00 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 83 Resp: 57926

Ion	Ratio	Lower	Upper
83	100		
85	66.1	45.0	85.0
47	27.0	4.7	44.7

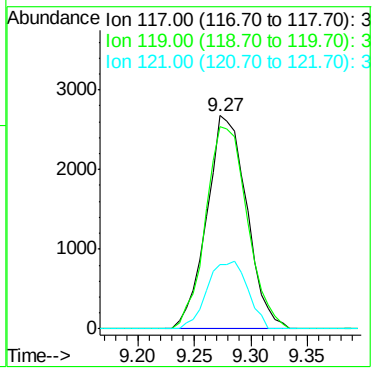


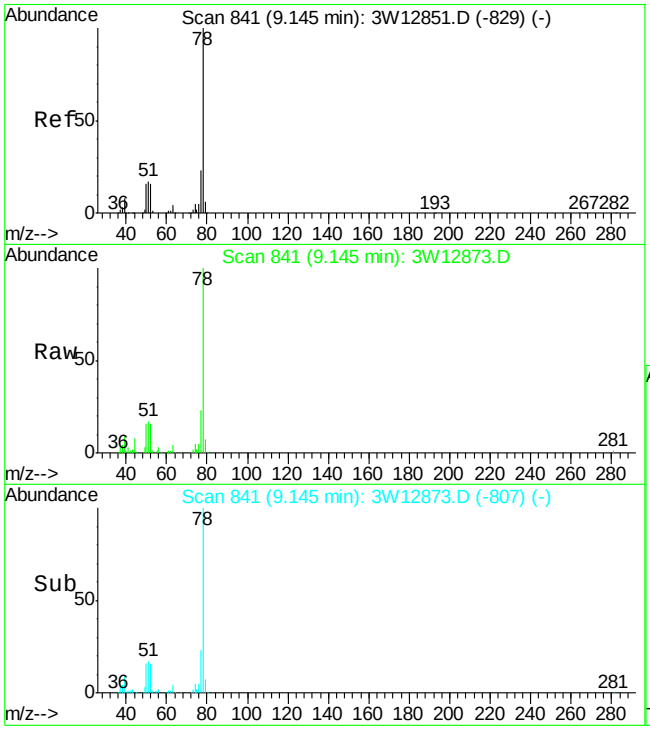


#45
CARBON TETRACHLORIDE
Concen: 0.19 PPBV
RT: 9.27 min Scan# 862
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:117 Resp: 6558

Ion	Ratio	Lower	Upper
117	100		
119	98.7	77.2	117.2
121	32.0	11.6	51.6

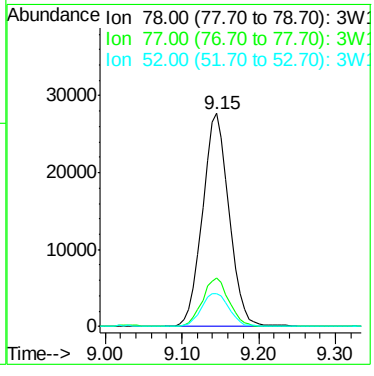


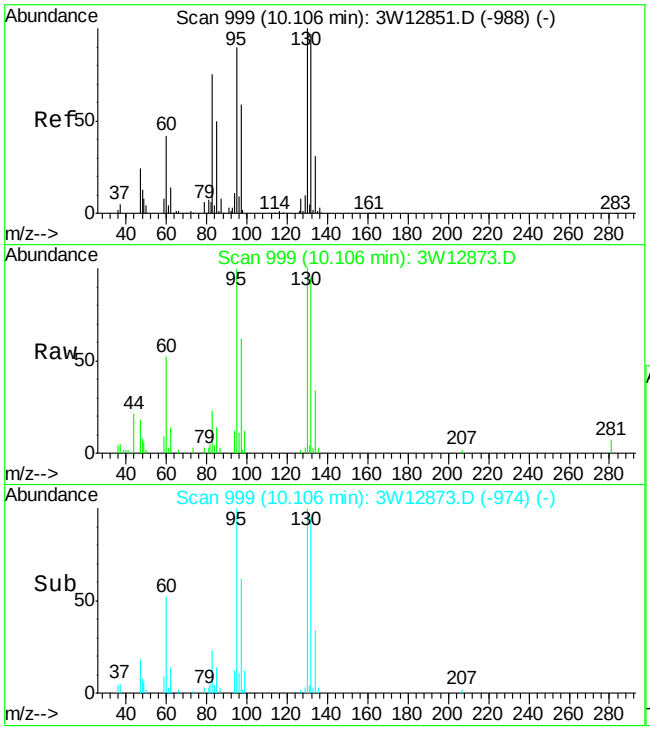


#48
BENZENE
Concen: 1.74 PPBV
RT: 9.15 min Scan# 841
Delta R.T. 0.00 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 78 Resp: 66551

Ion	Ratio	Lower	Upper
78	100		
77	22.9	3.2	43.2
52	16.4	0.0	35.8

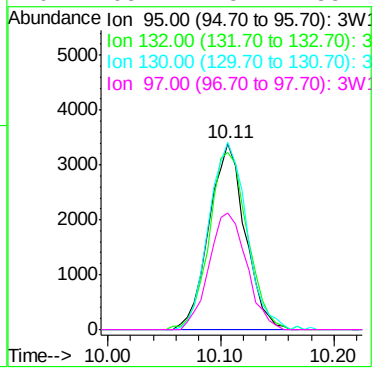


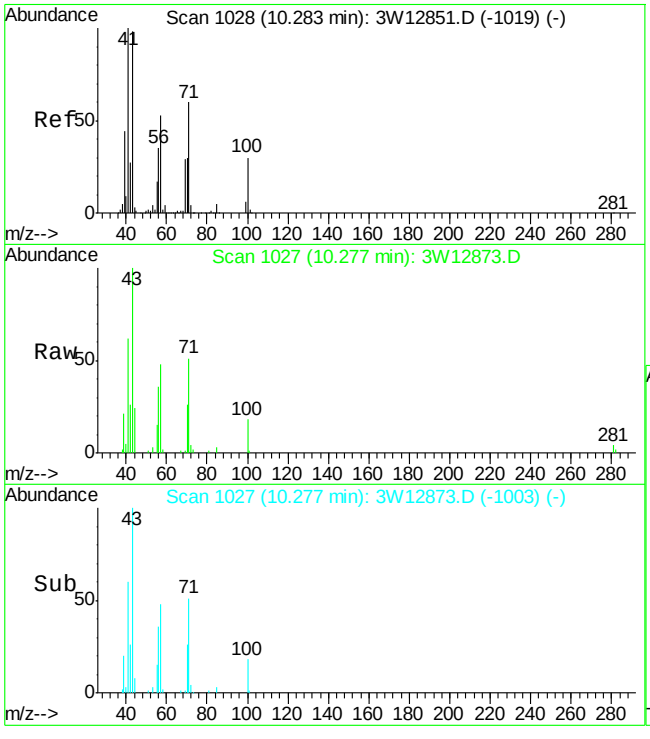


#51
TRICHLOROETHYLENE
Concen: 0.43 PPBV
RT: 10.11 min Scan# 999
Delta R.T. 0.00 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 95 Resp: 7501

Ion	Ratio	Lower	Upper
95	100		
132	100.9	86.9	126.9
130	105.5	89.9	129.9
97	65.4	45.4	85.4

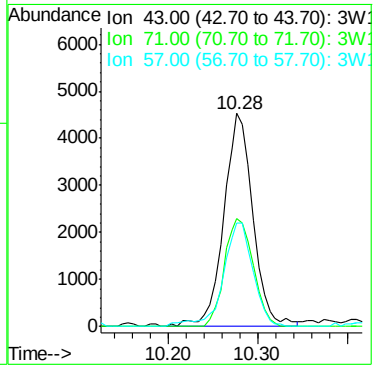


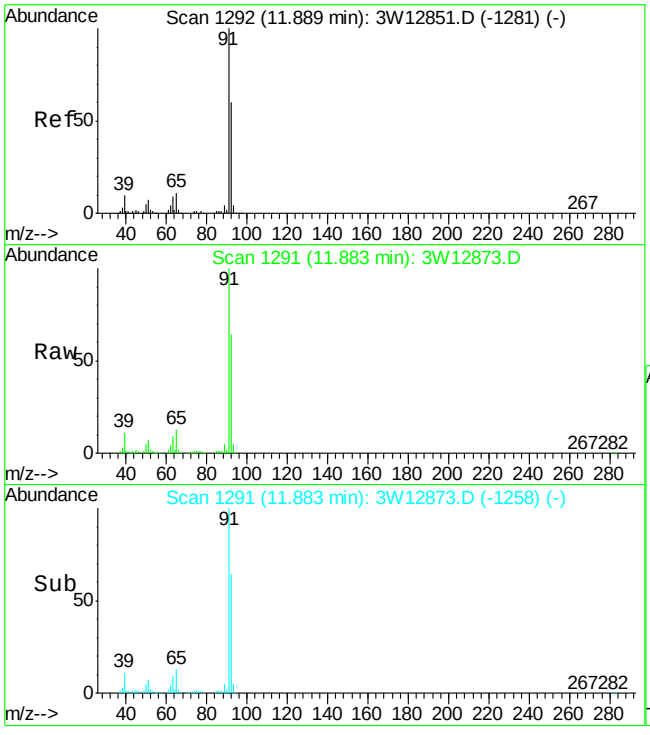


#56
HEPTANE
Concen: 0.46 PPBV
RT: 10.28 min Scan# 1027
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 43 Resp: 10280

Ion	Ratio	Lower	Upper
43	100		
71	49.7	40.7	80.7
57	50.0	34.5	74.5

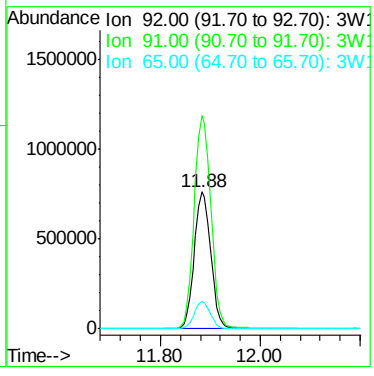


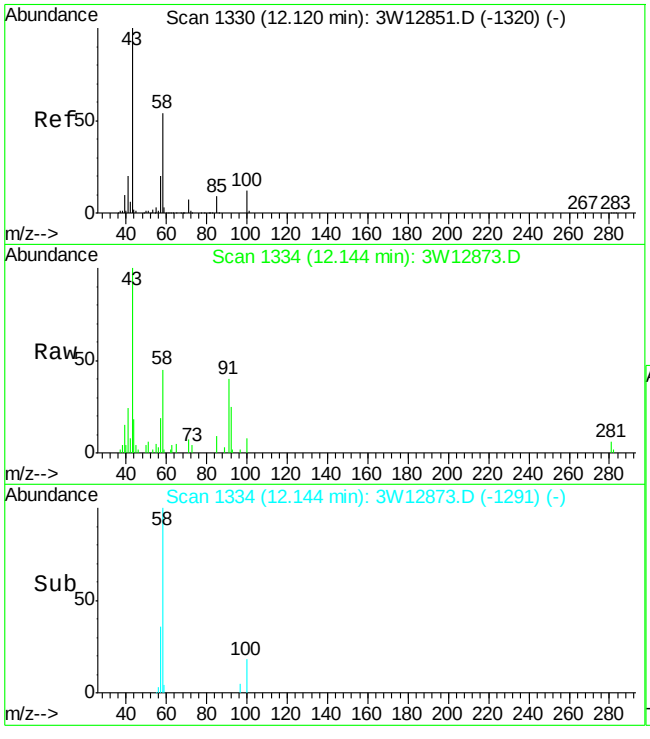


#61
TOLUENE
Concen: 69.32 PPBV
RT: 11.88 min Scan# 1291
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 92 Resp: 1761296

Ion	Ratio	Lower	Upper
92	100		
91	159.3	147.6	187.6
65	19.5	0.0	39.0

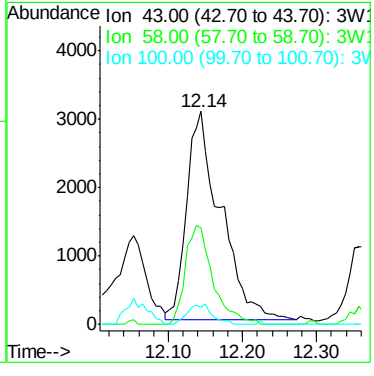


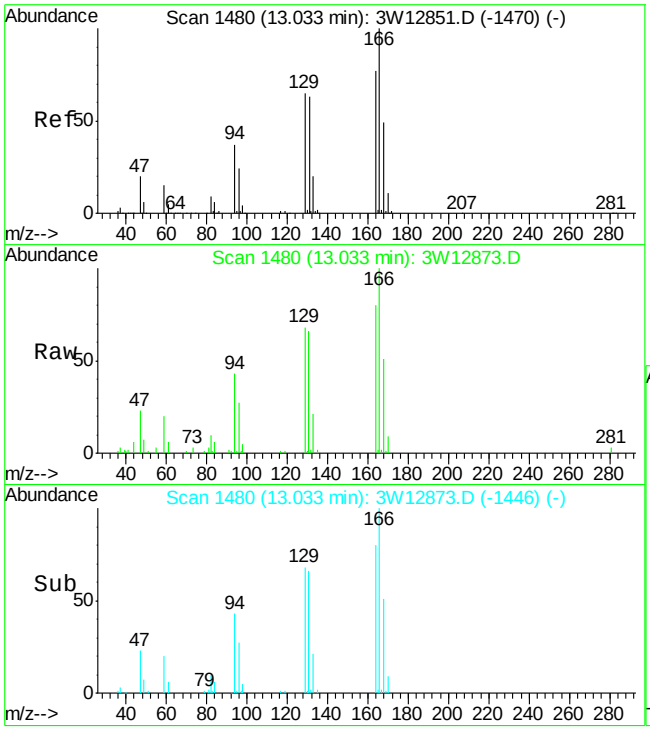


#65
2-HEXANONE
Concen: 0.63 PPBV
RT: 12.14 min Scan# 1334
Delta R.T. 0.02 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 43 Resp: 9642

Ion	Ratio	Lower	Upper
43	100		
58	38.5	34.2	74.2
100	7.0	0.0	31.8

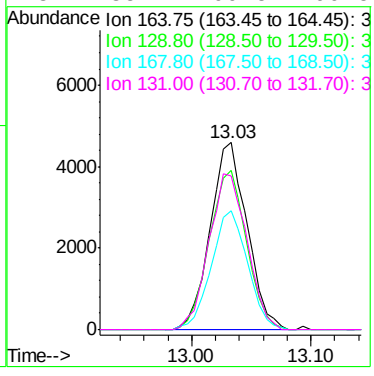


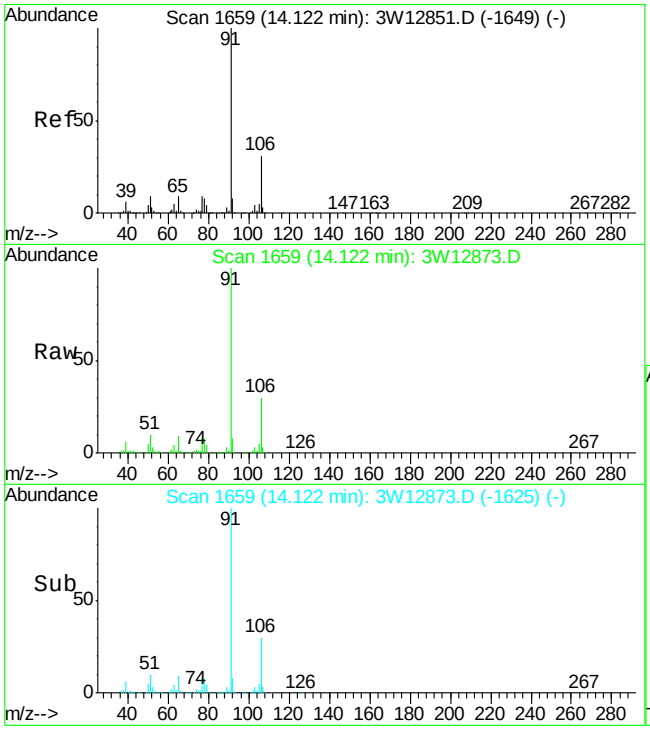


#66
TETRACHLOROETHYLENE
Concen: 0.53 PPBV
RT: 13.03 min Scan# 1480
Delta R.T. 0.00 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:164 Resp: 9892

Ion	Ratio	Lower	Upper
164	100		
129	85.8	63.0	103.0
168	62.8	43.2	83.2
131	85.7	60.5	100.5

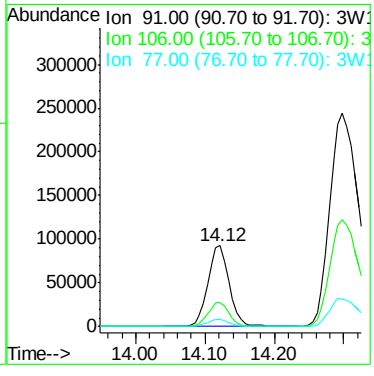


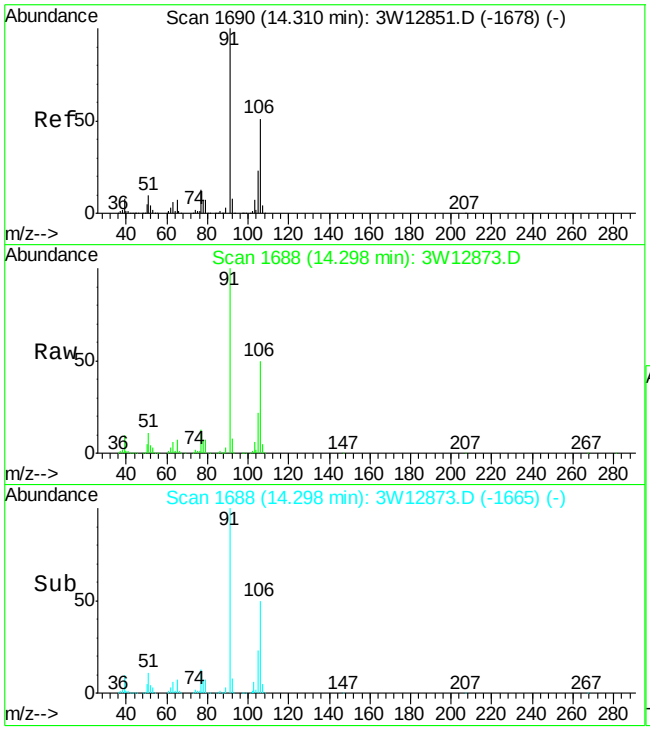


#72
ETHYLBENZENE
Concen: 4.56 PPBV
RT: 14.12 min Scan# 1659
Delta R.T. 0.00 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion: 91 Resp: 198338

Ion	Ratio	Lower	Upper
91	100		
106	30.4	11.2	51.2
77	8.7	0.0	28.7

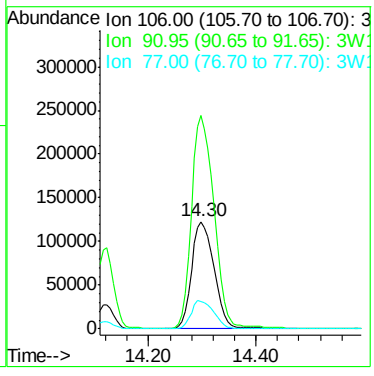


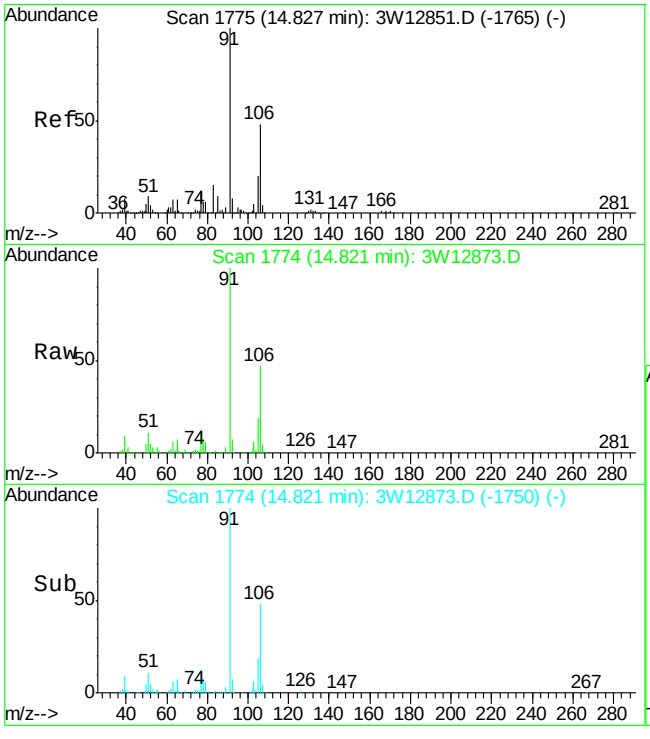


#73
m,p-XYLENE
Concen: 21.67 PPBV
RT: 14.30 min Scan# 1688
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:106 Resp: 356905

Ion	Ratio	Lower	Upper
106	100		
91	199.3	176.7	216.7
77	25.9	6.3	46.3

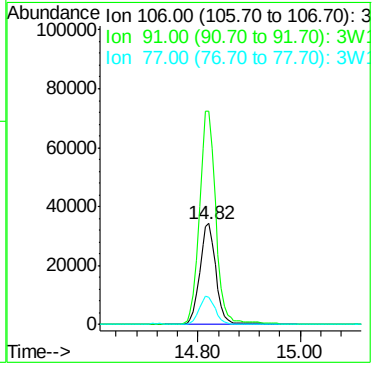


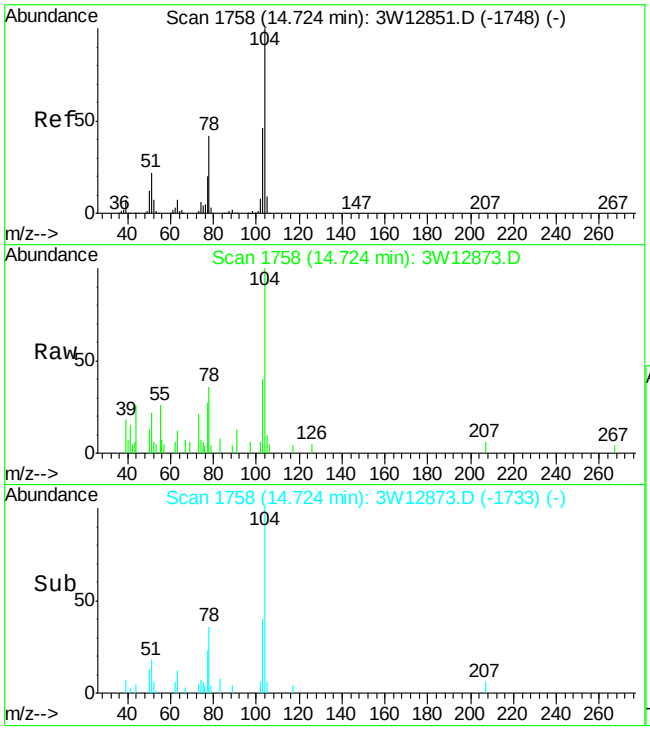


#74
o-XYLENE
Concen: 4.84 PPBV
RT: 14.82 min Scan# 1774
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:106 Resp: 75809

Ion	Ratio	Lower	Upper
106	100		
91	211.2	189.2	229.2
77	27.8	6.0	46.0

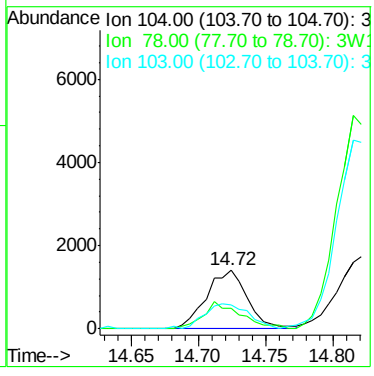


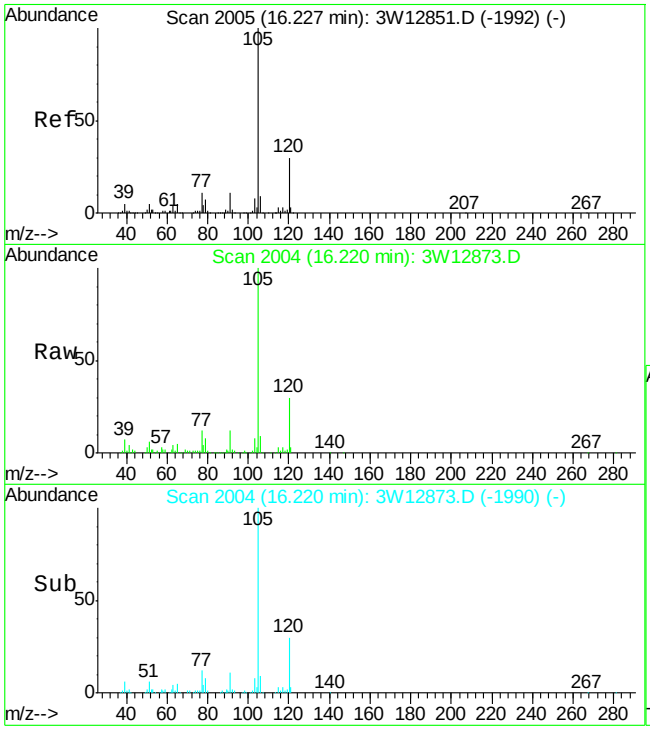


#75
STYRENE
Concen: 0.15 PPBV
RT: 14.72 min Scan# 1758
Delta R.T. 0.00 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:104 Resp: 2989

Ion	Ratio	Lower	Upper
104	100		
78	42.5	21.8	61.8
103	46.4	26.6	66.6

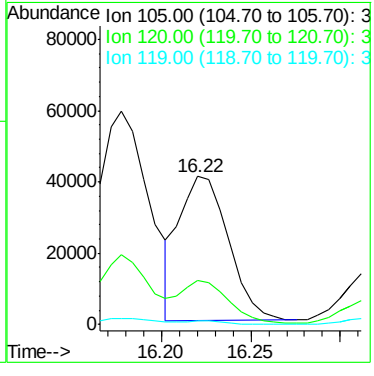


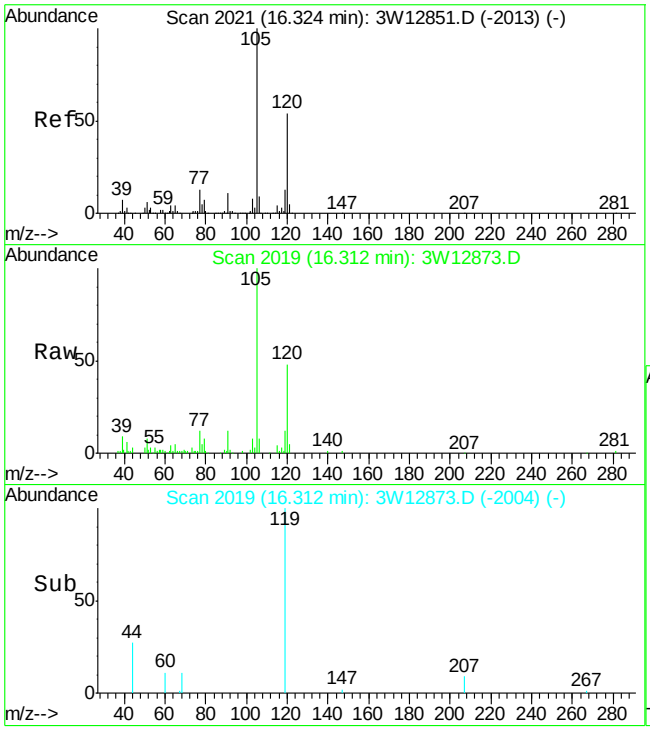


#84
4-ETHYLTOLUENE
Concen: 1.93 PPBV
RT: 16.22 min Scan# 2004
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:105 Resp: 76576

Ion	Ratio	Lower	Upper
105	100		
120	28.7	10.4	50.4
119	2.6	0.0	22.4

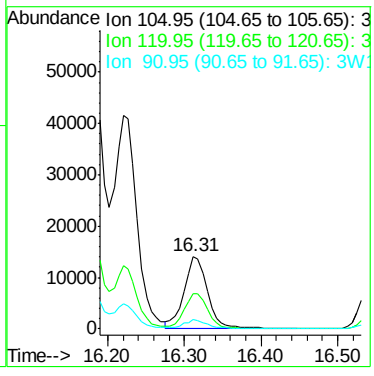


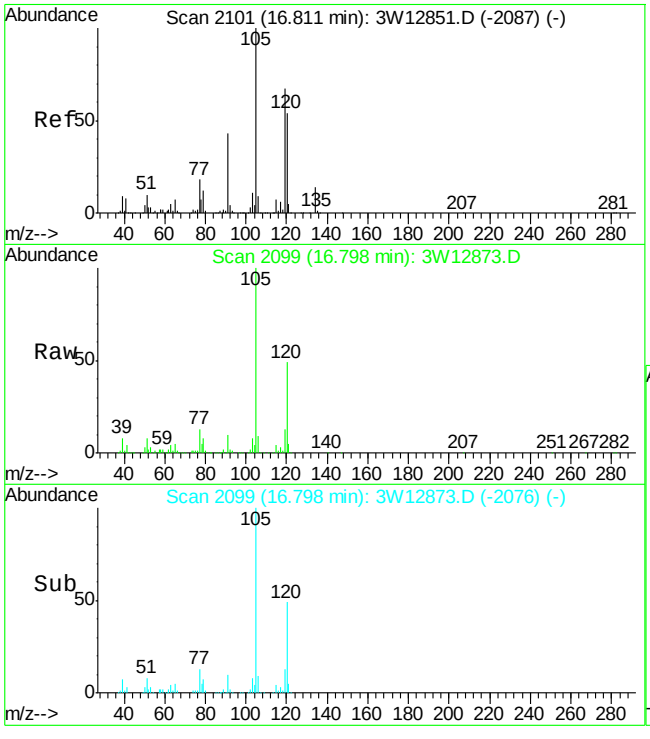


#85
1,3,5-TRIMETHYLBENZENE
Concen: 0.89 PPBV
RT: 16.31 min Scan# 2019
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:105 Resp: 29676

Ion	Ratio	Lower	Upper
105	100		
120	51.1	31.9	71.9
91	10.8	0.0	30.6

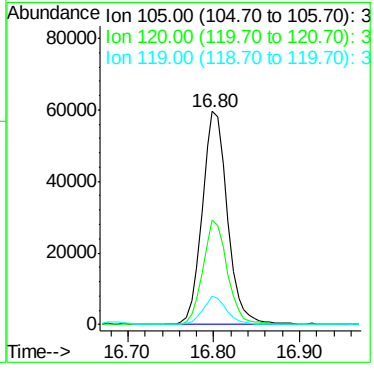




#87
1,2,4-TRIMETHYLBENZENE
Concen: 4.05 PPBV
RT: 16.80 min Scan# 2099
Delta R.T. -0.01 min
Lab File: 3W12873.D
Acq: 5 Oct 2009 2:25 pm

Tgt Ion:105 Resp: 121271

Ion	Ratio	Lower	Upper
105	100		
120	47.6	39.6	79.6
119	12.6	104.5	144.5#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12877.D Vial: 12
Acq On : 5 Oct 2009 5:05 pm Operator: YOUMINH
Sample : JA28237-3 Inst : MS3W
Misc : MS86154,V3W524,25,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:02:09 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

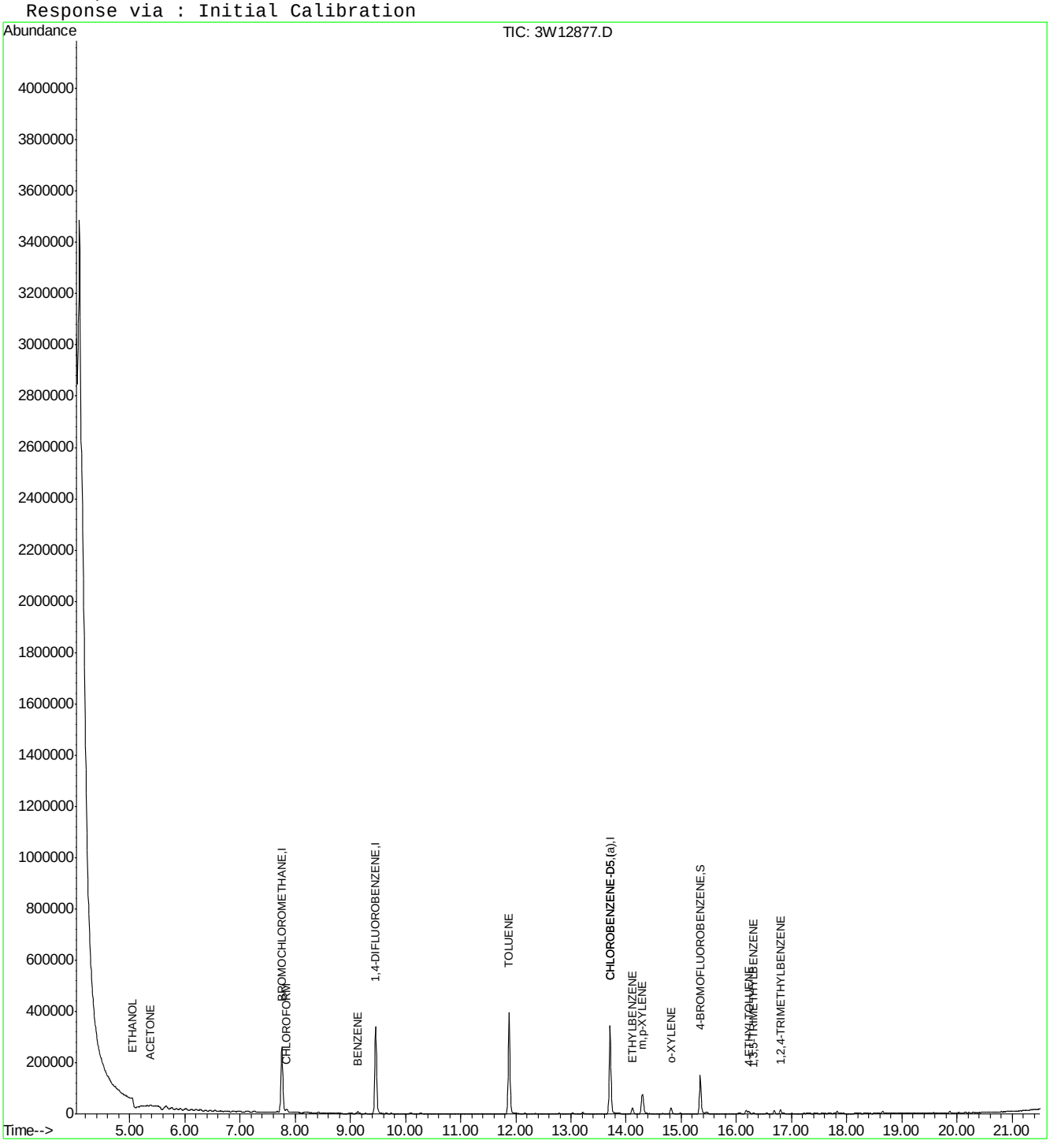
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	83865	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	337994	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	135344	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	135344	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	64847	4.57	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 91.40%			
Target Compounds						Qvalue
19) ACETONE	5.39	58	2751	0.58	PPBV #	37
26) ETHANOL	5.04	45	4927	1.30	PPBV	95
42) CHLOROFORM	7.84	83	7756	0.33	PPBV	95
48) BENZENE	9.14	78	7716	0.27	PPBV	97
61) TOLUENE	11.88	92	214650	11.43	PPBV	99
72) ETHYLBENZENE	14.12	91	20740	0.62	PPBV	98
73) m,p-XYLENE	14.29	106	36960	2.94	PPBV	99
74) o-XYLENE	14.82	106	7515	0.63	PPBV	92
84) 4-ETHYLTOLUENE	16.22	105	6954	0.23	PPBV	100
85) 1,3,5-TRIMETHYLBENZENE	16.31	105	2867	0.11	PPBV	90
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	10843	0.47	PPBV #	27

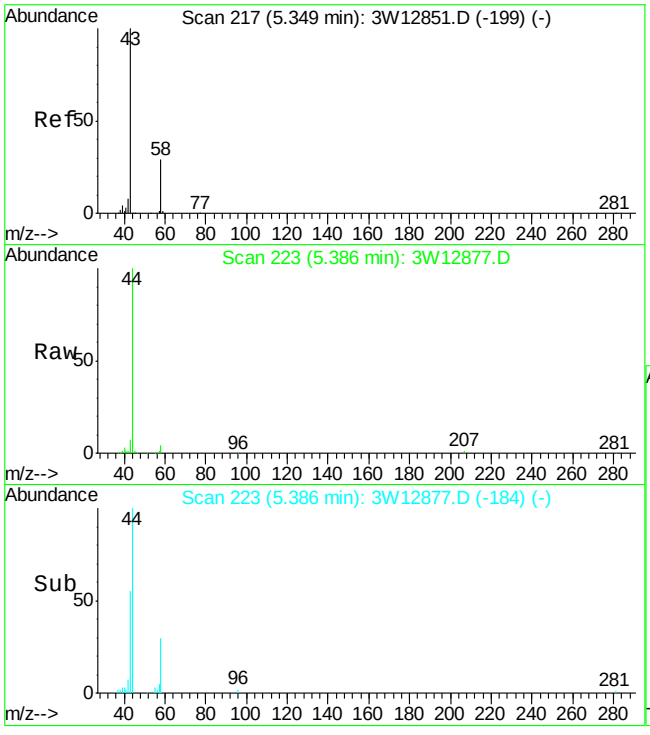
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12877.D Vial: 12
Acq On : 5 Oct 2009 5:05 pm Operator: YOUMINH
Sample : JA28237-3 Inst : MS3W
Misc : MS86154,V3W524,25,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:39 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

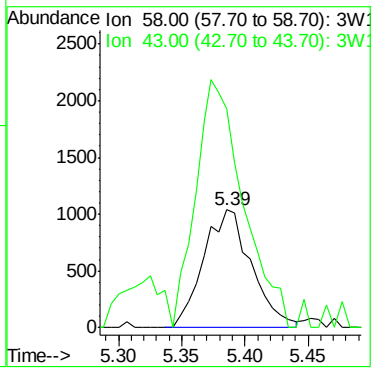


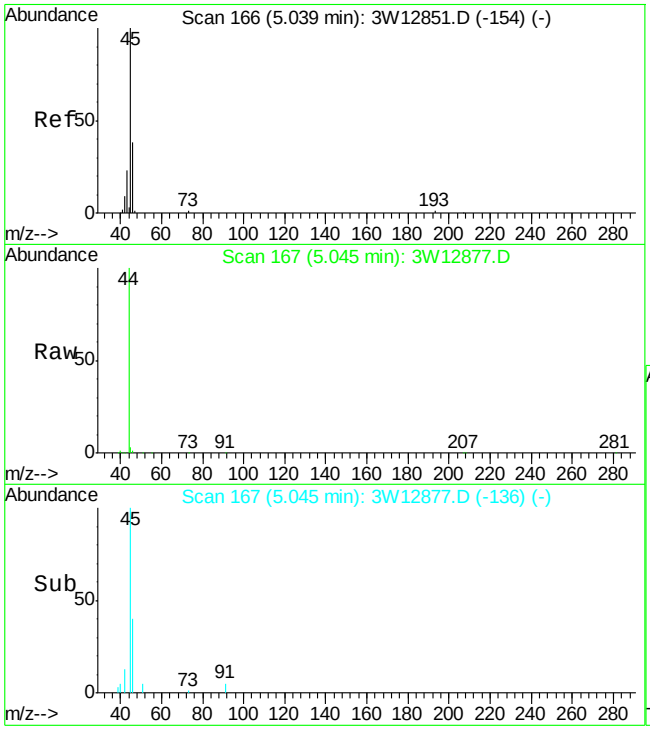


#19
ACETONE
Concen: 0.58 PPBV
RT: 5.39 min Scan# 223
Delta R.T. 0.04 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion: 58 Resp: 2751

Ion	Ratio	Lower	Upper
58	100		
43	208.2	323.9	363.9#

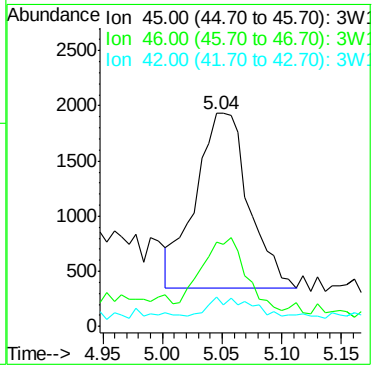


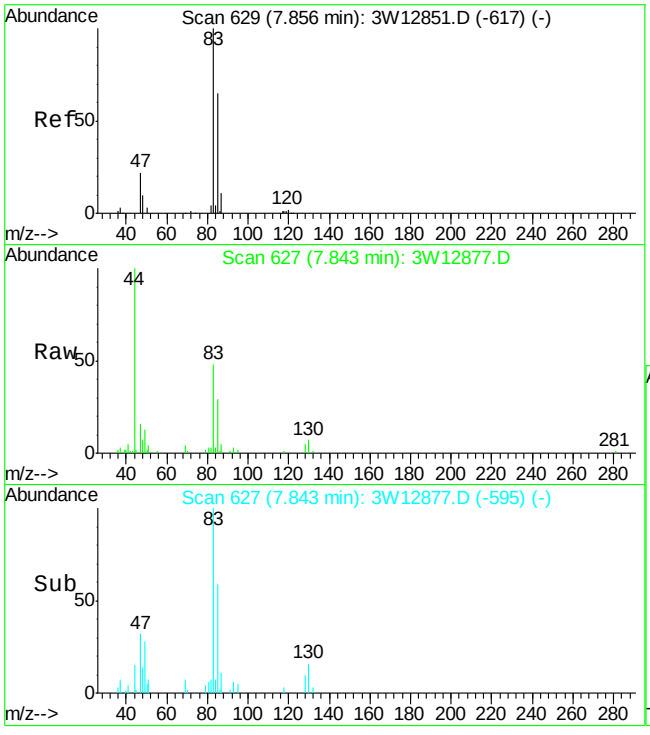


#26
ETHANOL
Concen: 1.30 PPBV
RT: 5.04 min Scan# 167
Delta R.T. 0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion: 45 Resp: 4927

Ion	Ratio	Lower	Upper
45	100		
46	34.8	17.9	57.9
42	7.6	0.0	29.8

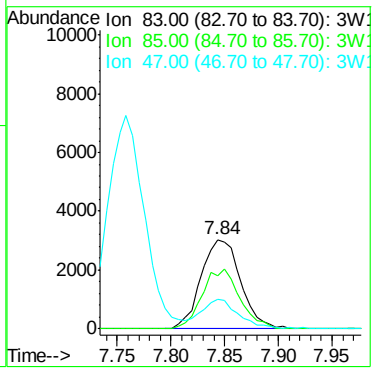


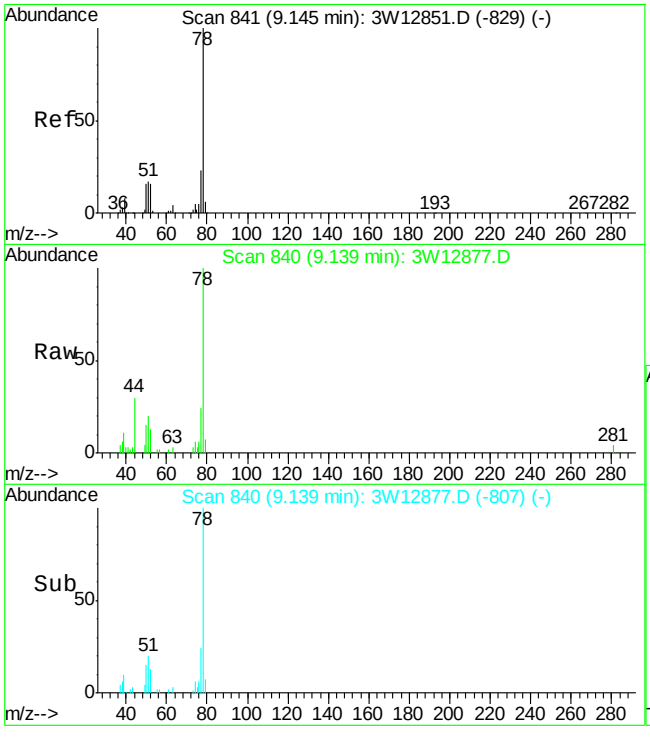


#42
CHLOROFORM
Concen: 0.33 PPBV
RT: 7.84 min Scan# 627
Delta R.T. -0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion: 83 Resp: 7756

Ion	Ratio	Lower	Upper
83	100		
85	63.5	45.0	85.0
47	31.0	4.7	44.7

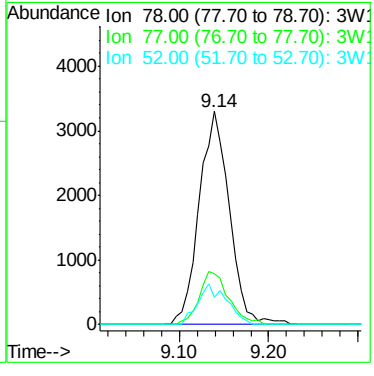


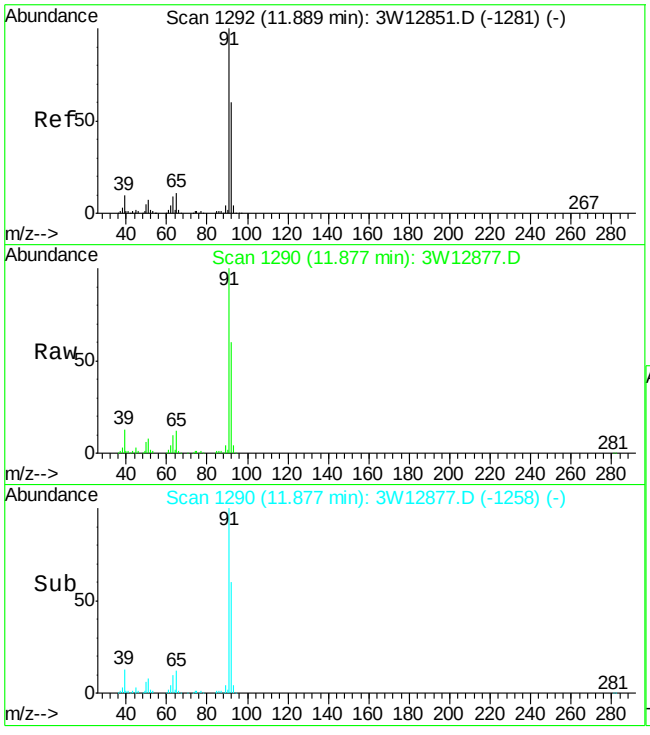


#48
BENZENE
Concen: 0.27 PPBV
RT: 9.14 min Scan# 840
Delta R.T. -0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion: 78 Resp: 7716

Ion	Ratio	Lower	Upper
78	100		
77	23.9	3.2	43.2
52	18.1	0.0	35.8

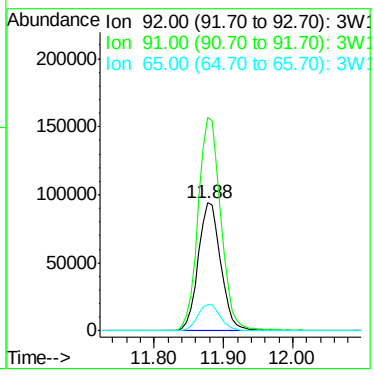


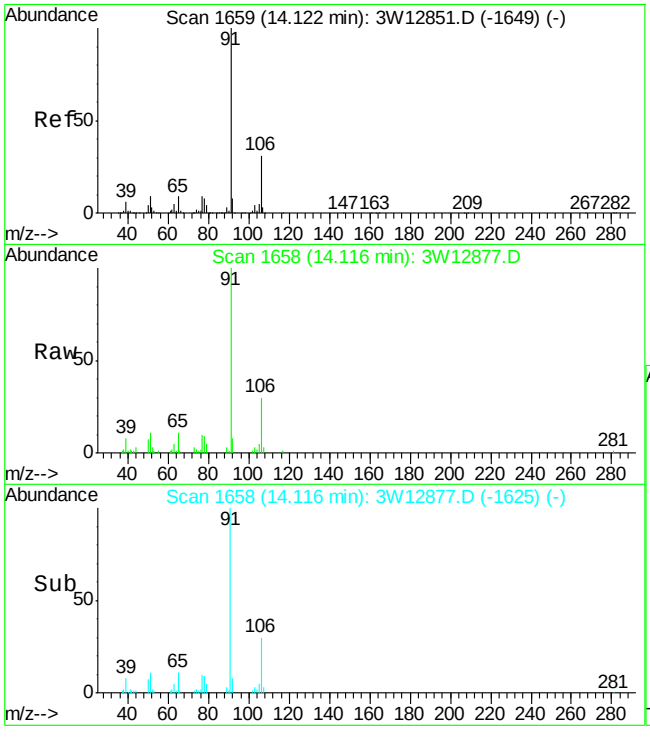


#61
TOLUENE
Concen: 11.43 PPBV
RT: 11.88 min Scan# 1290
Delta R.T. -0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion: 92 Resp: 214650

Ion	Ratio	Lower	Upper
92	100		
91	168.3	147.6	187.6
65	20.7	0.0	39.0

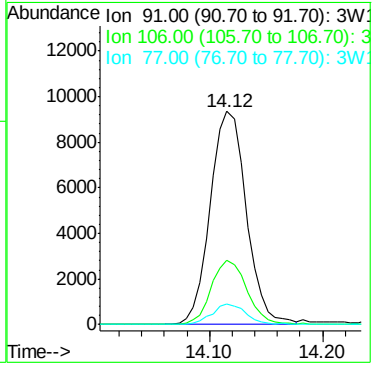


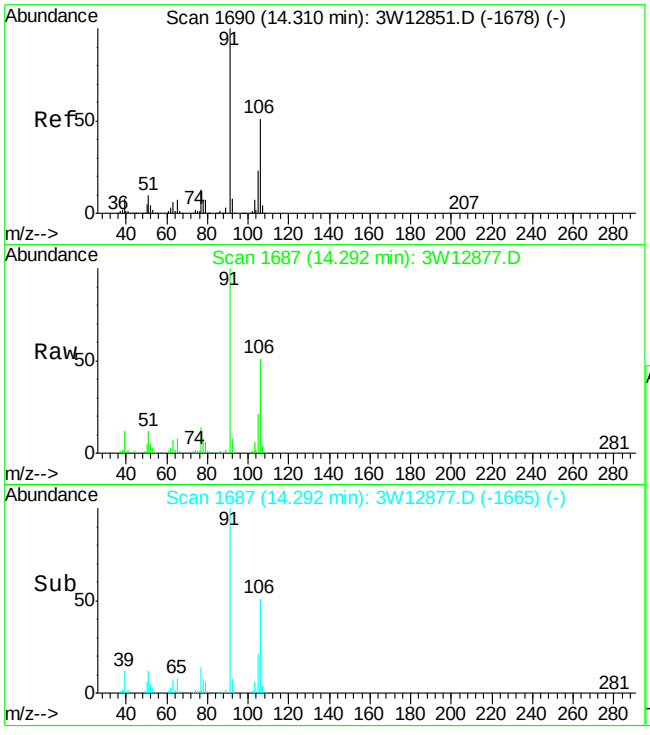


#72
ETHYLBENZENE
Concen: 0.62 PPBV
RT: 14.12 min Scan# 1658
Delta R.T. -0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion: 91 Resp: 20740

Ion	Ratio	Lower	Upper
91	100		
106	29.7	11.2	51.2
77	9.1	0.0	28.7

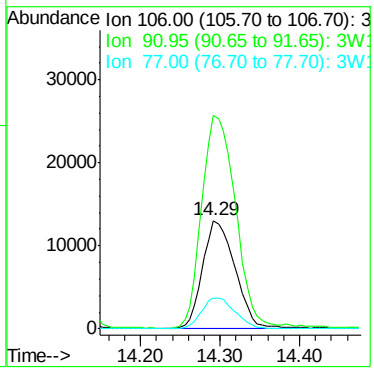


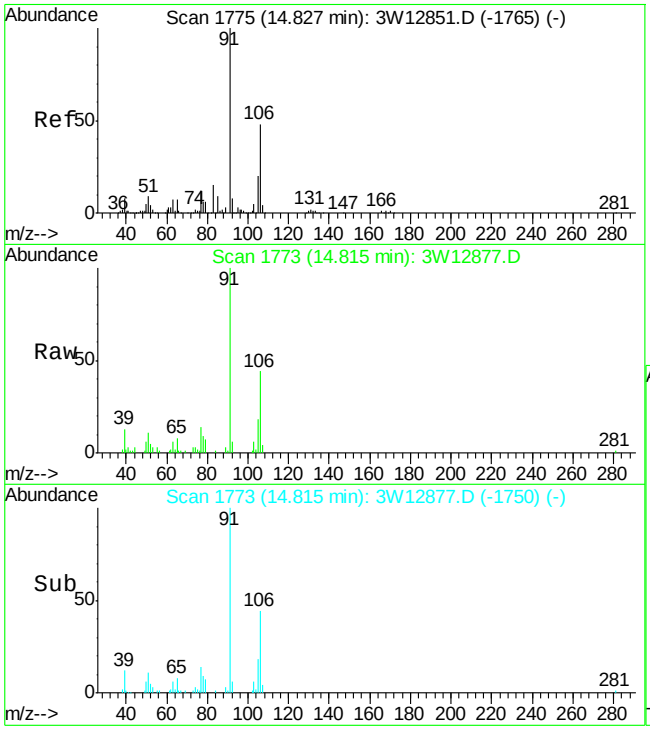


#73
m,p-XYLENE
Concen: 2.94 PPBV
RT: 14.29 min Scan# 1687
Delta R.T. -0.02 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion:106 Resp: 36960

Ion	Ratio	Lower	Upper
106	100		
91	197.0	176.7	216.7
77	27.9	6.3	46.3

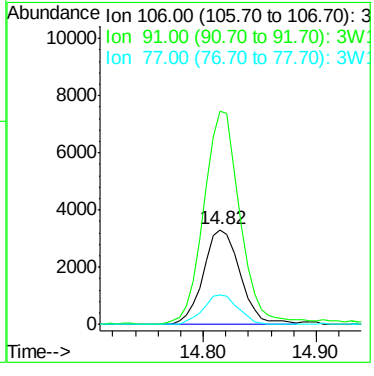


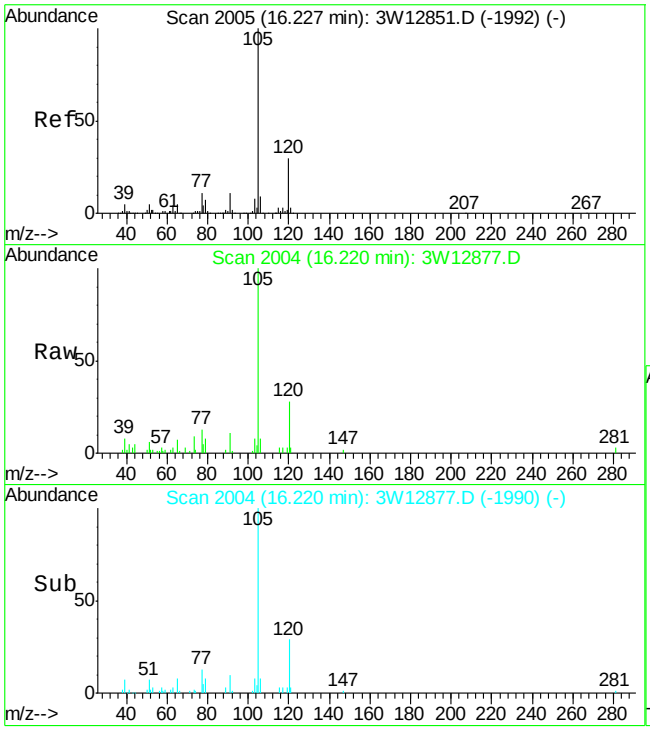


#74
o-XYLENE
Concen: 0.63 PPBV
RT: 14.82 min Scan# 1773
Delta R.T. -0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion:106 Resp: 7515

Ion	Ratio	Lower	Upper
106	100		
91	222.3	189.2	229.2
77	29.5	6.0	46.0

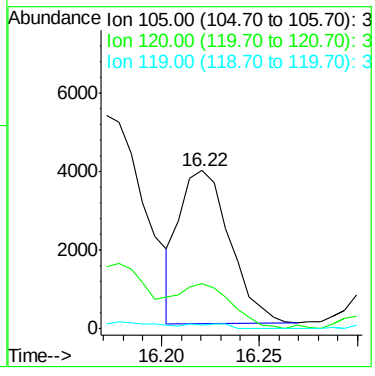


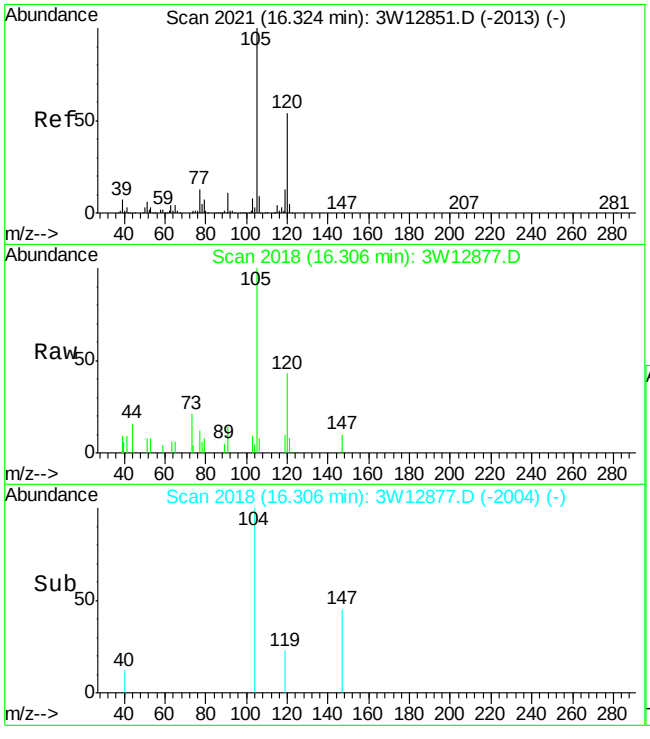


#84
4-ETHYLTOLUENE
Concen: 0.23 PPBV
RT: 16.22 min Scan# 2004
Delta R.T. -0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion:105 Resp: 6954

Ion	Ratio	Lower	Upper
105	100		
120	30.5	10.4	50.4
119	2.4	0.0	22.4

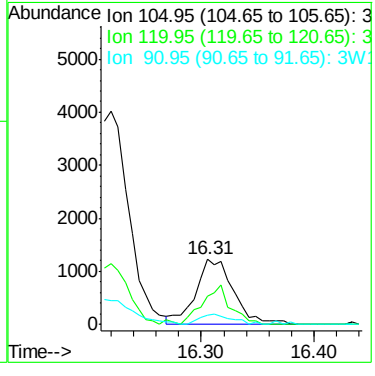


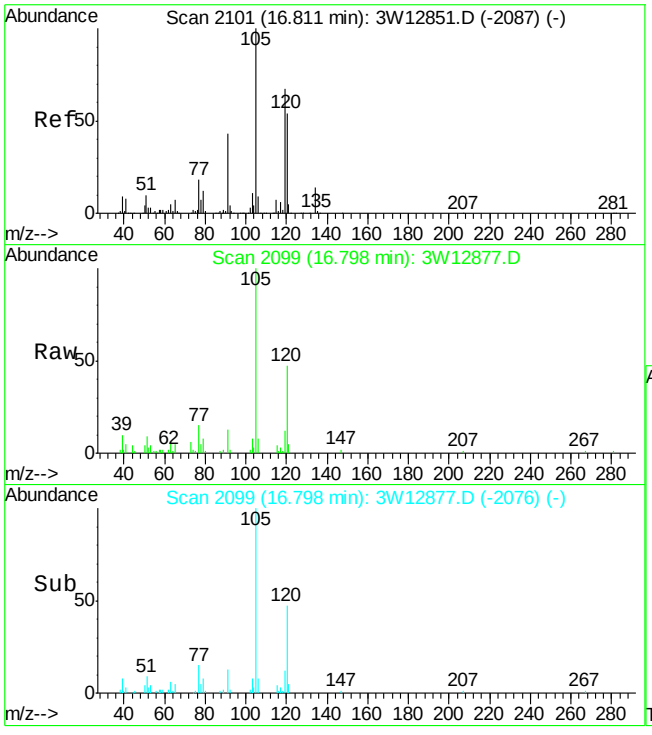


#85
1,3,5-TRIMETHYLBENZENE
Concen: 0.11 PPBV
RT: 16.31 min Scan# 2018
Delta R.T. -0.02 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion:105 Resp: 2867

Ion	Ratio	Lower	Upper
105	100		
120	44.9	31.9	71.9
91	13.8	0.0	30.6

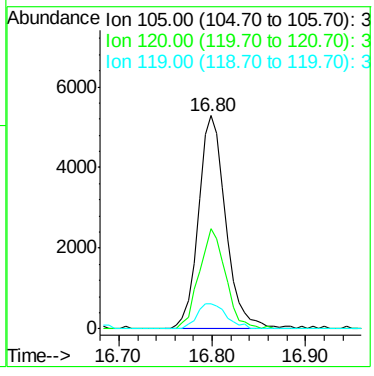




#87
1,2,4-TRIMETHYLBENZENE
Concen: 0.47 PPBV
RT: 16.80 min Scan# 2099
Delta R.T. -0.01 min
Lab File: 3W12877.D
Acq: 5 Oct 2009 5:05 pm

Tgt Ion:105 Resp: 10843

Ion	Ratio	Lower	Upper
105	100		
120	45.2	39.6	79.6
119	12.5	104.5	144.5#



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12870.D Vial: 5
Acq On : 5 Oct 2009 12:24 pm Operator: YOUMINH
Sample : MB Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:56 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	97525	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	387135	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	147587	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	147587	10.00	PPBV	-0.01

System Monitoring Compounds

78) 4-BROMOFLUOROBENZENE	15.34	95	66787	4.31	PPBV	-0.01

Spiked Amount 5.000 Range 65 - 128 Recovery = 86.20%

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed
3W12870.D M3W523.M Tue Oct 06 13:02:56 2009 MS3W

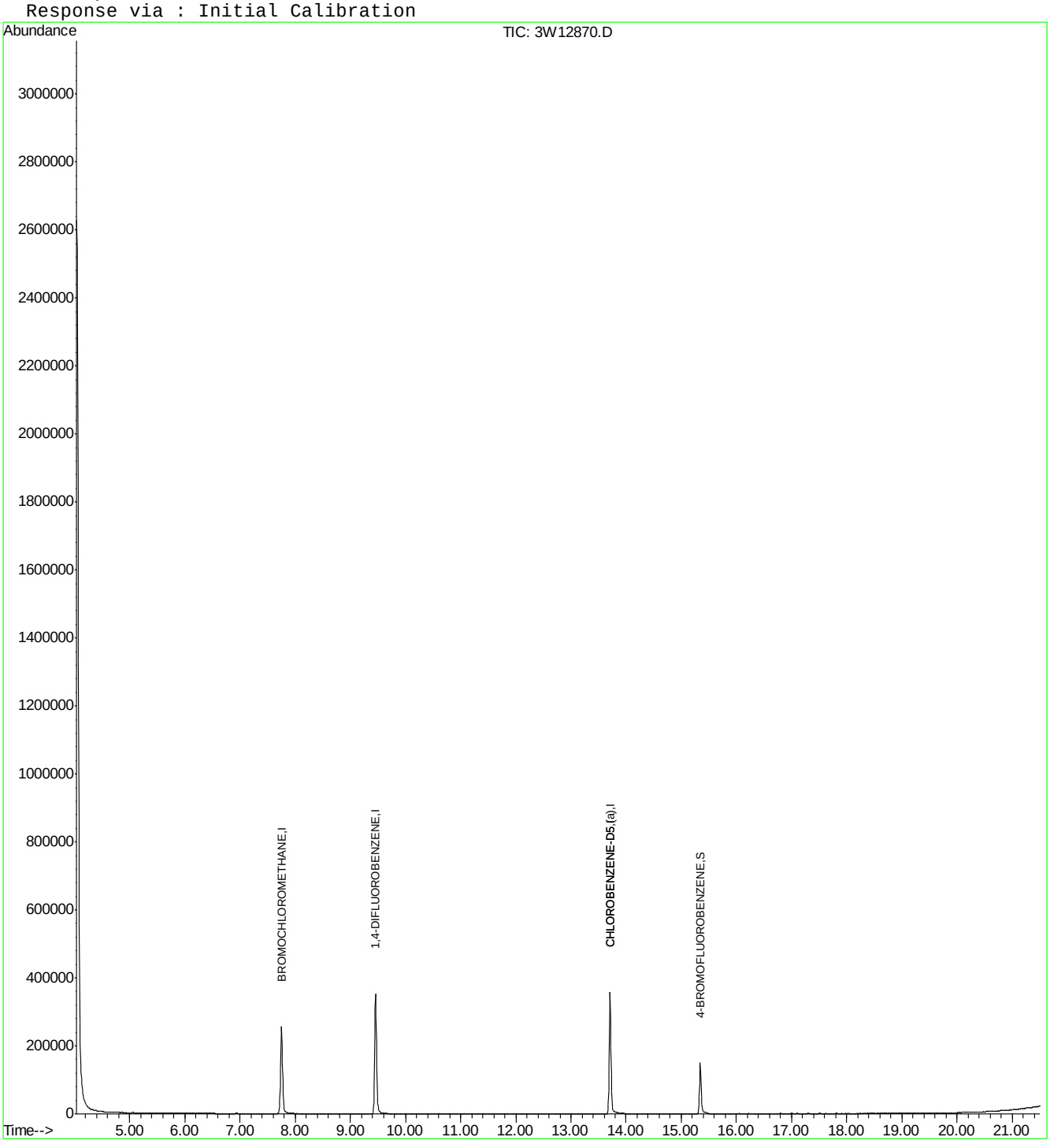
ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12870.D
Acq On : 5 Oct 2009 12:24 pm
Sample : MB
Misc : MS49009,V3W524,,,,,1
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009

Vial: 5
Operator: YOUMINH
Inst : MS3W
Multiplr: 1.00
Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1073\2W25422.D Vial: 5
Acq On : 9 Sep 2009 1:35 pm Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 09 14:01:46 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.94	128	163630	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	733786	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.40	82	311382	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.40	82	311634	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	124027	3.91	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 78.20%

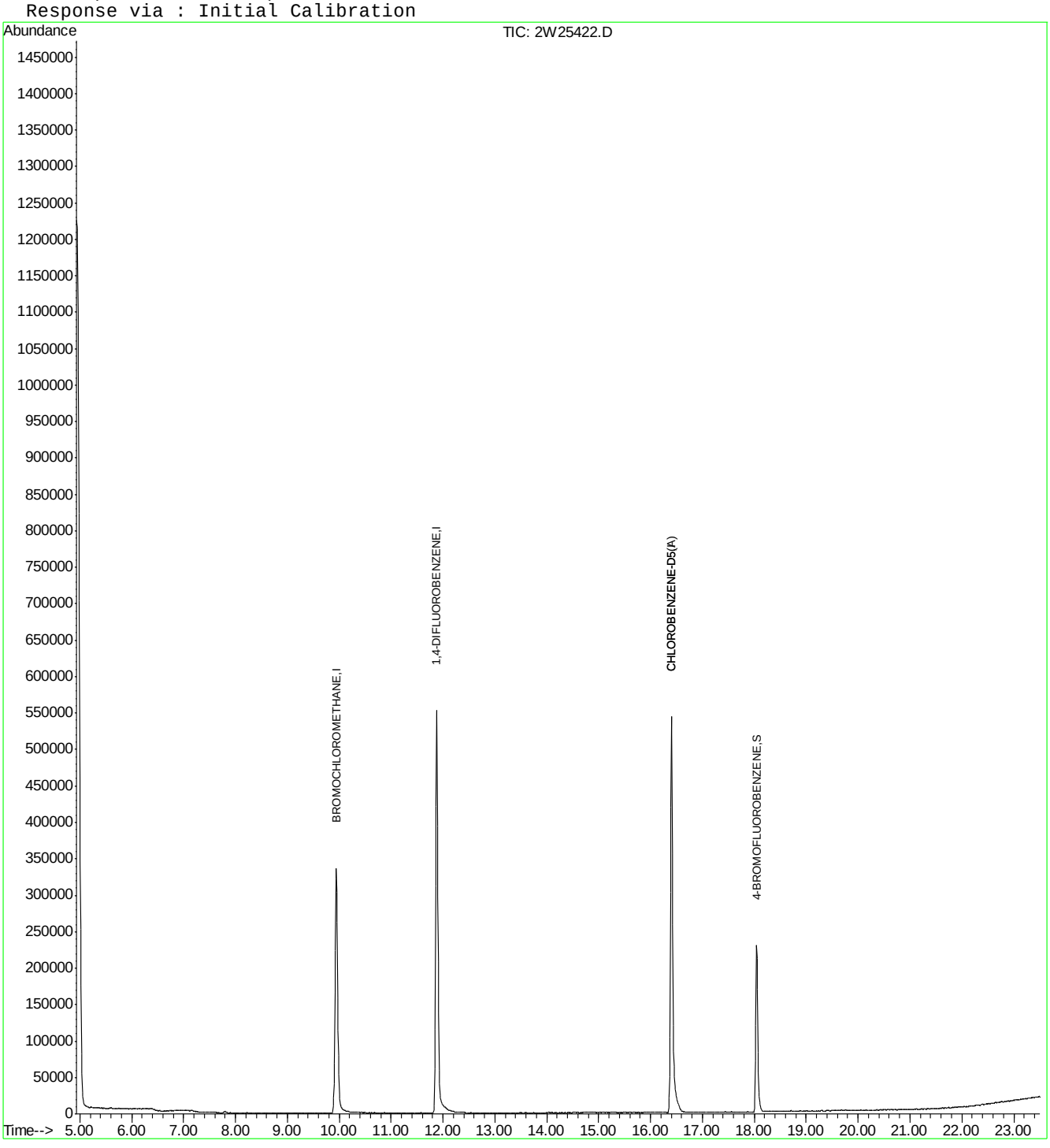
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed
2W25422.D M2W1070.M Mon Sep 14 09:24:54 2009 MS2W Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1073\2W25422.D Vial: 5
Acq On : 9 Sep 2009 1:35 pm Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 14 9:24 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25475.D Vial: 5
Acq On : 11 Sep 2009 10:17 am Operator: YOUMINH
Sample : MB Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:08 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.96	128	133845	10.00	PPBV	0.01
46) 1,4-DIFLUOROBENZENE	11.89	114	569612	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	233731	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	233603	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	88558	3.72	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 74.40%

Target Compounds Qvalue

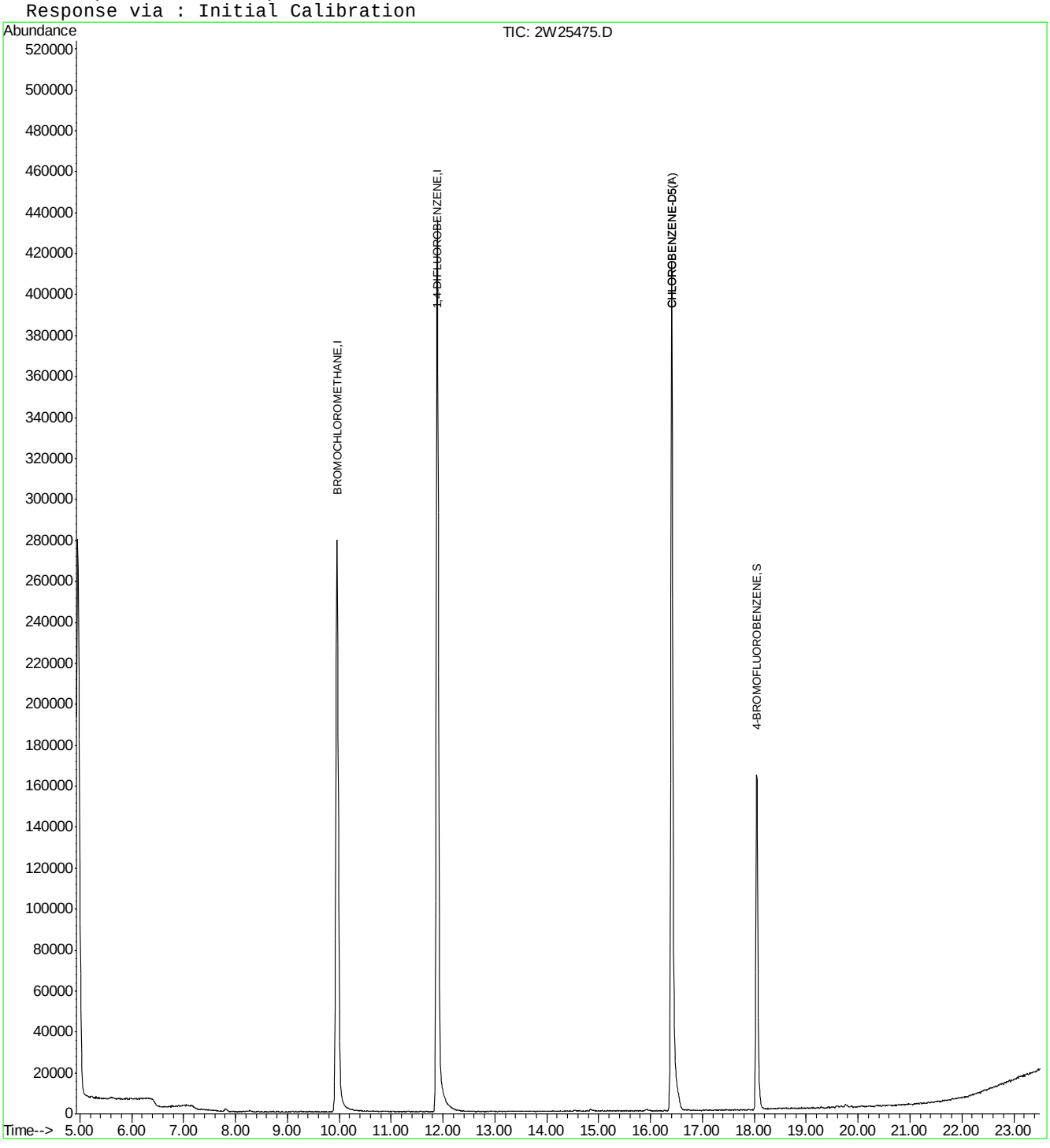
(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25475.D
Acq On : 11 Sep 2009 10:17 am
Sample : MB
Misc : MS49009,V2W1075,,,,,1
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009

Vial: 5
Operator: YOUMINH
Inst : MS2W
Multiplr: 1.00
Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	95784	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	413899	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	194989	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	194989	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	105871	5.18	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 103.60%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	248315	8.83	PPBV	96
3) FREON 152A	4.16	65	85161	9.62	PPBV	98
4) CHLORODIFLUOROMETHANE	4.19	67	37104	8.64	PPBV	96
5) DICHLORODIFLUOROMETHANE	4.26	85	337424	8.74	PPBV	100
6) PROPANE	4.23	43	46797	9.79	PPBV	100
7) PROPYLENE	4.21	41	137362	10.05	PPBV	98
8) FREON 114	4.44	85	370213	9.13	PPBV	97
9) CHLOROMETHANE	4.38	50	121560	8.71	PPBV	99
10) VINYL CHLORIDE	4.53	62	141331	10.17	PPBV	100
11) 1,3-BUTADIENE	4.62	54	104530	10.54	PPBV	98
12) n-BUTANE	4.64	43	207799	9.62	PPBV	99
13) BROMOMETHANE	4.82	94	134361	9.76	PPBV	99
14) CHLOROETHANE	4.92	64	75475	10.51	PPBV	99
15) FREON 123	5.26	83	312099	10.20	PPBV	99
16) FREON 123A	5.29	117	185857	9.68	PPBV	91
17) TRICHLOROFLUOROMETHANE	5.46	101	350879	9.09	PPBV	100
18) ISOPROPYL ALCOHOL	5.52	45	193157	10.62	PPBV	97
19) ACETONE	5.34	58	55160	10.23	PPBV	92
20) PENTANE	5.67	42	142947	10.93	PPBV	95
21) TVHC as EQUIV PENTANE	5.67	TIC	892082m	12.01	PPBV	
22) ETHYL ETHER	5.70	74	56560	10.69	PPBV	99
23) IODOMETHANE	5.88	142	357370	9.70	PPBV	97
24) 1,1-DICHLOROETHYLENE	5.93	96	119748	9.51	PPBV	99
25) CARBON DISULFIDE	6.26	76	364133	9.77	PPBV	99
26) ETHANOL	5.03	45	41554	9.60	PPBV	99
27) BROMOETHENE	5.18	106	131284	9.89	PPBV	98
28) METHYLENE CHLORIDE	6.03	84	107173	9.27	PPBV	94
29) 3-CHLOROPROPENE	6.10	76	55581	10.45	PPBV #	93
30) FREON 113	6.19	151	212480	9.40	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	124082	9.59	PPBV	96
32) TERTIARY BUTYL ALCOHOL	5.94	59	245937	11.59	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	313462	9.95	PPBV	97
34) TETRAHYDROFURAN	8.18	72	50388	10.93	PPBV	91
35) HEXANE	7.67	57	187433	10.74	PPBV	99
36) VINYL ACETATE	7.00	86	23941	11.14	PPBV #	77
37) 1,1-DICHLOROETHANE	6.89	63	232243	10.39	PPBV	99
38) METHYL ETHYL KETONE	7.20	72	48824	10.65	PPBV #	86
39) cis-1,2-DICHLOROETHYLENE	7.63	96	123151	9.63	PPBV	96
40) DIISOPROPYL ETHER	7.67	45	342683	11.46	PPBV	99
41) ETHYL ACETATE	7.75	61	29650	10.03	PPBV #	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.85	83	258226	9.73	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.43	57	213908	10.78	PPBV		99
44)	1,1,1-TRICHLOROETHANE	8.71	97	270721	9.51	PPBV		98
45)	CARBON TETRACHLORIDE	9.27	117	287630	9.68	PPBV		100
46)	1,2-DICHLOROETHANE	8.49	62	178473	10.30	PPBV		100
48)	BENZENE	9.14	78	368521	10.65	PPBV		99
49)	CYCLOHEXANE	9.32	56	187085	10.85	PPBV	#	80
50)	2,3-DIMETHYLPENTANE	9.50	71	79331	10.23	PPBV		96
51)	TRICHLOROETHYLENE	10.10	95	163202	10.42	PPBV		98
52)	1,2-DICHLOROPROPANE	9.86	63	131324	10.54	PPBV		94
53)	BROMODICHLOROMETHANE	10.08	83	268533	11.12	PPBV		100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	562488	11.04	PPBV		99
55)	1,4-DIOXANE	10.14	88	68093	9.98	PPBV		92
56)	HEPTANE	10.28	43	222782	11.01	PPBV		96
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1449604m	11.13	PPBV		
58)	METHYL METHACRYLATE	10.29	69	103126	11.41	PPBV		94
59)	METHYL ISOBUTYL KETONE	10.92	43	225399	12.08	PPBV		97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	196431	11.23	PPBV		99
61)	TOLUENE	11.88	92	248573	10.81	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	184275	11.41	PPBV		98
63)	1,1,2-TRICHLOROETHANE	11.62	83	118555	11.22	PPBV		98
65)	2-HEXANONE	12.11	43	207338	12.38	PPBV		97
66)	TETRACHLOROETHYLENE	13.03	164	191081	9.31	PPBV		98
67)	DIBROMOCHLOROMETHANE	12.33	129	267126	11.27	PPBV		99
68)	1,2-DIBROMOETHANE	12.55	107	205031	10.93	PPBV		100
69)	OCTANE	12.78	43	288898	11.17	PPBV		94
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	192225	9.85	PPBV		100
71)	CHLOROBENZENE	13.76	112	318926	10.15	PPBV		99
72)	ETHYLBENZENE	14.12	91	498778	10.42	PPBV		100
73)	m,p-XYLENE	14.30	106	382379	21.10	PPBV		99
74)	o-XYLENE	14.82	106	184522	10.70	PPBV		100
75)	STYRENE	14.72	104	253301	11.47	PPBV		100
76)	NONANE	14.97	43	271169	11.39	PPBV		97
77)	BROMOFORM	14.43	173	239101	11.42	PPBV		99
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	234447	10.64	PPBV		99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	184972	10.77	PPBV		95
81)	ISOPROPYLBENZENE	15.46	105	519454	10.23	PPBV		100
82)	2-CHLOROTOLUENE	16.04	126	122559	10.72	PPBV		100
83)	n-PROPYLBENZENE	16.05	120	134349	10.07	PPBV		99
84)	4-ETHYLTOLUENE	16.22	105	444717	10.16	PPBV		99
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	372500	10.11	PPBV		100
86)	tert-BUTYLBENZENE	16.79	134	94897	9.72	PPBV		99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	342315	10.38	PPBV		99
88)	m-DICHLOROBENZENE	17.01	146	216925	10.27	PPBV		99
89)	BENZYL CHLORIDE	17.00	91	225006	11.13	PPBV		98
90)	p-DICHLOROBENZENE	17.08	146	200359	9.97	PPBV		99
91)	sec-BUTYLBENZENE	17.11	134	109108	9.89	PPBV		94
92)	p-ISOPROPYLTOLUENE	17.29	134	107525	9.59	PPBV		99
93)	o-DICHLOROBENZENE	17.50	146	195150	10.19	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

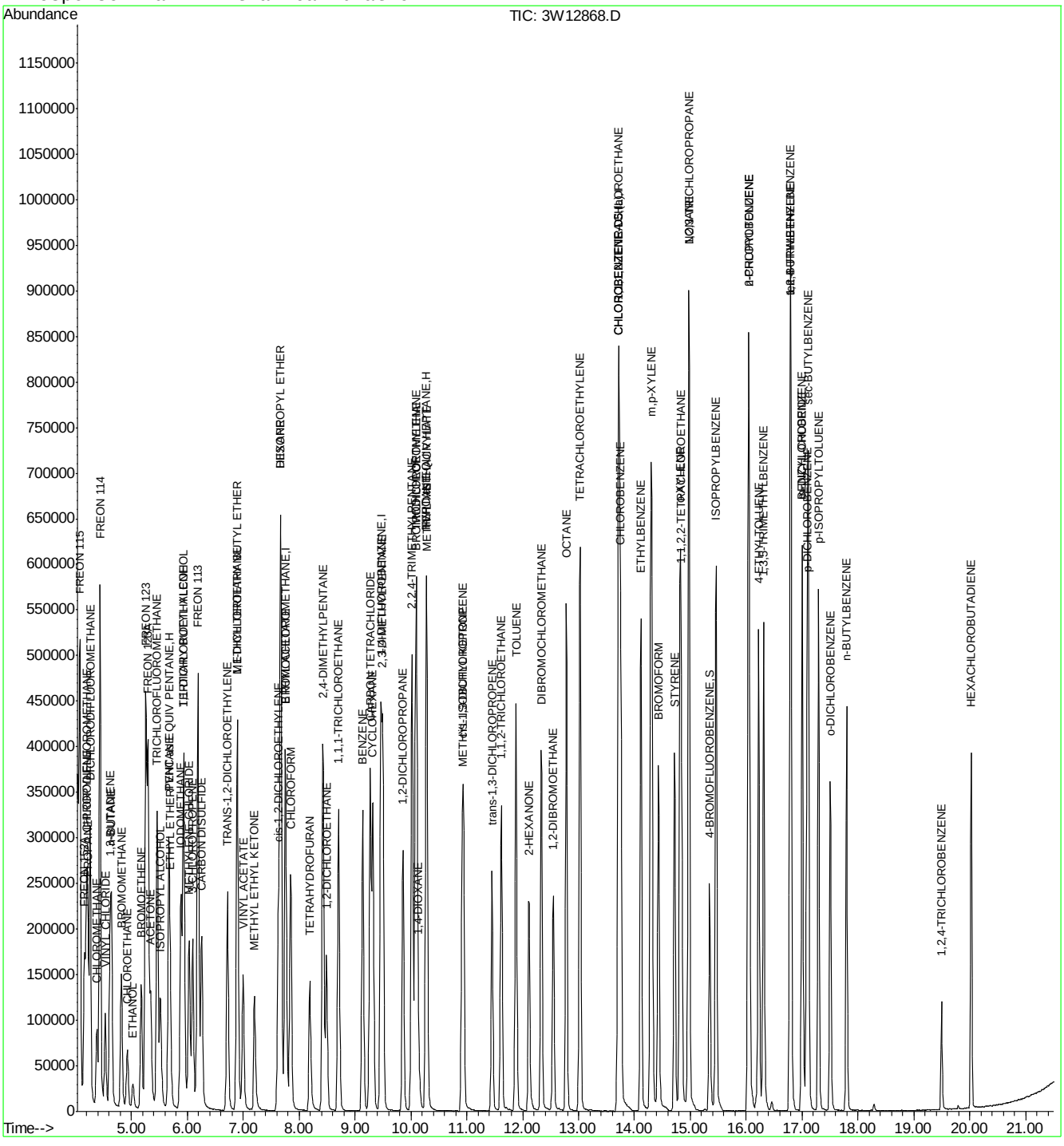
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	79800	10.92	PPBV	91
95)	HEXACHLOROBUTADIENE	20.03	225	86805	11.60	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.49	180	46397	12.71	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: M3W523.RES

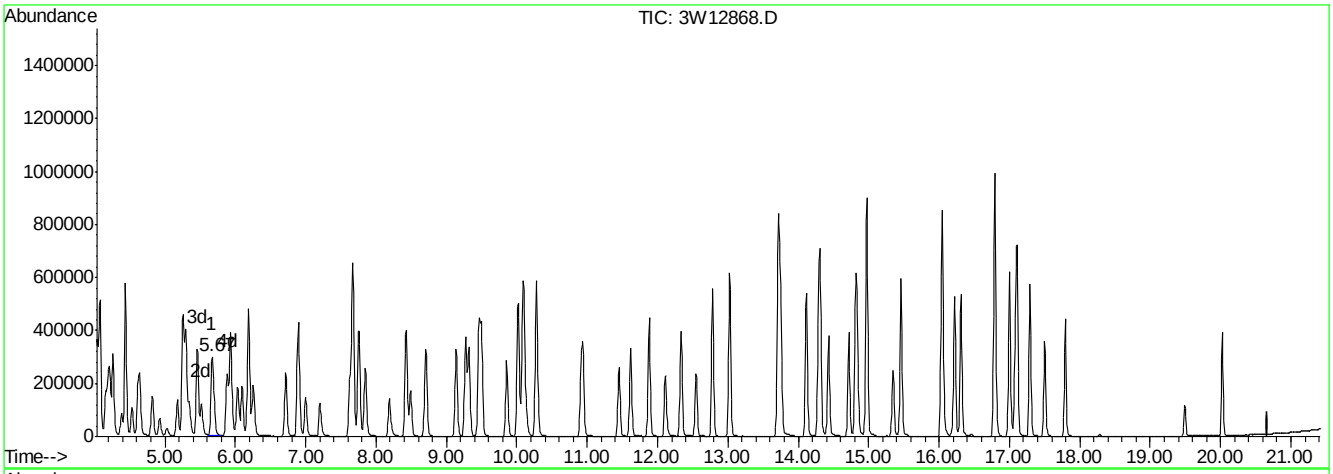
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

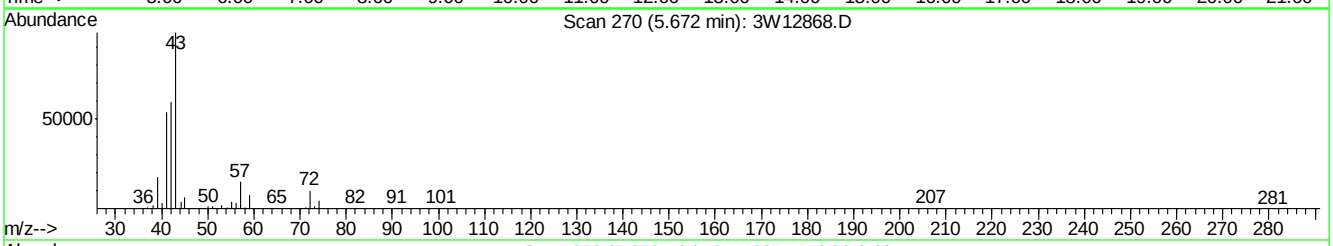


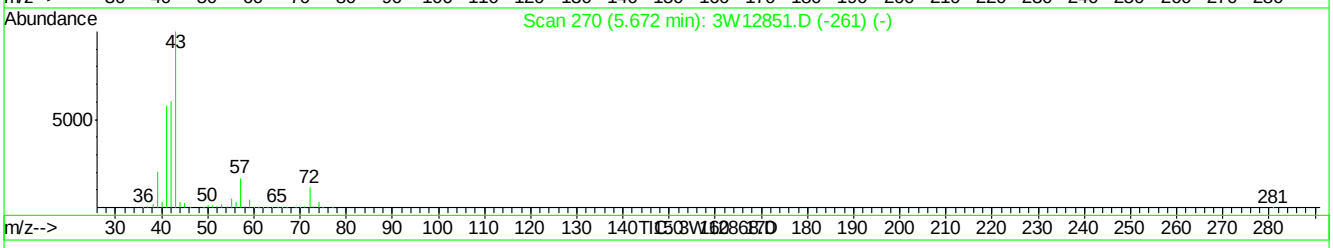
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.01PPBV m

response 892082

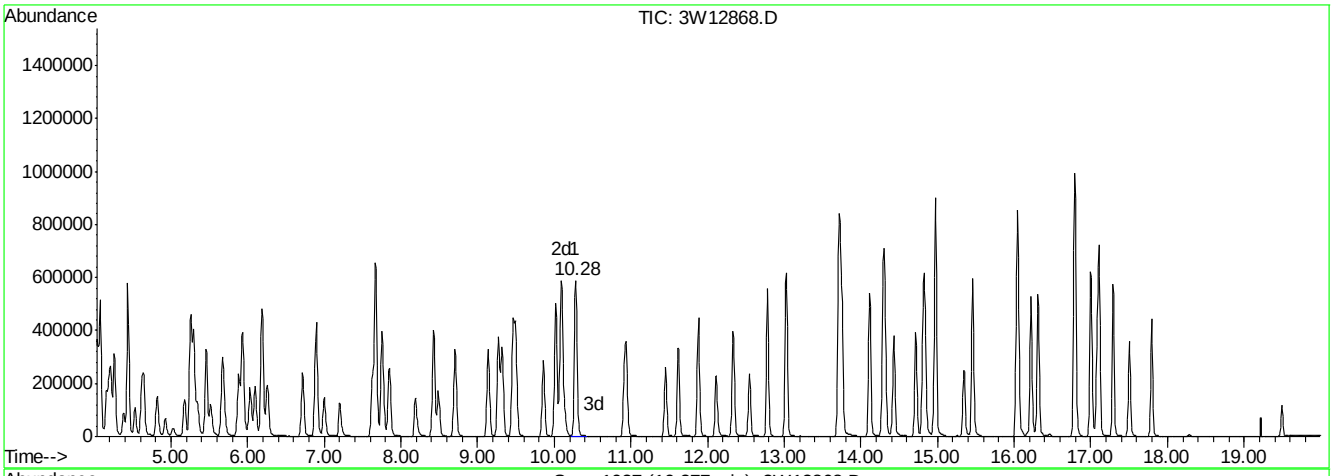
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:07 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 11.13PPBV m

response 1449604

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:10 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:53 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	96953	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	423905	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	198824	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	198824	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	106193	5.09	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.80%			
Target Compounds						Qvalue
2) FREON 115	4.07	85	261716	9.19	PPBV	96
3) FREON 152A	4.15	65	90589	10.10	PPBV	99
4) CHLORODIFLUOROMETHANE	4.19	67	39476	9.08	PPBV	97
5) DICHLORODIFLUOROMETHANE	4.25	85	376744	9.64	PPBV	100
6) PROPANE	4.22	43	48559	10.04	PPBV	100
7) PROPYLENE	4.21	41	148395	10.73	PPBV	98
8) FREON 114	4.43	85	400935	9.77	PPBV	98
9) CHLOROMETHANE	4.38	50	134403	9.51	PPBV	96
10) VINYL CHLORIDE	4.52	62	151071	10.74	PPBV	100
11) 1,3-BUTADIENE	4.61	54	110961	11.05	PPBV	97
12) n-BUTANE	4.64	43	234122	10.71	PPBV	99
13) BROMOMETHANE	4.81	94	142082	10.20	PPBV	100
14) CHLOROETHANE	4.92	64	81170	11.17	PPBV	99
15) FREON 123	5.25	83	323069	10.43	PPBV	99
16) FREON 123A	5.29	117	192202	9.89	PPBV	90
17) TRICHLOROFLUOROMETHANE	5.45	101	369519	9.46	PPBV	100
18) ISOPROPYL ALCOHOL	5.51	45	193570	10.51	PPBV	97
19) ACETONE	5.34	58	54252	9.94	PPBV	95
20) PENTANE	5.66	42	152006	11.49	PPBV	96
21) TVHC as EQUIV PENTANE	5.67	TIC	937681m	12.48	PPBV	
22) ETHYL ETHER	5.69	74	57035	10.65	PPBV	99
23) IODOMETHANE	5.88	142	373836	10.03	PPBV	97
24) 1,1-DICHLOROETHYLENE	5.92	96	127422	10.00	PPBV	99
25) CARBON DISULFIDE	6.25	76	394338	10.45	PPBV	100
26) ETHANOL	5.01	45	41593	9.49	PPBV	98
27) BROMOETHENE	5.17	106	140411	10.45	PPBV	99
28) METHYLENE CHLORIDE	6.02	84	113762	9.72	PPBV	95
29) 3-CHLOROPROPENE	6.09	76	58650	10.90	PPBV #	94
30) FREON 113	6.18	151	222445	9.72	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.71	96	133475	10.19	PPBV	96
32) TERTIARY BUTYL ALCOHOL	5.93	59	244634	11.39	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	6.88	73	312158	9.79	PPBV	97
34) TETRAHYDROFURAN	8.18	72	50256	10.77	PPBV	92
35) HEXANE	7.66	57	200651	11.36	PPBV	97
36) VINYL ACETATE	6.99	86	23797	10.94	PPBV #	74
37) 1,1-DICHLOROETHANE	6.89	63	246111	10.88	PPBV	98
38) METHYL ETHYL KETONE	7.19	72	48436	10.44	PPBV #	86
39) cis-1,2-DICHLOROETHYLENE	7.62	96	131871	10.19	PPBV	97
40) DIISOPROPYL ETHER	7.66	45	340878	11.26	PPBV	98
41) ETHYL ACETATE	7.75	61	29433	9.84	PPBV	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:53 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.84	83	272354	10.14	PPBV	99
43)	2,4-DIMETHYLPENTANE	8.42	57	225338	11.21	PPBV	99
44)	1,1,1-TRICHLOROETHANE	8.70	97	282669	9.81	PPBV	98
45)	CARBON TETRACHLORIDE	9.27	117	302556	10.06	PPBV	100
46)	1,2-DICHLOROETHANE	8.48	62	185699	10.59	PPBV	99
48)	BENZENE	9.13	78	391085	11.04	PPBV	99
49)	CYCLOHEXANE	9.32	56	201424	11.41	PPBV	92
50)	2,3-DIMETHYLPENTANE	9.49	71	84942	10.69	PPBV	98
51)	TRICHLOROETHYLENE	10.09	95	171174	10.67	PPBV	98
52)	1,2-DICHLOROPROPANE	9.85	63	137306	10.76	PPBV	94
53)	BROMODICHLOROMETHANE	10.08	83	280677	11.34	PPBV	100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	594615	11.39	PPBV	99
55)	1,4-DIOXANE	10.13	88	70258	10.05	PPBV	94
56)	HEPTANE	10.27	43	235034	11.34	PPBV	96
57)	TVHC as EQUIV HEPTANE	10.27	TIC	1497146m	11.22	PPBV	
58)	METHYL METHACRYLATE	10.28	69	101654	10.98	PPBV	91
59)	METHYL ISOBUTYL KETONE	10.91	43	227412	11.90	PPBV	97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	205930	11.50	PPBV	100
61)	TOLUENE	11.88	92	257616	10.94	PPBV	99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	192282	11.63	PPBV	98
63)	1,1,2-TRICHLOROETHANE	11.62	83	122944	11.36	PPBV	98
65)	2-HEXANONE	12.11	43	206417	12.09	PPBV	98
66)	TETRACHLOROETHYLENE	13.03	164	201061	9.61	PPBV	98
67)	DIBROMOCHLOROMETHANE	12.33	129	280008	11.59	PPBV	100
68)	1,2-DIBROMOETHANE	12.55	107	214732	11.23	PPBV	99
69)	OCTANE	12.78	43	302219	11.46	PPBV	95
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	196838	9.90	PPBV	99
71)	CHLOROBENZENE	13.76	112	333219	10.40	PPBV	98
72)	ETHYLBENZENE	14.12	91	513319	10.52	PPBV	99
73)	m,p-XYLENE	14.30	106	386194	20.90	PPBV	100
74)	o-XYLENE	14.82	106	184476	10.49	PPBV	99
75)	STYRENE	14.72	104	257115	11.42	PPBV	100
76)	NONANE	14.97	43	279021	11.49	PPBV	97
77)	BROMOFORM	14.43	173	245766	11.52	PPBV	100
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	235305	10.47	PPBV	99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	185188	10.58	PPBV	95
81)	ISOPROPYLBENZENE	15.46	105	519559	10.04	PPBV	100
82)	2-CHLOROTOLUENE	16.04	126	125217	10.74	PPBV	99
83)	n-PROPYLBENZENE	16.05	120	134289	9.87	PPBV	100
84)	4-ETHYLTOLUENE	16.22	105	440954	9.88	PPBV	100
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	370862	9.87	PPBV	100
86)	tert-BUTYLBENZENE	16.79	134	93910	9.43	PPBV	99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	341407	10.15	PPBV	99
88)	m-DICHLOROBENZENE	17.01	146	220656	10.24	PPBV	99
89)	BENZYL CHLORIDE	17.00	91	225025	10.92	PPBV	99
90)	p-DICHLOROBENZENE	17.08	146	205000	10.00	PPBV	99
91)	sec-BUTYLBENZENE	17.11	134	108674	9.66	PPBV	94
92)	p-ISOPROPYLTOLUENE	17.29	134	106918	9.35	PPBV	99
93)	o-DICHLOROBENZENE	17.50	146	196469	10.07	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:53 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

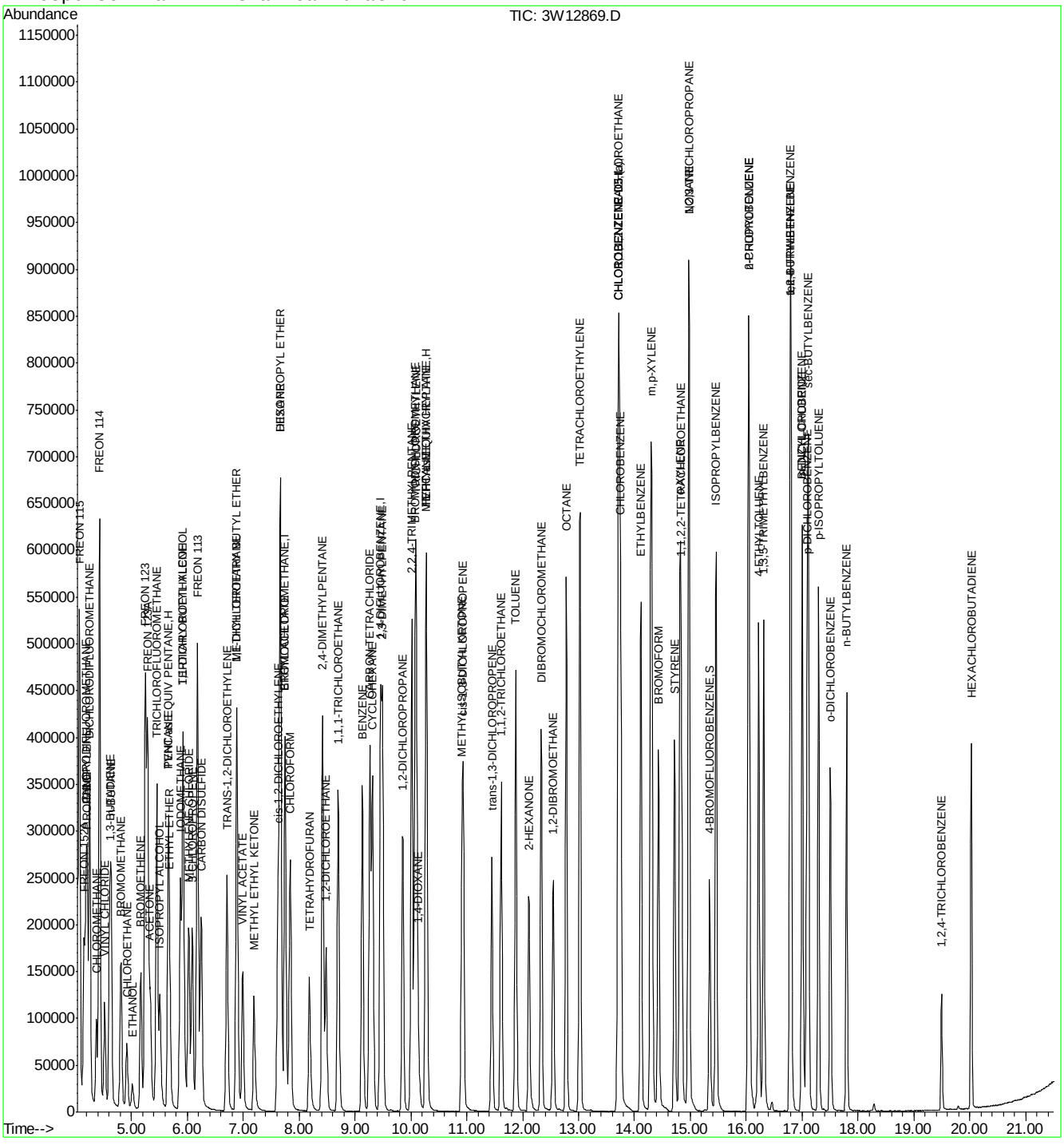
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	80588	10.81	PPBV	93
95)	HEXACHLOROBUTADIENE	20.03	225	88078	11.55	PPBV	99
96)	1,2,4-TRICHLOROBENZENE	19.49	180	48912	13.14	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

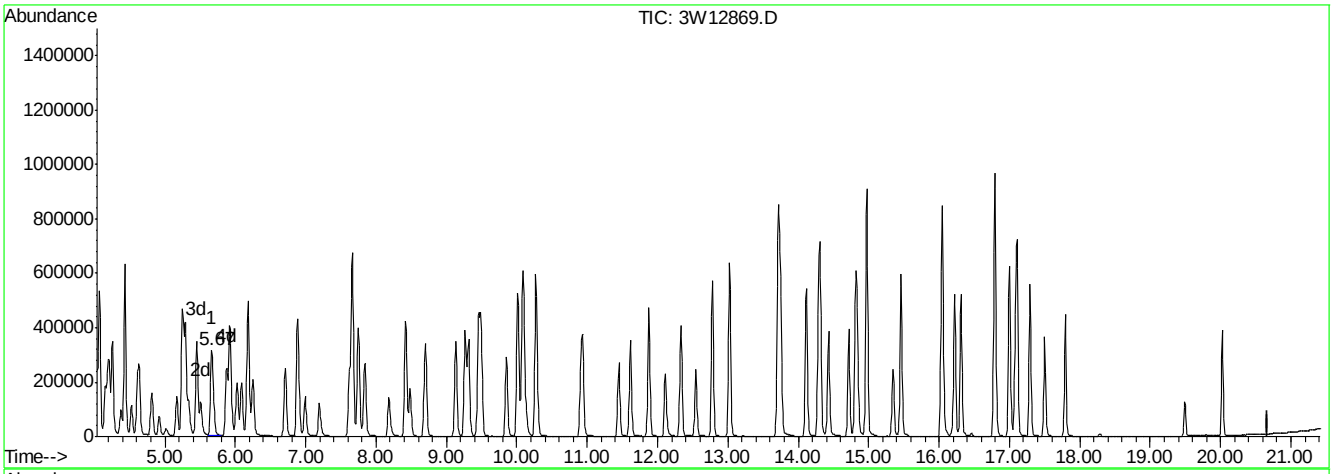


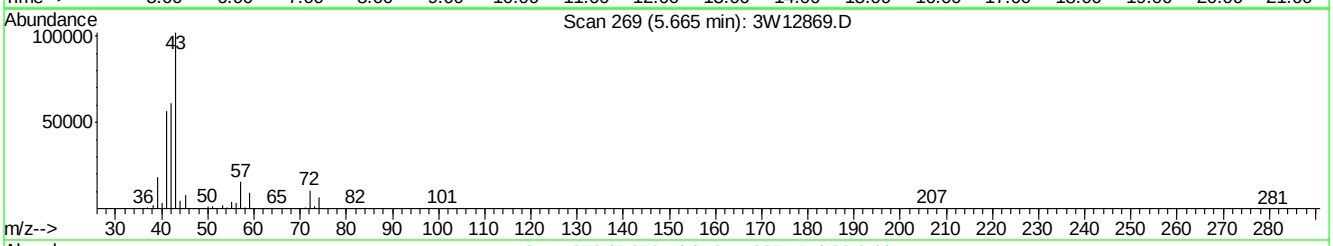
ACCUTEST Laboratories JA28237

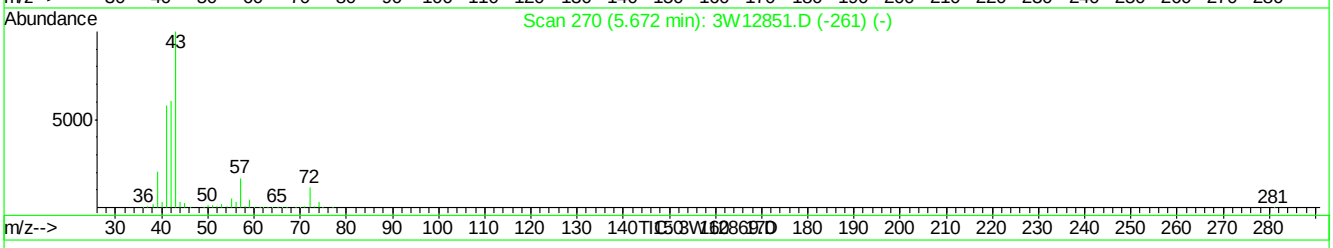
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.48PPBV m

response 937681

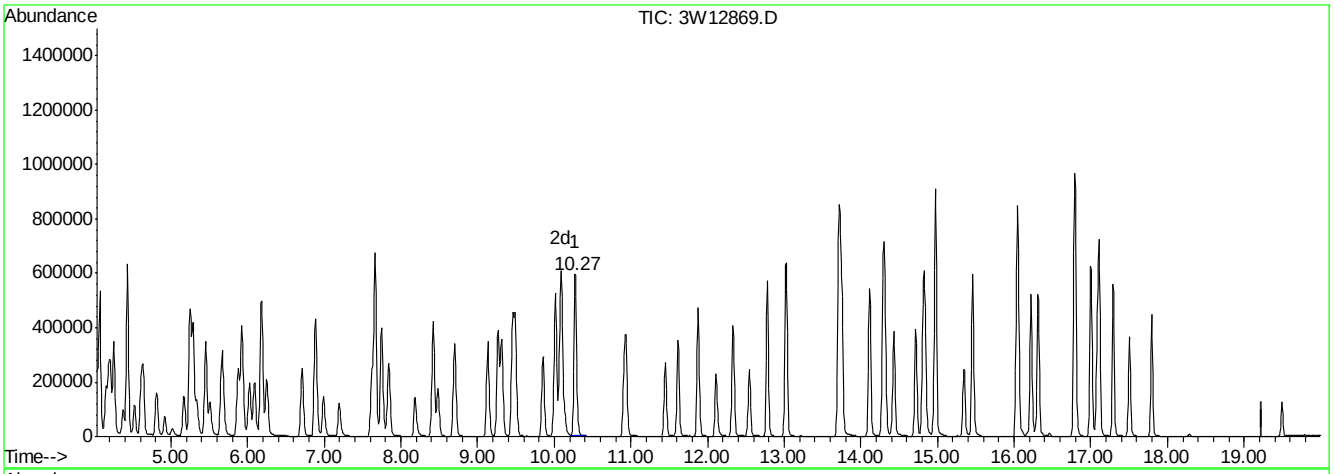
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12869.D M3W523.M Tue Oct 06 13:02:47 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12869.D Vial: 3
Acq On : 5 Oct 2009 11:00 am Operator: YOUMINH
Sample : BSD Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:31 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.27min 11.22PPBV m

response 1497146

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12869.D M3W523.M Tue Oct 06 13:02:49 2009 MS3W

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	9.948	128	153257	10.00	PPBV		0.00
46) 1,4-DIFLUOROBENZENE	11.883	114	747829	10.00	PPBV		0.00
63) CHLOROBENZENE-D5	16.403	82	395550	10.00	PPBV		0.00
95) CHLOROBENZENE-D5(A)	16.403	82	395398	10.00	PPBV		0.00
System Monitoring Compounds							
77) 4-BROMOFLUOROBENZENE	18.045	95	228349	5.67	PPBV		0.00
Spiked Amount 5.000	Range 65 - 128		Recovery	=	113.40%		
Target Compounds							Qvalue
2) FREON 115	5.014	119	158803	10.07	PPBV		96
3) DICHLORODIFLUOROMETHANE	5.008	85	237305	9.96	PPBV		99
4) FREON 152A	5.130	65	146789	8.98	PPBV		96
5) CHLORODIFLUOROMETHANE	5.172	67	55127	8.64	PPBV		99
6) PROPYLENE	5.215	41	222325	8.28	PPBV		99
7) PROPANE	5.239	43	79926	7.65	PPBV	#	100
8) FREON 114	5.556	85	576126	9.18	PPBV		96
9) CHLOROMETHANE	5.458	52	77476	8.61	PPBV		96
10) VINYL CHLORIDE	5.689	62	261421	9.30	PPBV		99
11) 1,3-BUTADIENE	5.823	54	197385	9.18	PPBV		95
12) n-BUTANE	5.878	43	393979	8.51	PPBV		98
13) BROMOMETHANE	6.109	94	218902	9.73	PPBV		99
14) CHLOROETHANE	6.280	64	145038	9.76	PPBV		98
15) FREON 123	6.748	83	462128	9.52	PPBV	#	99
16) FREON 123A	6.809	117	250411	9.45	PPBV		93
17) TRICHLOROFLUOROMETHANE	7.052	101	487256	9.15	PPBV		100
18) ISOPROPYL ALCOHOL	7.083	45	345492	8.81	PPBV		99
19) ACETONE	6.857	58	96712	8.67	PPBV		92
20) PENTANE	7.393	42	266182	8.54	PPBV		99
21) TVHC as EQUIV PENTANE	7.393	TIC	1653447m	9.24	PPBV		
22) ETHYL ETHER	7.387	74	104445	9.78	PPBV		95
23) IODOMETHANE	7.624	142	525535	10.03	PPBV		99
24) 1,1-DICHLOROETHYLENE	7.685	96	194256	9.24	PPBV		93
25) CARBON DISULFIDE	8.147	76	656021	9.14	PPBV		98
26) ETHANOL	6.383	45	78588	8.58	PPBV		99
27) BROMOETHENE	6.638	106	207170	10.02	PPBV		99
28) METHYLENE CHLORIDE	7.788	84	185866	8.80	PPBV		94
29) 3-CHLOROPROPENE	7.916	76	102896	9.67	PPBV	#	86
30) FREON 113	8.050	151	312126	9.41	PPBV		98
31) TRANS-1,2-DICHLOROETHY...	8.731	96	233826	9.40	PPBV		95
32) TERTIARY BUTYL ALCOHOL	7.685	59	386251	8.70	PPBV		96
33) METHYL TERTIARY BUTYL ...	8.969	73	544267	9.28	PPBV		98
34) TETRAHYDROFURAN	10.477	42	275456	9.15	PPBV		94
35) HEXANE	9.972	57	339248	9.10	PPBV		97
36) VINYL ACETATE	9.041	86	48138	9.82	PPBV	#	83
37) 1,1-DICHLOROETHANE	8.932	63	430386	9.21	PPBV		99
38) METHYL ETHYL KETONE	9.303	72	108448	9.64	PPBV	#	86
39) cis-1,2-DICHLOROETHYLENE	9.772	96	230794	9.48	PPBV		96
40) ETHYL ACETATE	9.942	61	64397	9.08	PPBV	#	86

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41) CHLOROFORM	10.070	83	422269	9.49	PPBV		99
42) 2,4-DIMETHYLPENTANE	10.867	57	408054	9.33	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.092	97	431276	9.47	PPBV		99
44) CARBON TETRACHLORIDE	11.712	117	449638	9.51	PPBV		100
45) 1,2-DICHLOROETHANE	10.818	62	298743	9.35	PPBV		99
47) BENZENE	11.560	78	702589	9.10	PPBV		99
48) CYCLOHEXANE	11.846	84	306411	8.85	PPBV		95
49) 2,3-DIMETHYLPENTANE	12.053	71	152855	9.51	PPBV		96
50) TRICHLOROETHYLENE	12.619	95	257259	9.16	PPBV		99
51) 1,2-DICHLOROPROPANE	12.381	63	271245	9.44	PPBV		99
52) BROMODICHLOROMETHANE	12.576	83	442145	9.64	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.643	57	921815	8.70	PPBV		100
54) 1,4-DIOXANE	12.613	88	129417	9.20	PPBV	#	70
55) METHYL METHACRYLATE	12.771	69	216521	9.67	PPBV		93
56) HEPTANE	12.892	43	406026	8.69	PPBV		96
57) TVHC as EQUIV HEPTANE	12.892	TIC	1730384m	9.20	PPBV		
58) METHYL ISOBUTYL KETONE	13.507	43	467686	8.67	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.489	75	370373	9.90	PPBV		96
60) TOLUENE	14.523	92	462903	9.88	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.024	75	346447	9.82	PPBV		97
62) 1,1,2-TRICHLOROETHANE	14.225	83	220669	9.67	PPBV		98
64) 2-HEXANONE	14.760	58	225850	8.07	PPBV		96
65) TETRACHLOROETHYLENE	15.727	164	285554	9.18	PPBV		100
66) DIBROMOCHLOROMETHANE	14.979	129	430466	9.94	PPBV		100
67) 1,2-DIBROMOETHANE	15.241	107	357466	9.44	PPBV		100
68) OCTANE	15.514	43	508271	9.14	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.433	131	280518	9.65	PPBV	#	99
70) CHLOROBENZENE	16.457	112	484363	8.98	PPBV		99
71) ETHYLBENZENE	16.847	91	857019	9.45	PPBV		99
72) m,p-XYLENE	17.041	106	625614	19.09	PPBV		97
73) o-XYLENE	17.558	106	297461	9.72	PPBV		98
74) STYRENE	17.437	104	464682	10.63	PPBV		99
75) NONANE	17.741	43	441493	9.70	PPBV		97
76) BROMOFORM	17.163	173	354625	10.55	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.546	83	360127	9.76	PPBV		100
79) ISOPROPYLBENZENE	18.179	105	800275	9.98	PPBV		99
80) 2-CHLOROTOLUENE	18.708	126	188973	10.42	PPBV	#	92
81) n-PROPYLBENZENE	18.733	120	202022	10.50	PPBV		95
82) 4-ETHYLTOLUENE	18.885	105	662113	10.65	PPBV		99
83) 1,3,5-TRIMETHYLBENZENE	18.964	105	546330	10.49	PPBV		100
84) TERT-BUTYLBENZENE	19.414	134	136346	10.45	PPBV		98
85) 1,2,4-TRIMETHYLBENZENE	19.420	105	468663	10.73	PPBV		99
86) m-DICHLOROBENZENE	19.603	146	267164	10.27	PPBV		100
87) BENZYL CHLORIDE	19.578	91	265550	9.74	PPBV		99
88) p-DICHLOROBENZENE	19.676	146	239302	9.97	PPBV		100
89) SEC-BUTYLBENZENE	19.712	134	144641	10.48	PPBV		98
90) p-ISOPROPYLTOLUENE	19.876	134	139317	10.86	PPBV		99
91) o-DICHLOROBENZENE	20.059	146	223088	10.40	PPBV		100
92) n-BUTYLBENZENE	20.345	134	88834	10.32	PPBV		98
93) HEXACHLOROBUTADIENE	22.425	225	57866	7.65	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

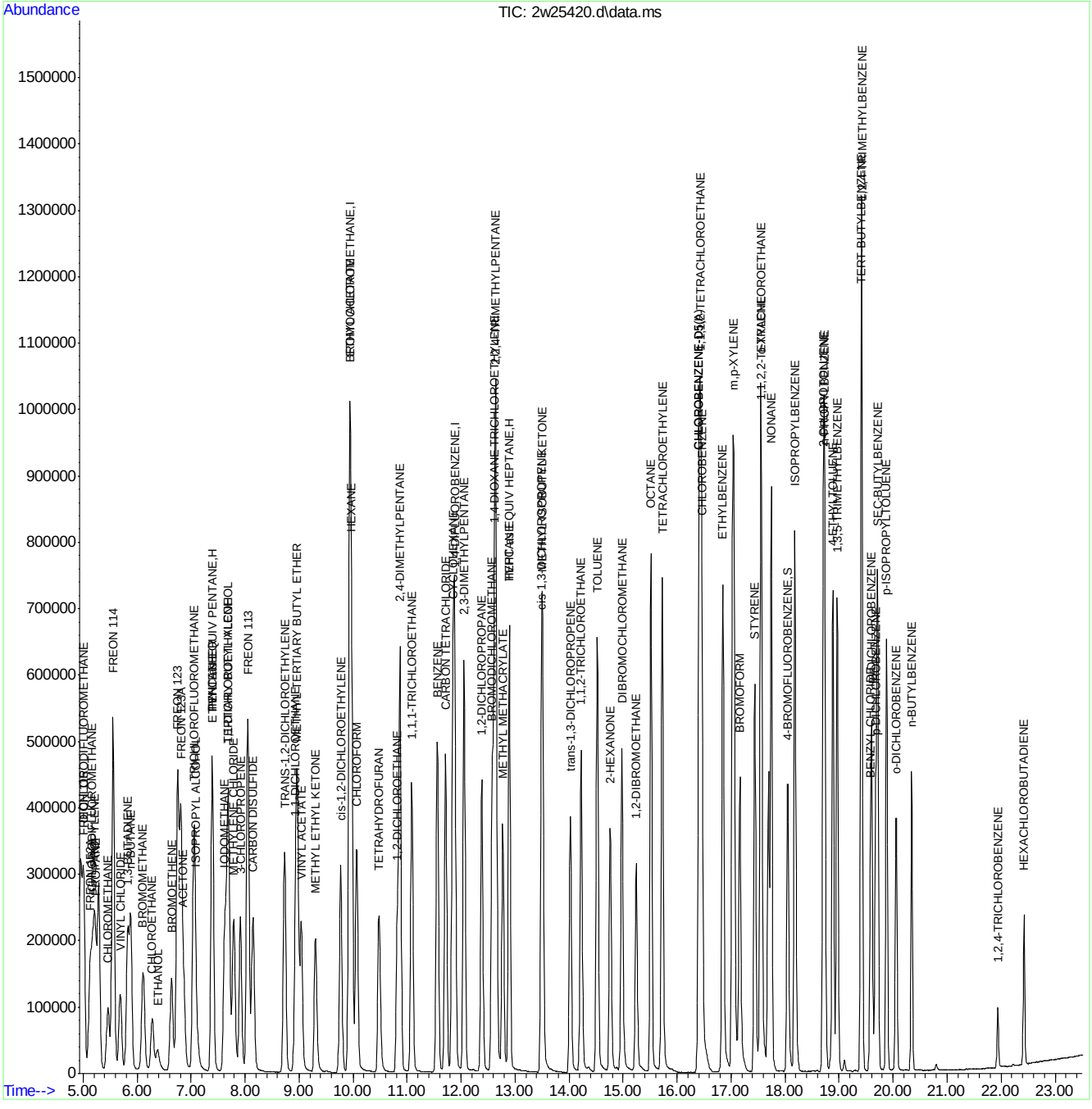
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.939	180	37566	7.71	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:13 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

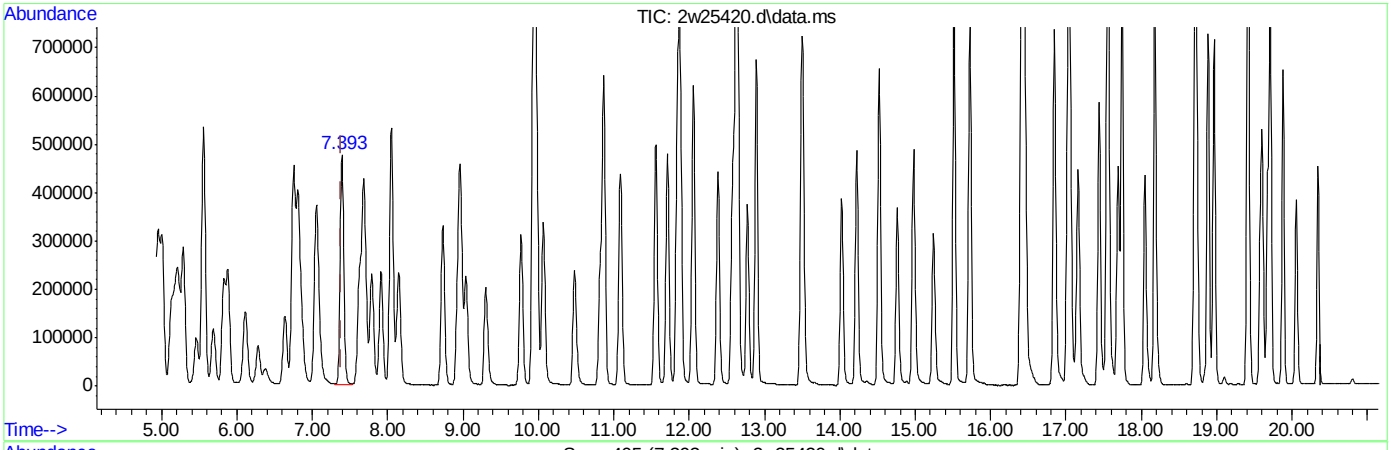


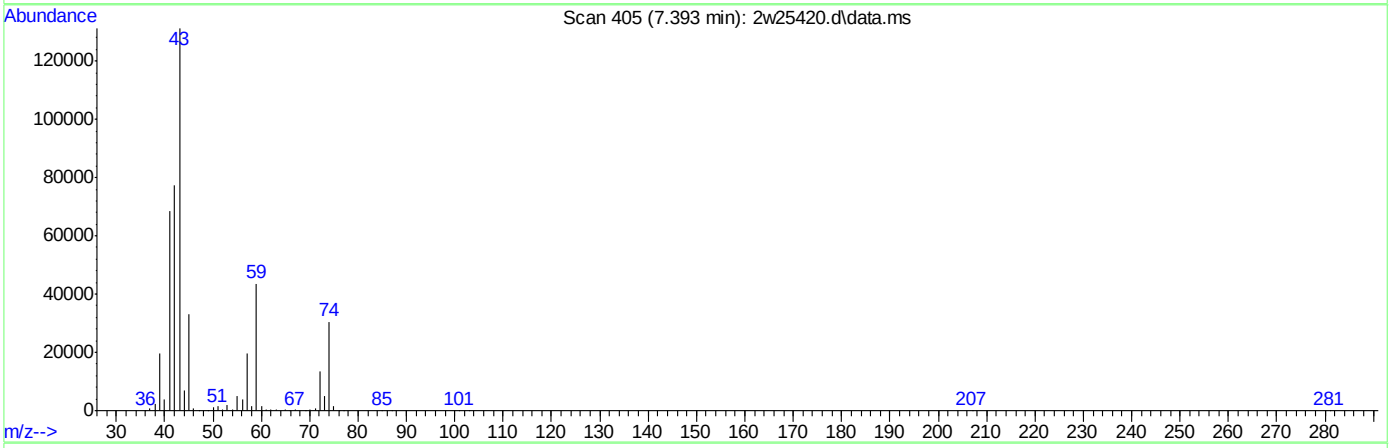
ACCUTEST Laboratories JA28237

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:15:24 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25420.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.393min (+0.000) 9.24PPBV m

response 1653447

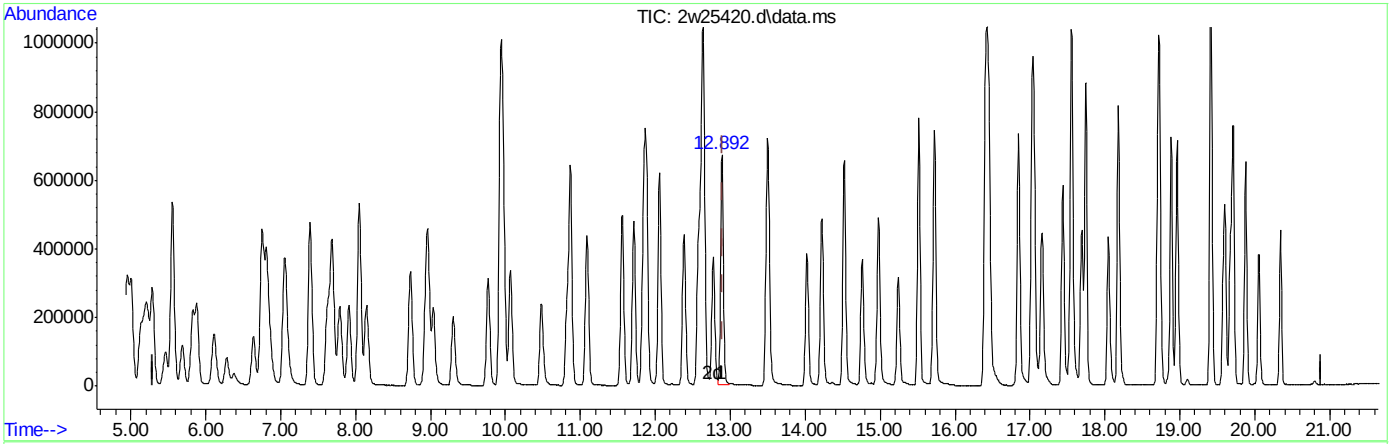
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

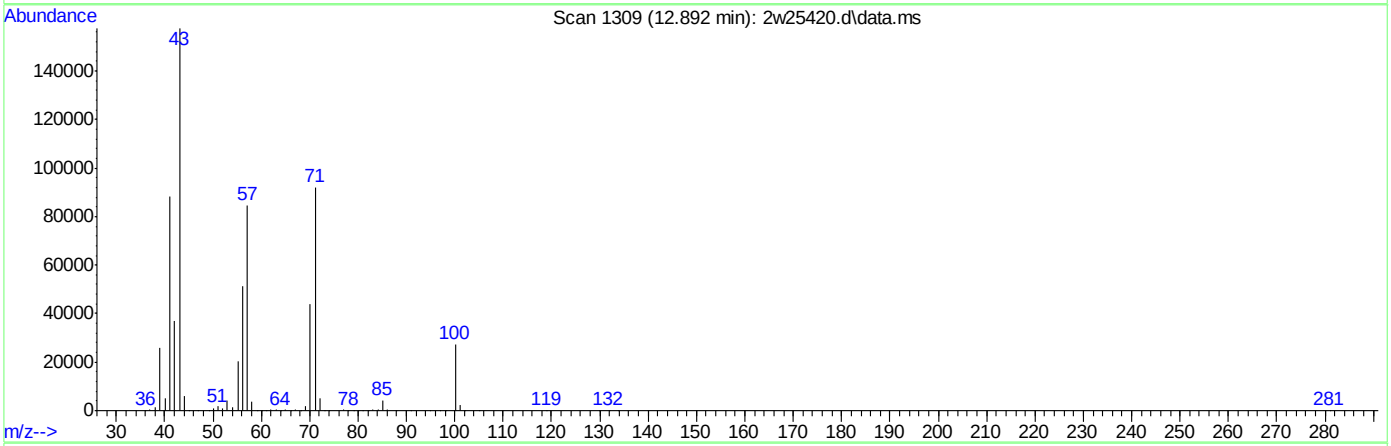
ACCUTEST Laboratories JA28237

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25420.d
Acq On : 9 Sep 2009 11:23 am
Operator : YOUMINH
Sample : BS
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:15:24 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25420.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.892min (-0.006) 9.20PPBV m

response 1730384

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
Internal Standards							
1) BROMOCHLOROMETHANE	9.954	128	153051	10.00	PPBV		0.00
46) 1,4-DIFLUOROBENZENE	11.889	114	740990	10.00	PPBV		0.00
63) CHLOROBENZENE-D5	16.409	82	381950	10.00	PPBV		0.00
95) CHLOROBENZENE-D5(A)	16.409	82	381950	10.00	PPBV		0.00
System Monitoring Compounds							
77) 4-BROMOFLUOROBENZENE	18.051	95	222345	5.71	PPBV		0.00
Spiked Amount 5.000	Range 65 - 128		Recovery	=	114.20%		
Target Compounds							Qvalue
2) FREON 115	5.020	119	167617	10.64	PPBV		96
3) DICHLORODIFLUOROMETHANE	5.020	85	251313	10.57	PPBV		99
4) FREON 152A	5.136	65	146848	9.00	PPBV		97
5) CHLORODIFLUOROMETHANE	5.184	67	55632	8.73	PPBV		99
6) PROPYLENE	5.227	41	220645	8.23	PPBV		98
7) PROPANE	5.245	43	77819	7.46	PPBV	#	100
8) FREON 114	5.562	85	576250	9.19	PPBV		97
9) CHLOROMETHANE	5.470	52	78280	8.72	PPBV		93
10) VINYL CHLORIDE	5.695	62	261481	9.32	PPBV		100
11) 1,3-BUTADIENE	5.835	54	197153	9.18	PPBV		95
12) n-BUTANE	5.890	43	394760	8.54	PPBV		98
13) BROMOMETHANE	6.121	94	218235	9.71	PPBV		100
14) CHLOROETHANE	6.286	64	143727	9.69	PPBV		98
15) FREON 123	6.760	83	466343	9.62	PPBV	#	100
16) FREON 123A	6.821	117	252867	9.55	PPBV		92
17) TRICHLOROFLUOROMETHANE	7.058	101	494701	9.30	PPBV		100
18) ISOPROPYL ALCOHOL	7.101	45	349195	8.92	PPBV		97
19) ACETONE	6.870	58	99692	8.94	PPBV	#	90
20) PENTANE	7.399	42	262130	8.42	PPBV		99
21) TVHC as EQUIV PENTANE	7.399	TIC	1640785m	9.18	PPBV		
22) ETHYL ETHER	7.399	74	106290	9.97	PPBV		94
23) IODOMETHANE	7.636	142	524337	10.02	PPBV		98
24) 1,1-DICHLOROETHYLENE	7.697	96	192669	9.17	PPBV		93
25) CARBON DISULFIDE	8.153	76	654781	9.13	PPBV		98
26) ETHANOL	6.389	45	77937	8.52	PPBV		95
27) BROMOETHENE	6.645	106	208591	10.10	PPBV		100
28) METHYLENE CHLORIDE	7.794	84	182250	8.64	PPBV		93
29) 3-CHLOROPROPENE	7.922	76	101180	9.52	PPBV	#	87
30) FREON 113	8.056	151	312839	9.44	PPBV		97
31) TRANS-1,2-DICHLOROETHY...	8.737	96	232858	9.37	PPBV		95
32) TERTIARY BUTYL ALCOHOL	7.697	59	405668	9.15	PPBV		99
33) METHYL TERTIARY BUTYL ...	8.975	73	550737	9.40	PPBV		98
34) TETRAHYDROFURAN	10.489	42	273585	9.10	PPBV		94
35) HEXANE	9.978	57	335059	9.00	PPBV		97
36) VINYL ACETATE	9.048	86	48496	9.91	PPBV	#	85
37) 1,1-DICHLOROETHANE	8.944	63	426308	9.13	PPBV		99
38) METHYL ETHYL KETONE	9.309	72	107663	9.58	PPBV	#	87
39) cis-1,2-DICHLOROETHYLENE	9.778	96	229973	9.46	PPBV		95
40) ETHYL ACETATE	9.954	61	63083	8.91	PPBV	#	89

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41) CHLOROFORM	10.070	83	421302	9.48	PPBV		99
42) 2,4-DIMETHYLPENTANE	10.873	57	403596	9.24	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.092	97	427948	9.41	PPBV		98
44) CARBON TETRACHLORIDE	11.718	117	446234	9.45	PPBV		100
45) 1,2-DICHLOROETHANE	10.830	62	294283	9.23	PPBV		99
47) BENZENE	11.566	78	692166	9.05	PPBV		99
48) CYCLOHEXANE	11.852	84	301937	8.81	PPBV		96
49) 2,3-DIMETHYLPENTANE	12.059	71	152023	9.55	PPBV		96
50) TRICHLOROETHYLENE	12.625	95	255946	9.19	PPBV		98
51) 1,2-DICHLOROPROPANE	12.387	63	269564	9.47	PPBV		100
52) BROMODICHLOROMETHANE	12.582	83	439357	9.67	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.649	57	916827	8.73	PPBV		100
54) 1,4-DIOXANE	12.631	88	125639	9.02	PPBV	#	1
55) METHYL METHACRYLATE	12.783	69	214057	9.65	PPBV		93
56) HEPTANE	12.898	43	400703	8.66	PPBV		95
57) TVHC as EQUIV HEPTANE	12.898	TIC	1722808m	9.25	PPBV		
58) METHYL ISOBUTYL KETONE	13.519	43	460309	8.62	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.495	75	367518	9.92	PPBV		97
60) TOLUENE	14.529	92	459430	9.89	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.030	75	345463	9.88	PPBV		97
62) 1,1,2-TRICHLOROETHANE	14.225	83	219840	9.72	PPBV		98
64) 2-HEXANONE	14.772	58	225368	8.34	PPBV		95
65) TETRACHLOROETHYLENE	15.727	164	284900	9.49	PPBV		99
66) DIBROMOCHLOROMETHANE	14.985	129	430220	10.29	PPBV		99
67) 1,2-DIBROMOETHANE	15.247	107	354935	9.71	PPBV		99
68) OCTANE	15.520	43	500544	9.32	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.433	131	282201	10.06	PPBV	#	100
70) CHLOROBENZENE	16.463	112	485850	9.33	PPBV		98
71) ETHYLBENZENE	16.853	91	856999	9.79	PPBV		99
72) m,p-XYLENE	17.047	106	632152	19.98	PPBV		96
73) o-XYLENE	17.565	106	300958	10.18	PPBV		98
74) STYRENE	17.443	104	465885	11.03	PPBV		99
75) NONANE	17.747	43	441506	10.05	PPBV		97
76) BROMOFORM	17.163	173	357412	11.01	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.552	83	362819	10.19	PPBV		99
79) ISOPROPYLBENZENE	18.185	105	811877	10.49	PPBV		99
80) 2-CHLOROTOLUENE	18.714	126	187002	10.68	PPBV	#	93
81) n-PROPYLBENZENE	18.733	120	205260	11.05	PPBV		91
82) 4-ETHYLTOLUENE	18.885	105	660583	11.01	PPBV		98
83) 1,3,5-TRIMETHYLBENZENE	18.964	105	558643	11.11	PPBV		100
84) TERT-BUTYLBENZENE	19.414	134	138045	10.95	PPBV		96
85) 1,2,4-TRIMETHYLBENZENE	19.420	105	471947	11.19	PPBV		99
86) m-DICHLOROBENZENE	19.609	146	274902	10.94	PPBV		100
87) BENZYL CHLORIDE	19.578	91	264785	10.05	PPBV		99
88) p-DICHLOROBENZENE	19.676	146	237706	10.25	PPBV		100
89) SEC-BUTYLBENZENE	19.712	134	149465	11.21	PPBV		95
90) p-ISOPROPYLTOLUENE	19.882	134	140382	11.33	PPBV		99
91) o-DICHLOROBENZENE	20.059	146	226961	10.95	PPBV		99
92) n-BUTYLBENZENE	20.345	134	89412	10.76	PPBV		97
93) HEXACHLOROBUTADIENE	22.425	225	58824	8.06	PPBV		99

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

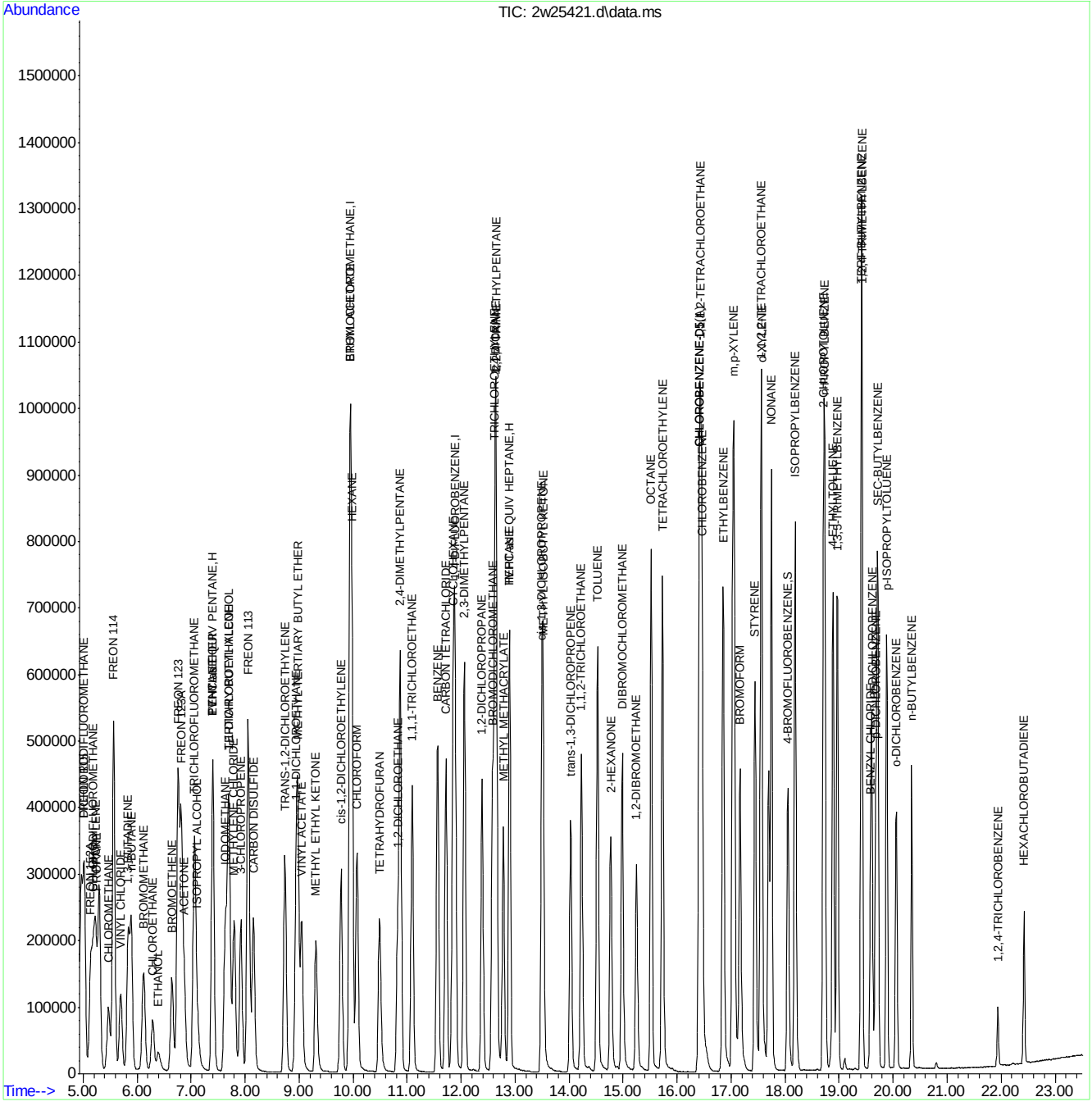
Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.939	180	37816	8.04	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:17:05 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



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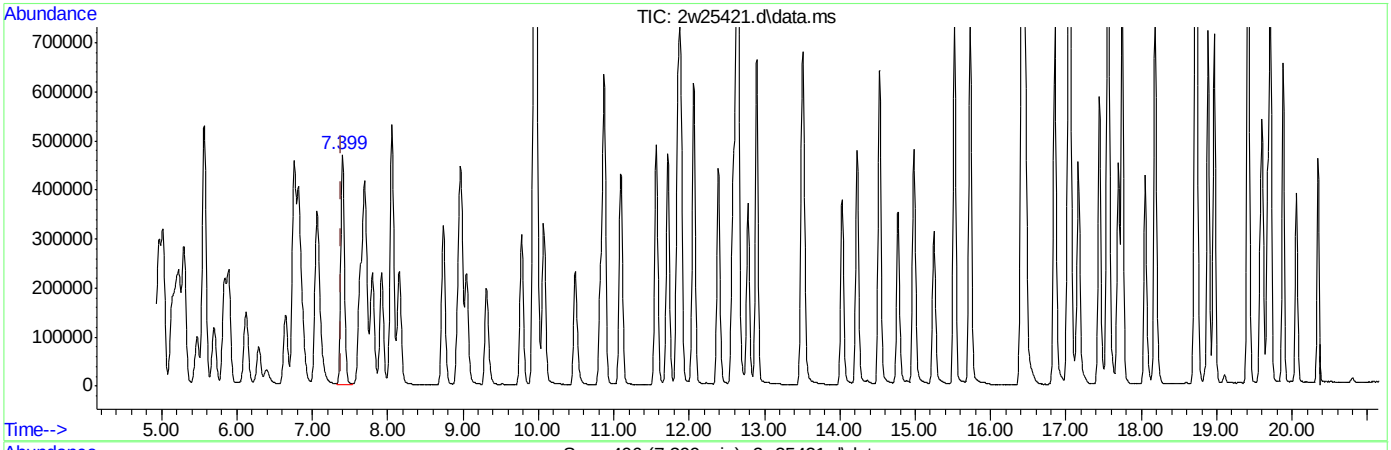
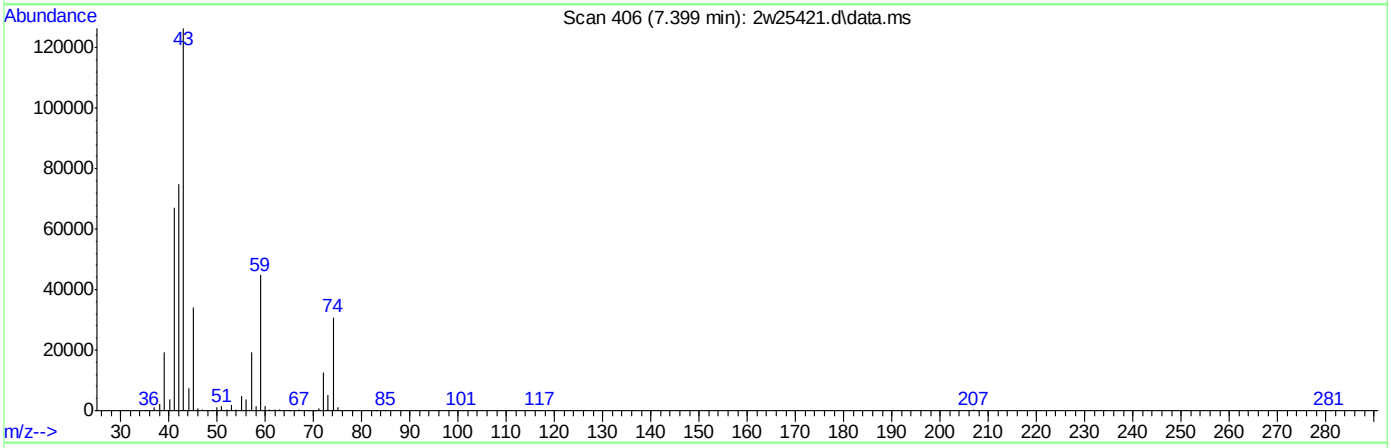
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:39 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25421.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.399min (+0.006) 9.18PPBV m

response 1640785

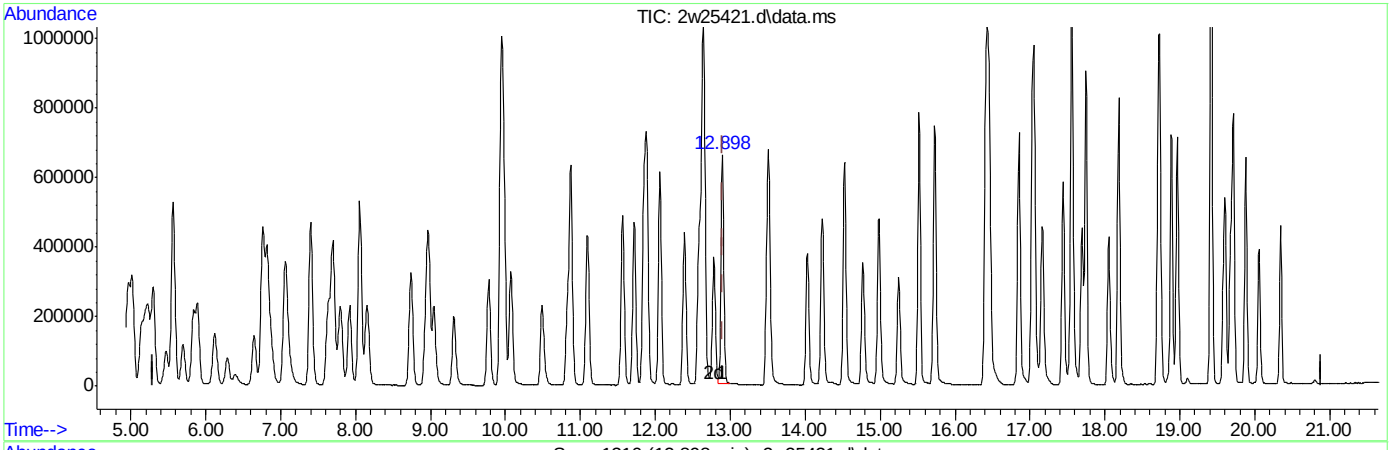
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

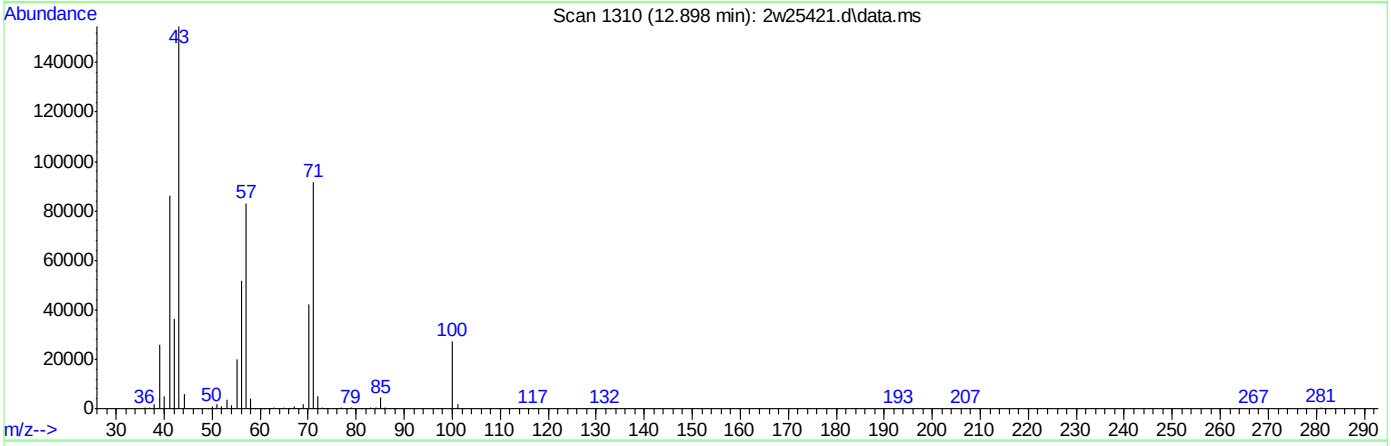
ACCUTEST Laboratories JA28237

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25421.d
Acq On : 9 Sep 2009 12:07 pm
Operator : YOUMINH
Sample : BSD
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Sep 10 09:16:39 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25421.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.898min (+0.000) 9.25PPBV m

response 1722808

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:02 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	117415	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	552536	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	294205	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	294107	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	161641	5.39	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 107.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	103875	8.59	PPBV	99
3) DICHLORODIFLUOROMETHANE	5.01	85	159971	8.77	PPBV	99
4) FREON 152A	5.13	65	125934	10.06	PPBV	95
5) CHLORODIFLUOROMETHANE	5.18	67	47411	9.70	PPBV	96
6) PROPYLENE	5.22	41	195415	9.50	PPBV	100
7) PROPANE	5.23	43	69975	8.74	PPBV #	100
8) FREON 114	5.56	85	498222	10.36	PPBV	99
9) CHLOROMETHANE	5.46	52	68232	9.90	PPBV #	88
10) VINYL CHLORIDE	5.69	62	226062	10.50	PPBV	100
11) 1,3-BUTADIENE	5.83	54	170809	10.36	PPBV	96
12) n-BUTANE	5.88	43	347483	9.80	PPBV	98
13) BROMOMETHANE	6.12	94	184586	10.71	PPBV	100
14) CHLOROETHANE	6.29	64	125921	11.06	PPBV	98
15) FREON 123	6.76	83	402185	10.81	PPBV #	100
16) FREON 123A	6.82	117	212648	10.47	PPBV	97
17) TRICHLOROFLUOROMETHANE	7.06	101	424648	10.41	PPBV	100
18) ISOPROPYL ALCOHOL	7.10	45	293248	9.76	PPBV	98
19) ACETONE	6.88	58	85686	10.02	PPBV #	90
20) PENTANE	7.40	42	229119	9.59	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1394660m	10.18	PPBV	
22) ETHYL ETHER	7.41	74	86786	10.61	PPBV	98
23) IODOMETHANE	7.64	142	421301	10.50	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.70	96	161641	10.03	PPBV	96
25) CARBON DISULFIDE	8.15	76	557058	10.13	PPBV	99
26) ETHANOL	6.40	45	67669	9.64	PPBV	98
27) BROMOETHENE	6.64	106	172056	10.86	PPBV	100
28) METHYLENE CHLORIDE	7.80	84	154087	9.52	PPBV	96
29) 3-CHLOROPROPENE	7.92	76	86455	10.61	PPBV #	88
30) FREON 113	8.06	151	252627	9.94	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	193727	10.16	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.70	59	317136	9.33	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.98	73	444815	9.90	PPBV	99
34) TETRAHYDROFURAN	10.50	42	224432	9.73	PPBV	96
35) HEXANE	9.98	57	288272	10.09	PPBV	97
36) VINYL ACETATE	9.05	86	40558	10.80	PPBV #	87
37) 1,1-DICHLOROETHANE	8.94	63	370597	10.35	PPBV	99
38) METHYL ETHYL KETONE	9.32	72	86729	10.06	PPBV #	90
39) cis-1,2-DICHLOROETHYLENE	9.78	96	191924	10.29	PPBV	97
40) ETHYL ACETATE	9.95	61	52159	9.60	PPBV #	94
41) CHLOROFORM	10.07	83	359758	10.56	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:02 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	347619	10.38 PPBV	100
43) 1,1,1-TRICHLOROETHANE	11.09	97	368054	10.55 PPBV	99
44) CARBON TETRACHLORIDE	11.72	117	380476	10.50 PPBV	100
45) 1,2-DICHLOROETHANE	10.82	62	254858	10.42 PPBV	100
47) BENZENE	11.56	78	594252	10.42 PPBV	99
48) CYCLOHEXANE	11.85	84	254223	9.94 PPBV	98
49) 2,3-DIMETHYLPENTANE	12.06	71	130071	10.95 PPBV	98
50) TRICHLOROETHYLENE	12.62	95	217509	10.48 PPBV	99
51) 1,2-DICHLOROPROPANE	12.39	63	231771	10.92 PPBV	99
52) BROMODICHLOROMETHANE	12.58	83	379341	11.20 PPBV	100
53) 2,2,4-TRIMETHYLPENTANE	12.65	57	808699	10.32 PPBV	100
54) 1,4-DIOXANE	12.64	88	102184	9.84 PPBV #	1
55) METHYL METHACRYLATE	12.78	69	171872	10.39 PPBV	94
56) HEPTANE	12.89	43	355958	10.31 PPBV	98
57) TVHC as EQUIV HEPTANE	12.89	TIC	1485101m	10.69 PPBV	
58) METHYL ISOBUTYL KETONE	13.52	43	381047	9.57 PPBV	98
59) cis-1,3-DICHLOROPROPENE	13.49	75	311052	11.26 PPBV	97
60) TOLUENE	14.52	92	383251	11.07 PPBV	100
61) trans-1,3-DICHLOROPROPENE	14.03	75	287732	11.04 PPBV	97
62) 1,1,2-TRICHLOROETHANE	14.22	83	185187	10.98 PPBV	99
64) 2-HEXANONE	14.77	58	180457	8.67 PPBV	99
65) TETRACHLOROETHYLENE	15.73	164	231557	10.01 PPBV	99
66) DIBROMOCHLOROMETHANE	14.98	129	355835	11.05 PPBV	100
67) 1,2-DIBROMOETHANE	15.25	107	294193	10.45 PPBV	100
68) OCTANE	15.52	43	441609	10.68 PPBV	97
69) 1,1,1,2-TETRACHLOROETHANE	16.43	131	234861	10.86 PPBV #	99
70) CHLOROBENZENE	16.46	112	402120	10.02 PPBV	100
71) ETHYLBENZENE	16.85	91	718893	10.66 PPBV	100
72) m,p-XYLENE	17.04	106	521768	21.41 PPBV	99
73) o-XYLENE	17.56	106	249200	10.95 PPBV	100
74) STYRENE	17.44	104	377607	11.61 PPBV	100
75) NONANE	17.75	43	386483	11.42 PPBV	98
76) BROMOFORM	17.16	173	290452	11.61 PPBV	100
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	306350	11.17 PPBV	100
79) ISOPROPYLBENZENE	18.18	105	682262	11.44 PPBV	100
80) 2-CHLOROTOLUENE	18.71	126	155315	11.51 PPBV	99
81) n-PROPYLBENZENE	18.73	120	167245	11.69 PPBV	99
82) 4-ETHYLTOLUENE	18.88	105	545482	11.80 PPBV	99
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	459758	11.87 PPBV	98
84) TERT-BUTYLBENZENE	19.41	134	111681	11.50 PPBV	99
85) 1,2,4-TRIMETHYLBENZENE	19.42	105	388938	11.97 PPBV	99
86) m-DICHLOROBENZENE	19.60	146	217854	11.26 PPBV	100
87) BENZYL CHLORIDE	19.58	91	219796	10.83 PPBV	100
88) p-DICHLOROBENZENE	19.68	146	193051	10.81 PPBV	100
89) SEC-BUTYLBENZENE	19.71	134	118686	11.56 PPBV	97
90) p-ISOPROPYLTOLUENE	19.88	134	110796	11.61 PPBV	99
91) o-DICHLOROBENZENE	20.06	146	180874	11.33 PPBV	99
92) n-BUTYLBENZENE	20.34	134	71665	11.20 PPBV	97
93) HEXACHLOROBUTADIENE	22.43	225	52795	9.39 PPBV	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:02 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

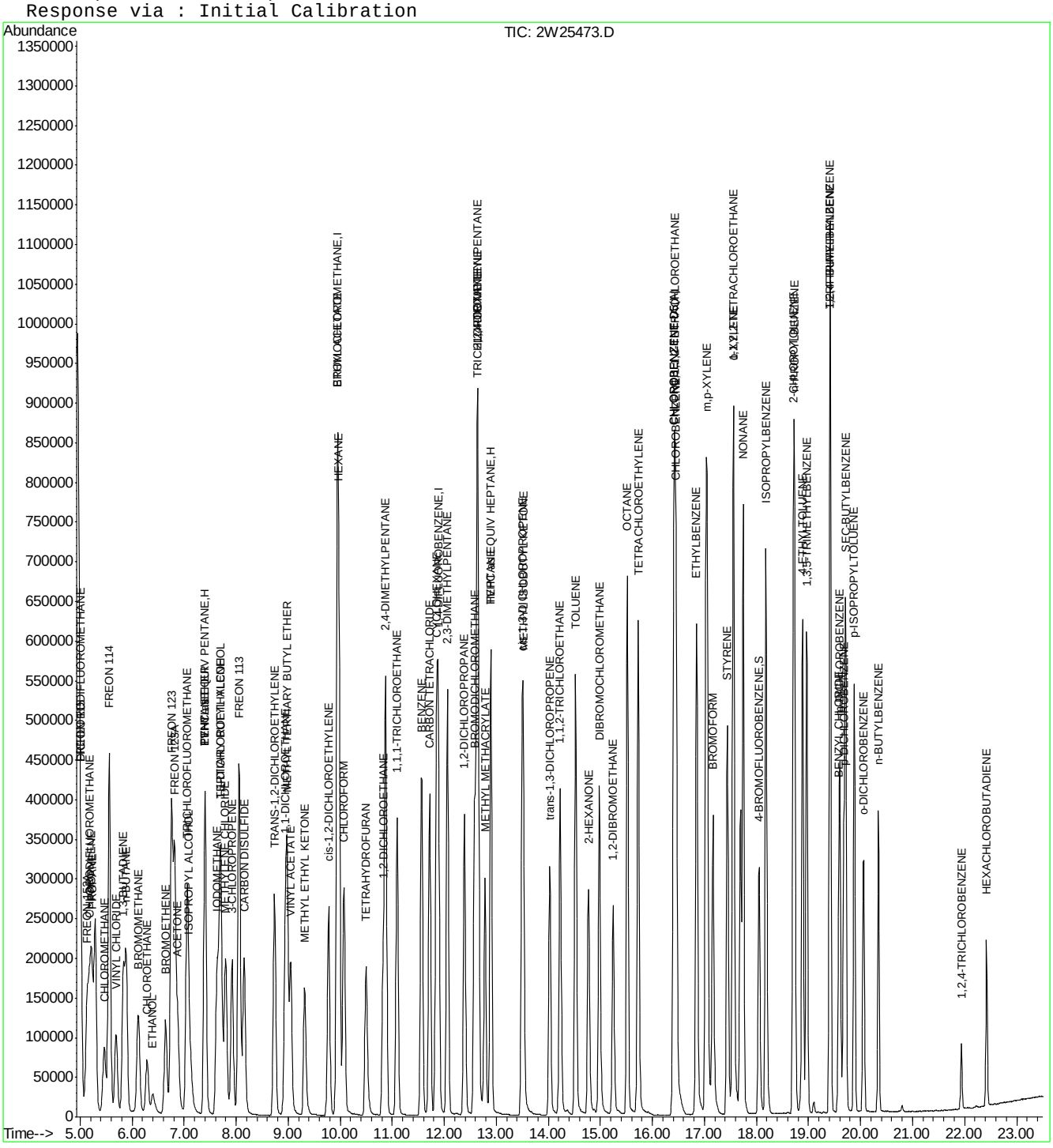
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	34290	9.46	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: M2W1070.RES

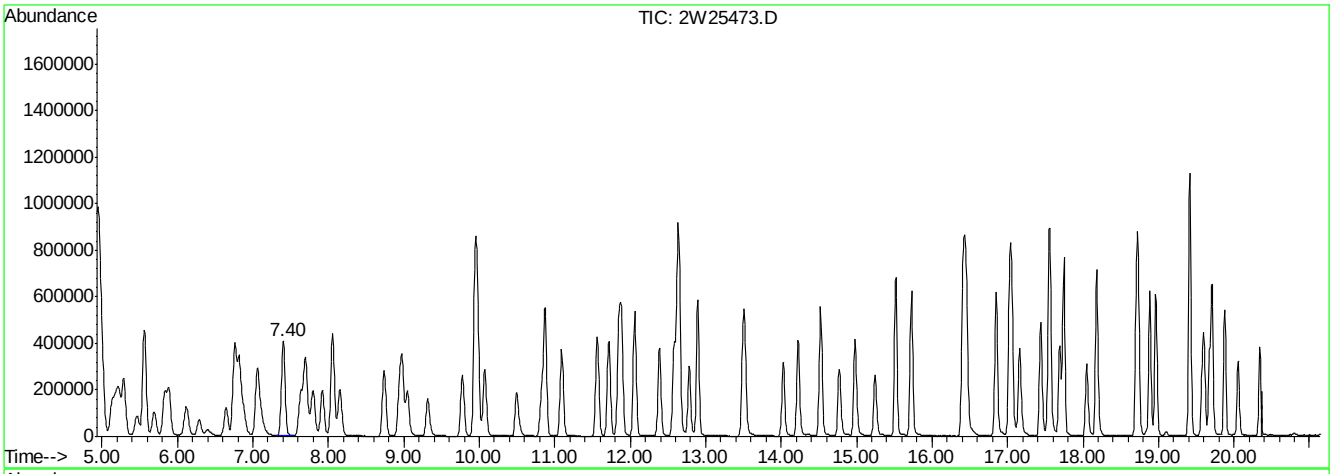
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

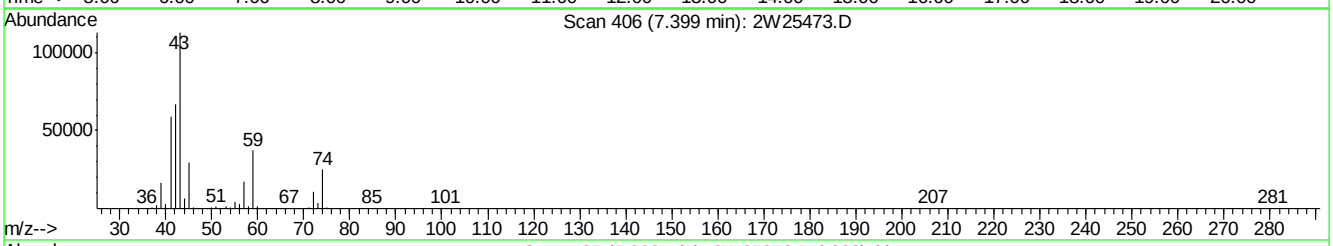


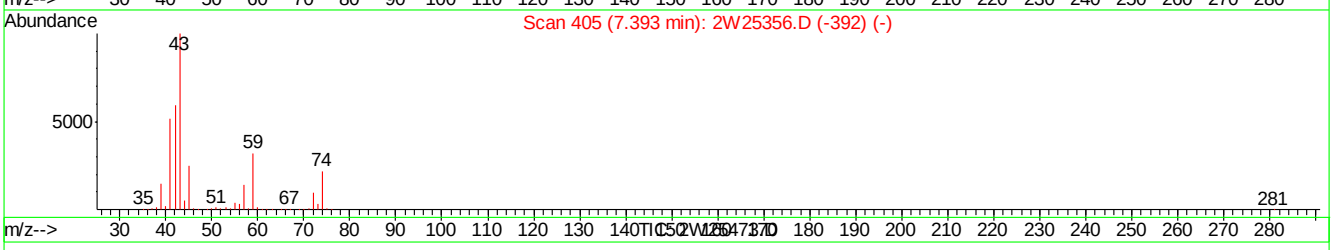
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 10.18PPBV m

response 1394660

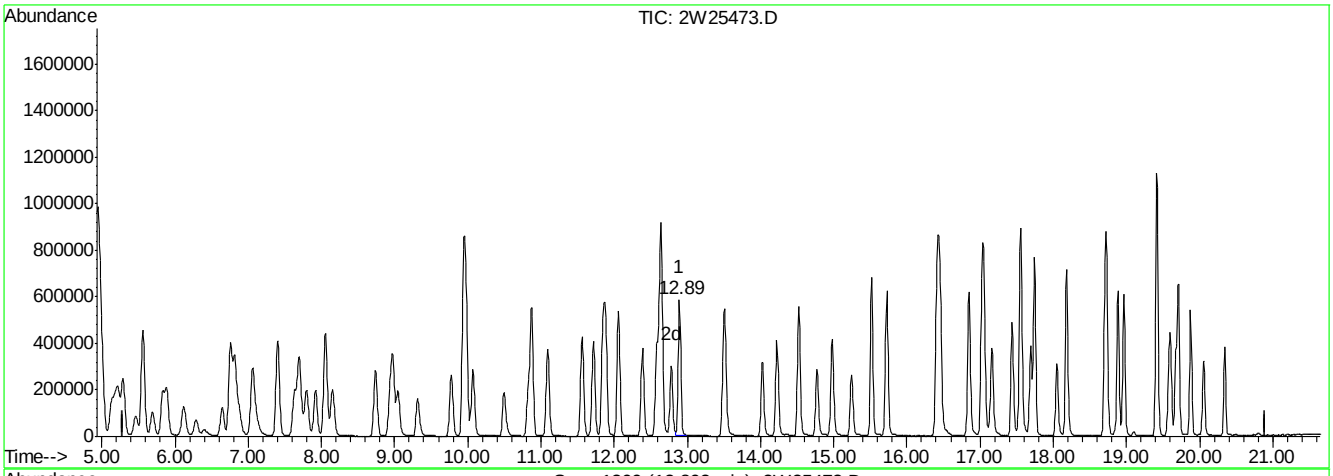
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

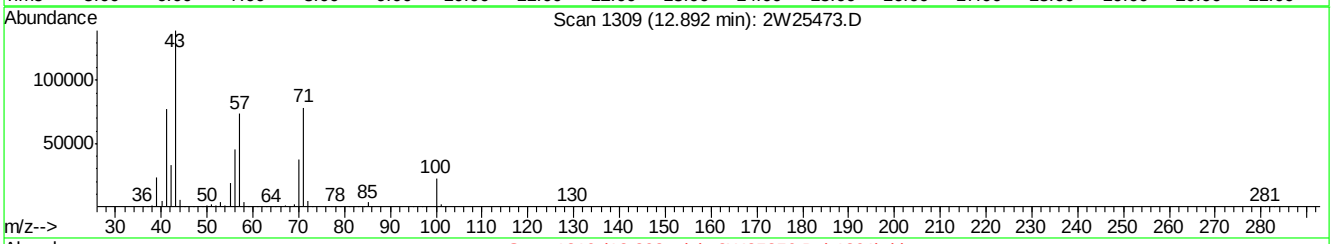
2W25473.D M2W1070.M Sun Sep 13 11:35:28 2009 MS2W

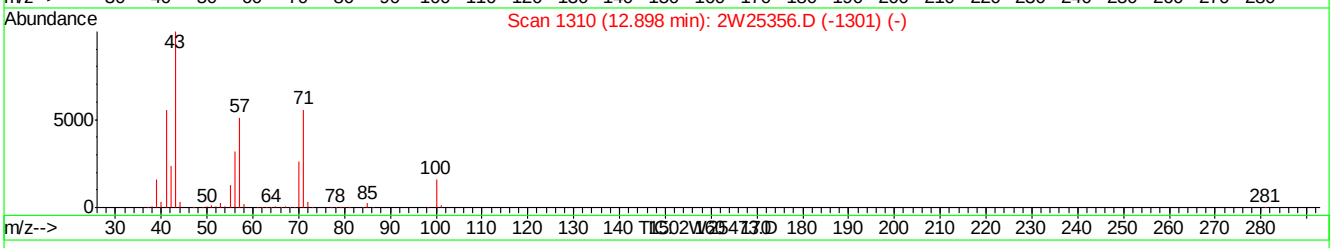
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25473.D Vial: 3
Acq On : 11 Sep 2009 8:04 am Operator: YOUMINH
Sample : BS Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 10.69PPBV m

response 1485101

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25473.D M2W1070.M Sun Sep 13 11:35:31 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:05 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	120727	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	567505	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.40	82	298489	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.40	82	298389	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	163044	5.36	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 107.20%

Target Compounds						Qvalue
2) FREON 115	5.01	119	97785	7.87	PPBV	99
3) DICHLORODIFLUOROMETHANE	5.01	85	151288	8.06	PPBV	99
4) FREON 152A	5.13	65	125916	9.78	PPBV	96
5) CHLORODIFLUOROMETHANE	5.18	67	47786	9.51	PPBV	98
6) PROPYLENE	5.22	41	194709	9.20	PPBV	99
7) PROPANE	5.23	43	70056	8.51	PPBV #	100
8) FREON 114	5.56	85	502128	10.15	PPBV	99
9) CHLOROMETHANE	5.46	52	68591	9.68	PPBV	96
10) VINYL CHLORIDE	5.69	62	227430	10.27	PPBV	99
11) 1,3-BUTADIENE	5.84	54	171241	10.11	PPBV	95
12) n-BUTANE	5.88	43	347541	9.53	PPBV	98
13) BROMOMETHANE	6.12	94	183721	10.36	PPBV	99
14) CHLOROETHANE	6.29	64	125439	10.72	PPBV	99
15) FREON 123	6.76	83	401113	10.49	PPBV #	100
16) FREON 123A	6.81	117	211574	10.13	PPBV	96
17) TRICHLOROFLUOROMETHANE	7.06	101	422970	10.09	PPBV	100
18) ISOPROPYL ALCOHOL	7.09	45	289395	9.37	PPBV	99
19) ACETONE	6.87	58	84565	9.62	PPBV	91
20) PENTANE	7.40	42	229724	9.36	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1411997m	10.02	PPBV	
22) ETHYL ETHER	7.40	74	87765	10.44	PPBV	98
23) IODOMETHANE	7.63	142	429275	10.40	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.69	96	163547	9.87	PPBV	95
25) CARBON DISULFIDE	8.15	76	562927	9.95	PPBV	98
26) ETHANOL	6.39	45	66503	9.22	PPBV	100
27) BROMOETHENE	6.64	106	171869	10.55	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	158714	9.54	PPBV	95
29) 3-CHLOROPROPENE	7.92	76	87112	10.40	PPBV #	88
30) FREON 113	8.06	151	257393	9.85	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	196284	10.01	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.69	59	321700	9.20	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	448692	9.71	PPBV	99
34) TETRAHYDROFURAN	10.49	42	225967	9.53	PPBV	95
35) HEXANE	9.98	57	292464	9.96	PPBV	96
36) VINYL ACETATE	9.05	86	39639	10.27	PPBV #	92
37) 1,1-DICHLOROETHANE	8.94	63	374337	10.17	PPBV	99
38) METHYL ETHYL KETONE	9.31	72	86771	9.79	PPBV #	92
39) cis-1,2-DICHLOROETHYLENE	9.78	96	195324	10.18	PPBV	97
40) ETHYL ACETATE	9.95	61	52083	9.32	PPBV #	96
41) CHLOROFORM	10.07	83	363603	10.38	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:05 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	351281	10.20 PPBV	99
43) 1,1,1-TRICHLOROETHANE	11.09	97	372959	10.40 PPBV	99
44) CARBON TETRACHLORIDE	11.71	117	384506	10.32 PPBV	100
45) 1,2-DICHLOROETHANE	10.82	62	257124	10.22 PPBV	100
47) BENZENE	11.56	78	599782	10.24 PPBV	99
48) CYCLOHEXANE	11.85	84	256974	9.78 PPBV	97
49) 2,3-DIMETHYLPENTANE	12.06	71	131240	10.76 PPBV	98
50) TRICHLOROETHYLENE	12.62	95	218613	10.25 PPBV	100
51) 1,2-DICHLOROPROPANE	12.38	63	232501	10.66 PPBV	100
52) BROMODICHLOROMETHANE	12.58	83	381380	10.96 PPBV	99
53) 2,2,4-TRIMETHYLPENTANE	12.65	57	814352	10.12 PPBV	100
54) 1,4-DIOXANE	12.62	88	102677	9.62 PPBV #	1
55) METHYL METHACRYLATE	12.78	69	174561	10.27 PPBV	94
56) HEPTANE	12.89	43	356853	10.07 PPBV	96
57) TVHC as EQUIV HEPTANE	12.89	TIC	1504992m	10.55 PPBV	
58) METHYL ISOBUTYL KETONE	13.51	43	383676	9.38 PPBV	98
59) cis-1,3-DICHLOROPROPENE	13.49	75	314296	11.08 PPBV	97
60) TOLUENE	14.52	92	388478	10.92 PPBV	100
61) trans-1,3-DICHLOROPROPENE	14.02	75	289433	10.81 PPBV	98
62) 1,1,2-TRICHLOROETHANE	14.22	83	186891	10.79 PPBV	99
64) 2-HEXANONE	14.77	58	183183	8.67 PPBV	96
65) TETRACHLOROETHYLENE	15.73	164	234616	10.00 PPBV	99
66) DIBROMOCHLOROMETHANE	14.98	129	361154	11.05 PPBV	99
67) 1,2-DIBROMOETHANE	15.24	107	297228	10.40 PPBV	100
68) OCTANE	15.51	43	444661	10.60 PPBV	97
69) 1,1,1,2-TETRACHLOROETHANE	16.43	131	235952	10.76 PPBV #	100
70) CHLOROBENZENE	16.46	112	405165	9.95 PPBV	100
71) ETHYLBENZENE	16.85	91	722722	10.56 PPBV	100
72) m,p-XYLENE	17.04	106	525980	21.27 PPBV	100
73) o-XYLENE	17.56	106	249481	10.80 PPBV	100
74) STYRENE	17.44	104	380292	11.53 PPBV	100
75) NONANE	17.74	43	386292	11.25 PPBV	98
76) BROMOFORM	17.16	173	290099	11.43 PPBV	99
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	306389	11.01 PPBV	100
79) ISOPROPYLBENZENE	18.18	105	683810	11.30 PPBV	100
80) 2-CHLOROTOLUENE	18.71	126	154666	11.30 PPBV	100
81) n-PROPYLBENZENE	18.73	120	167753	11.56 PPBV	100
82) 4-ETHYLTOLUENE	18.88	105	555054	11.84 PPBV	100
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	456780	11.62 PPBV	99
84) TERT-BUTYLBENZENE	19.41	134	111810	11.35 PPBV	99
85) 1,2,4-TRIMETHYLBENZENE	19.41	105	391196	11.87 PPBV	99
86) m-DICHLOROBENZENE	19.60	146	219308	11.17 PPBV	100
87) BENZYL CHLORIDE	19.58	91	224177	10.89 PPBV	100
88) p-DICHLOROBENZENE	19.68	146	194735	10.75 PPBV	100
89) SEC-BUTYLBENZENE	19.71	134	120198	11.54 PPBV	98
90) p-ISOPROPYLTOLUENE	19.88	134	111389	11.50 PPBV	97
91) o-DICHLOROBENZENE	20.05	146	181720	11.22 PPBV	100
92) n-BUTYLBENZENE	20.34	134	72567	11.17 PPBV	97
93) HEXACHLOROBUTADIENE	22.43	225	55280	9.69 PPBV	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:05 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	35283	9.60	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

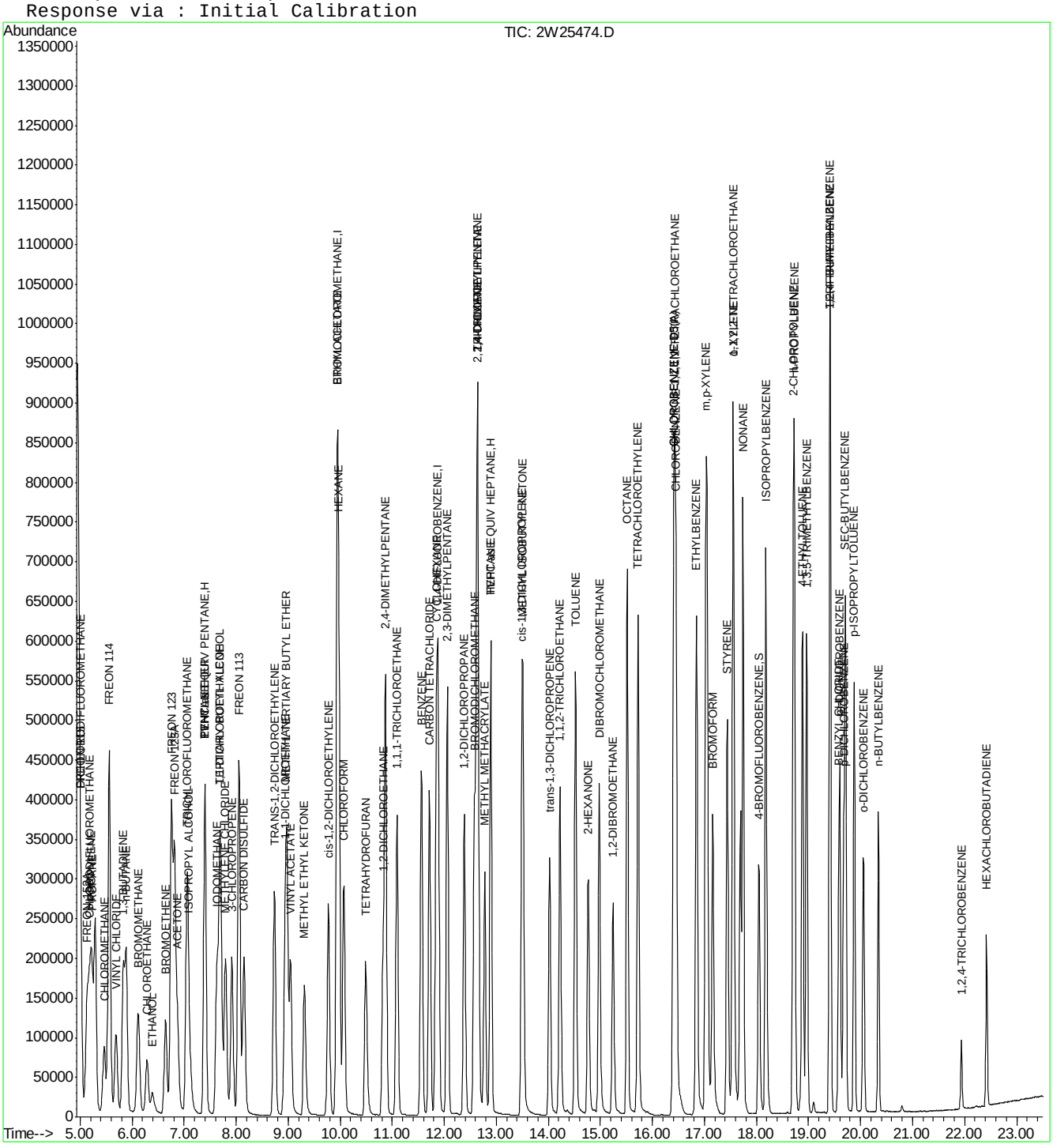
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25474.D
Acq On : 11 Sep 2009 8:48 am
Sample : BSD
Misc : MS49009,V2W1075,,,,,1
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009

Vial: 3
Operator: YOUMINH
Inst : MS2W
Multiplr: 1.00

Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

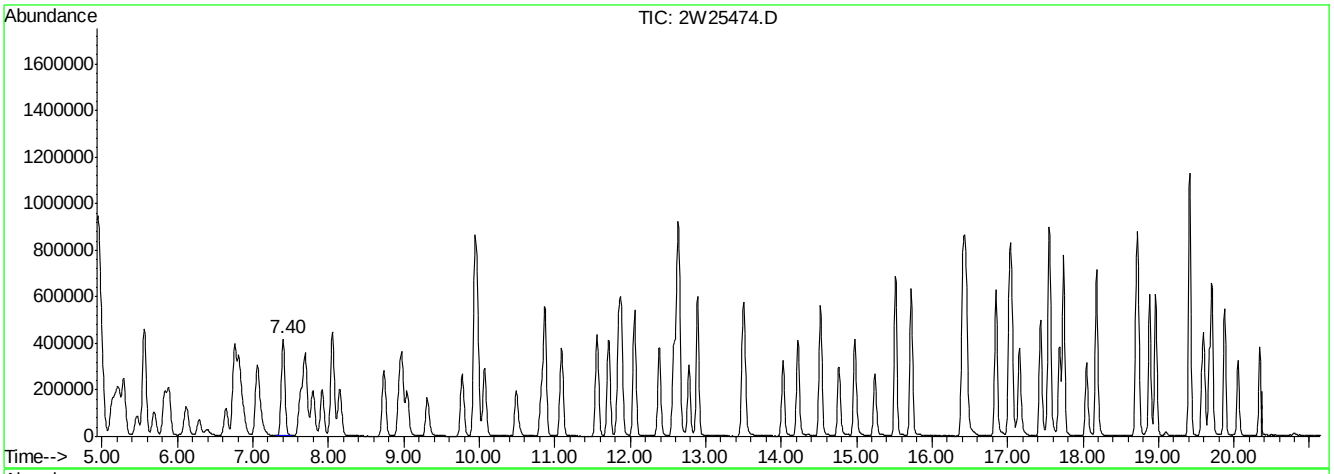


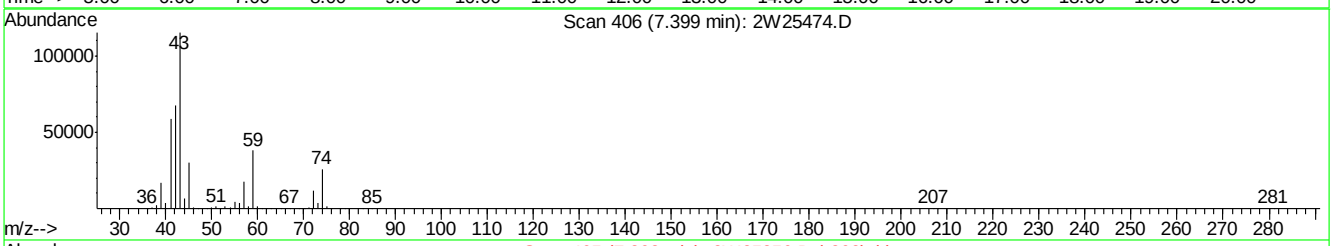
ACCUTEST Laboratories JA28237

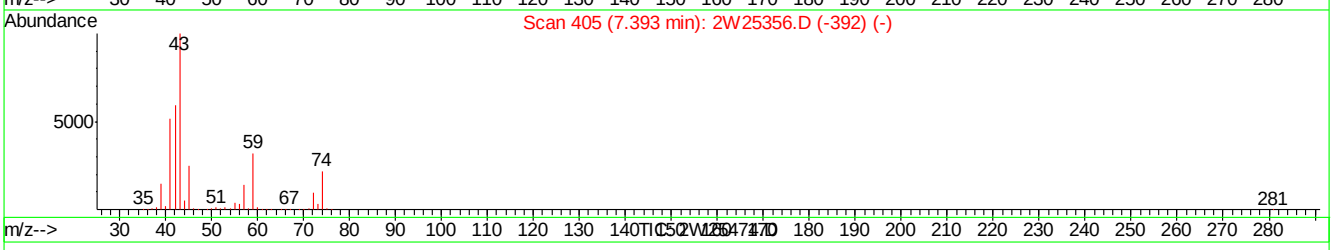
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 10.02PPBV m

response 1411997

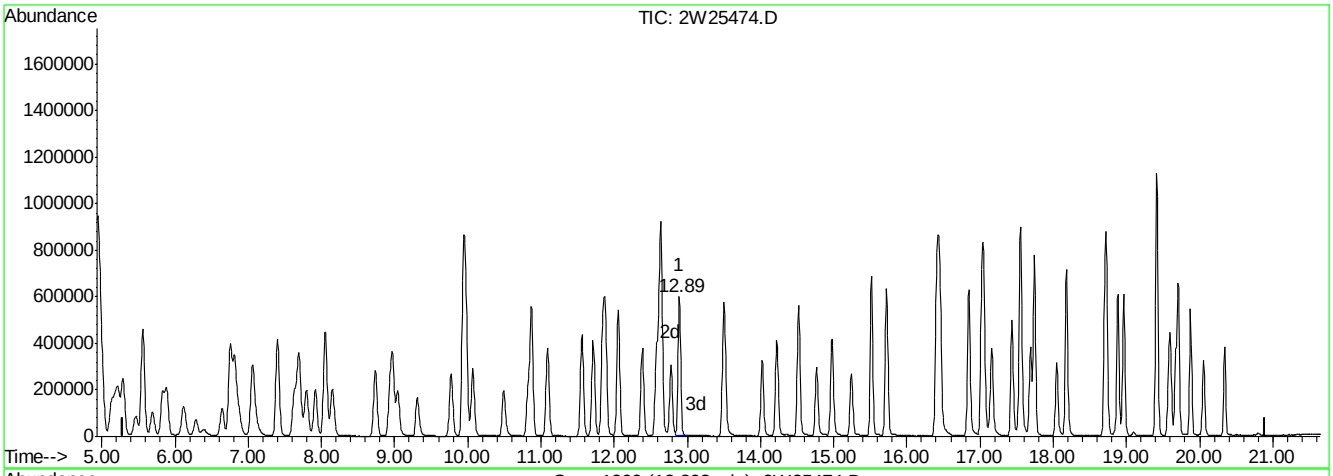
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

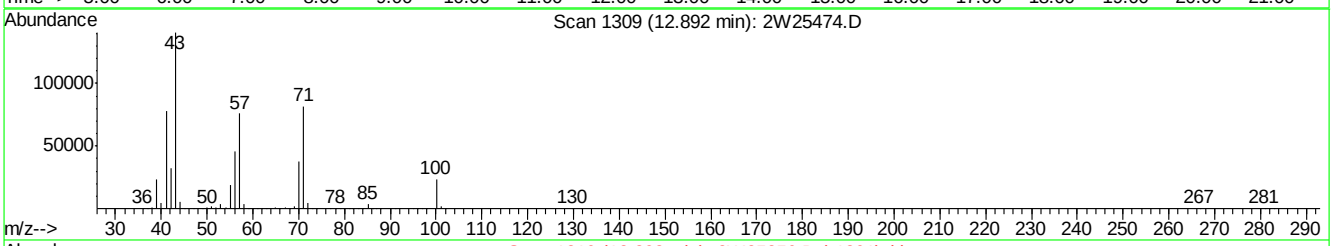
2W25474.D M2W1070.M Sun Sep 13 11:35:43 2009 MS2W

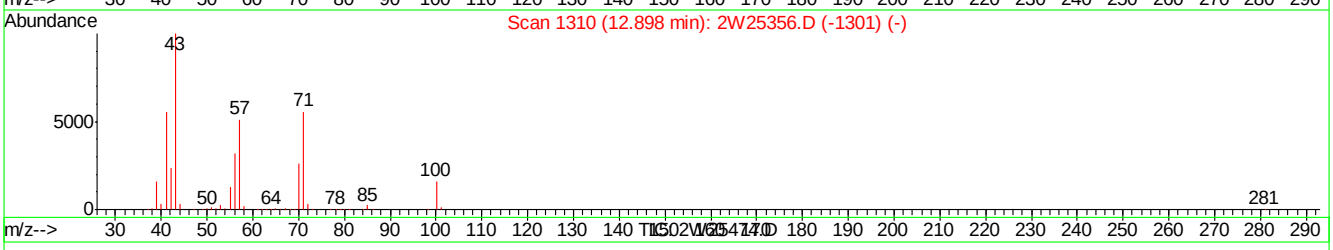
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25474.D Vial: 3
Acq On : 11 Sep 2009 8:48 am Operator: YOUMINH
Sample : BSD Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:12 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 10.55PPBV m

response 1504992

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25474.D M2W1070.M Sun Sep 13 11:35:47 2009 MS2W

Manual Integrations APPROVED (compounds with "m" flag)
Kanya Veerawat 10/08/09 18:41

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12879.D Vial: 13
Acq On : 5 Oct 2009 7:05 pm Operator: YOUMINH
Sample : JA28296-1DUP Inst : MS3W
Misc : MS86173,V3W524,160,,,,1.60 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:02:13 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

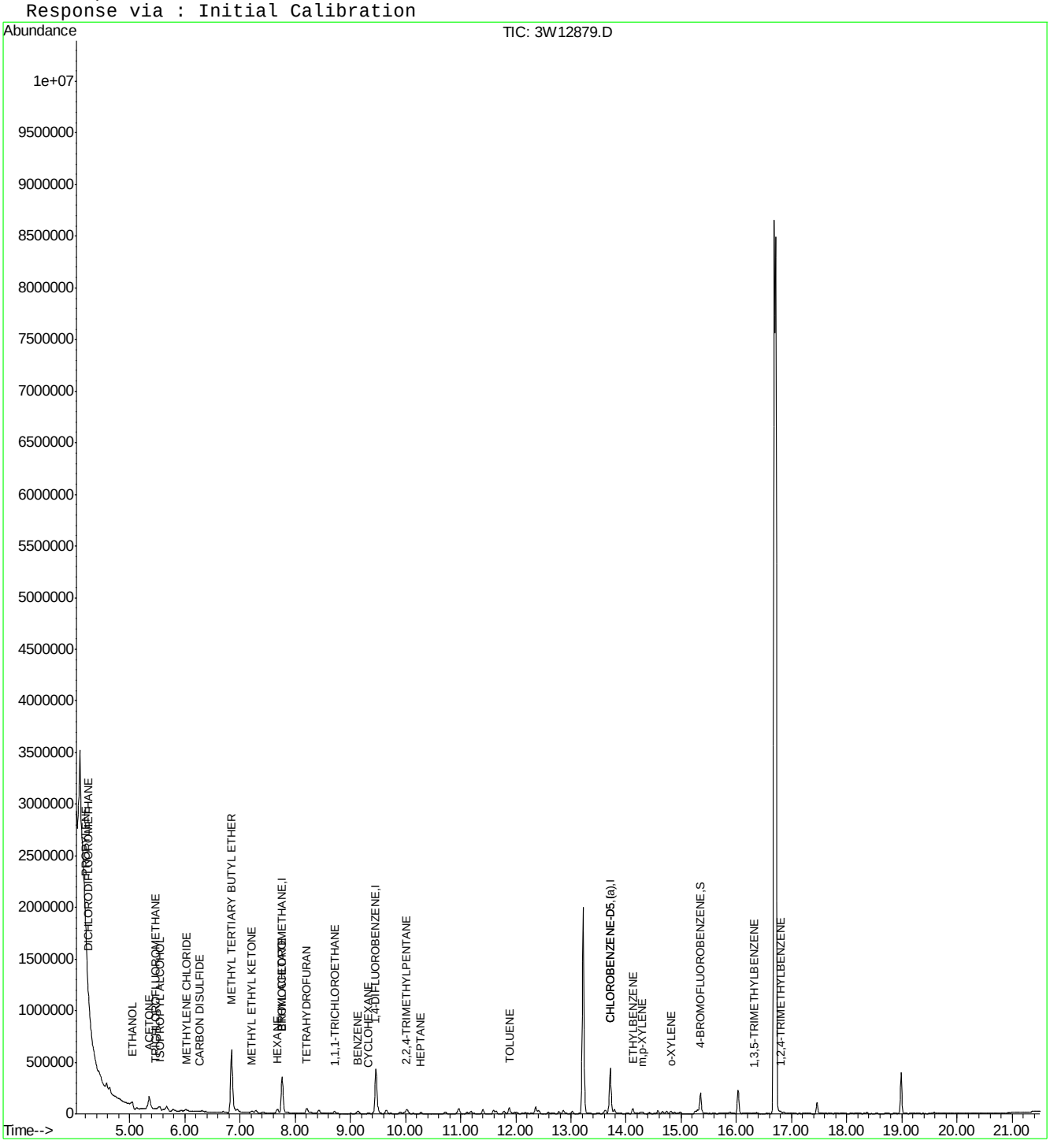
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	104514	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	444495	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	182668	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	182668	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	89290	4.66	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 93.20%			
Target Compounds						Qvalue
5) DICHLORODIFLUOROMETHANE	4.26	85	9862	0.23	PPBV	97
7) PROPYLENE	4.21	41	55351	3.71	PPBV	97
17) TRICHLOROFLUOROMETHANE	5.46	101	8301	0.20	PPBV	98
18) ISOPROPYL ALCOHOL	5.55	45	40403	2.04	PPBV	98
19) ACETONE	5.36	58	60128	10.22	PPBV	98
25) CARBON DISULFIDE	6.26	76	8188	0.20	PPBV #	1
26) ETHANOL	5.05	45	40288	8.53	PPBV	95
28) METHYLENE CHLORIDE	6.04	84	3586	0.28	PPBV	92
33) METHYL TERTIARY BUTYL ETHE	6.85	73	8475	0.25	PPBV	63
34) TETRAHYDROFURAN	8.21	72	14372	2.86	PPBV #	76
35) HEXANE	7.67	57	19956	1.05	PPBV #	82
38) METHYL ETHYL KETONE	7.22	72	6442	1.29	PPBV #	59
41) ETHYL ACETATE	7.76	61	10760	3.34	PPBV	97
44) 1,1,1-TRICHLOROETHANE	8.71	97	17852	0.57	PPBV	97
48) BENZENE	9.14	78	16373	0.44	PPBV	96
49) CYCLOHEXANE	9.32	56	4621	0.25	PPBV #	71
54) 2,2,4-TRIMETHYLPENTANE	10.02	57	47026m	0.86	PPBV	
56) HEPTANE	10.28	43	7269	0.33	PPBV	87
61) TOLUENE	11.88	92	27736	1.12	PPBV	99
72) ETHYLBENZENE	14.12	91	7296	0.16	PPBV	91
73) m,p-XYLENE	14.30	106	7584	0.45	PPBV	94
74) o-XYLENE	14.82	106	3052	0.19	PPBV	88
85) 1,3,5-TRIMETHYLBENZENE	16.31	105	3453	0.10	PPBV	90
87) 1,2,4-TRIMETHYLBENZENE	16.80	105	6823	0.22	PPBV #	29

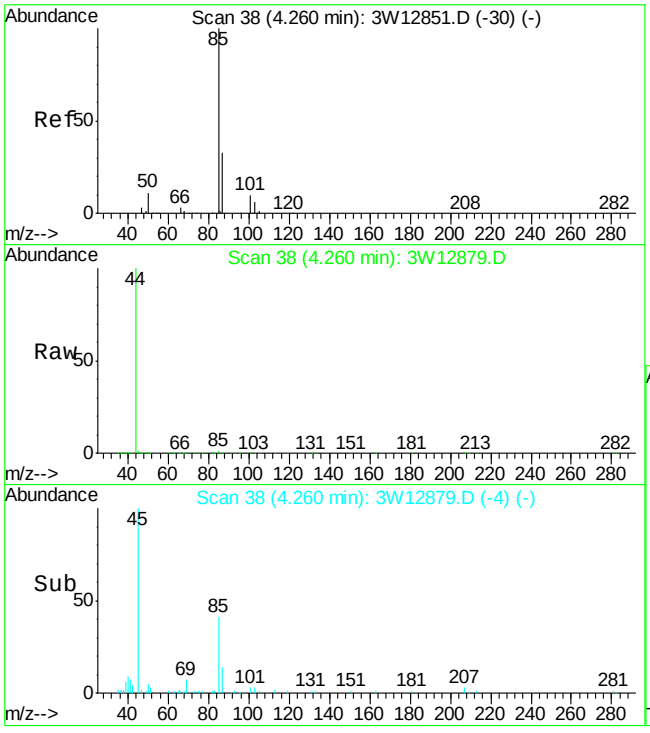
(#) = qualifier out of range (m) = manual integration (+) = signals summed
3W12879.D M3W523.M Tue Oct 06 13:01:59 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12879.D Vial: 13
Acq On : 5 Oct 2009 7:05 pm Operator: YOUMINH
Sample : JA28296-1DUP Inst : MS3W
Misc : MS86173,V3W524,160,,,,1.60 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:42 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

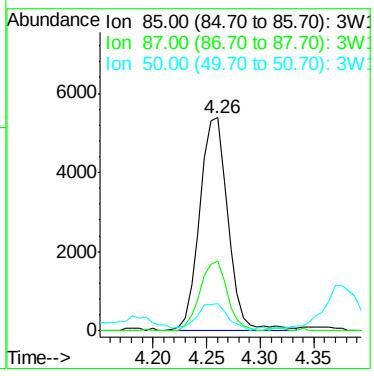


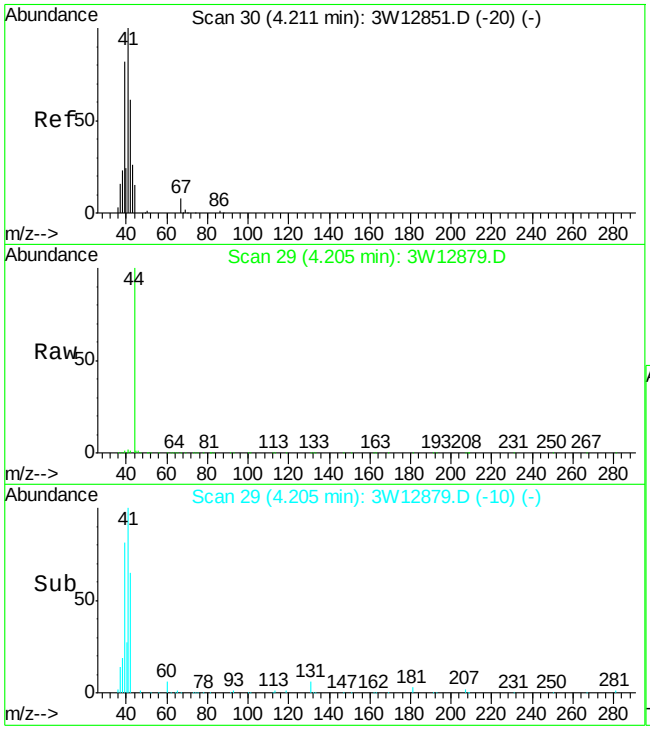


#5
DICHLORODIFLUOROMETHANE
Concen: 0.23 PPBV
RT: 4.26 min Scan# 38
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 85 Resp: 9862

Ion	Ratio	Lower	Upper
85	100		
87	31.4	12.6	52.6
50	14.1	0.0	31.8

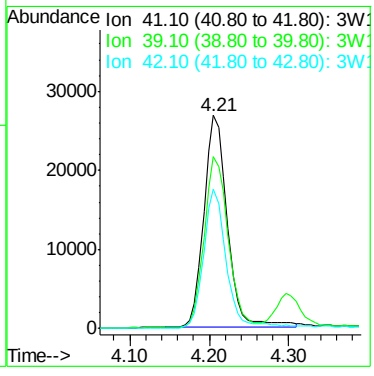


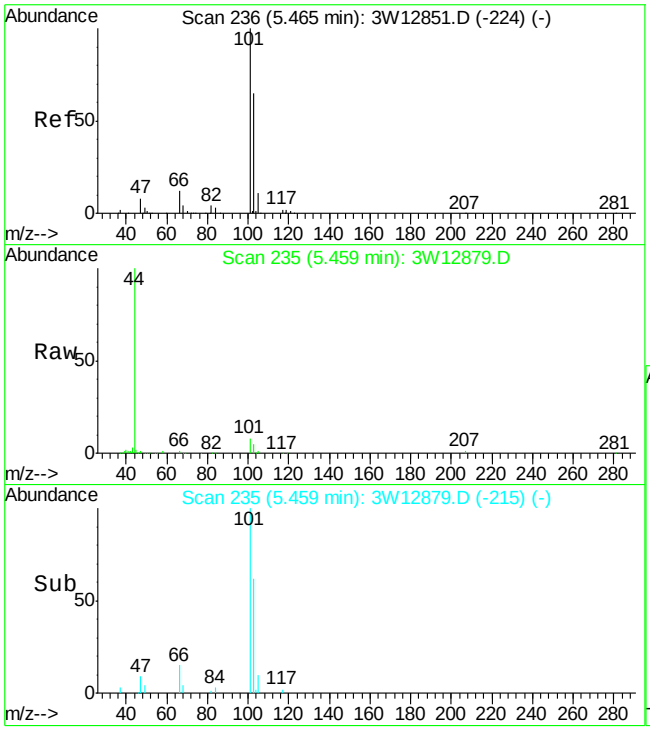


#7
PROPYLENE
Concen: 3.71 PPBV
RT: 4.21 min Scan# 29
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 41 Resp: 55351

Ion	Ratio	Lower	Upper
41	100		
39	81.4	65.9	105.9
42	61.4	40.3	80.3

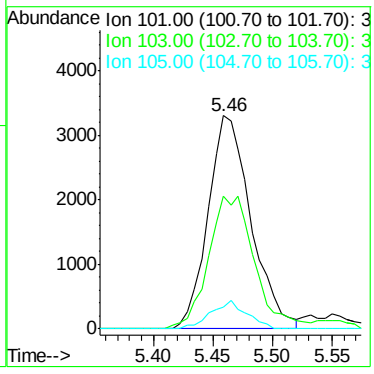


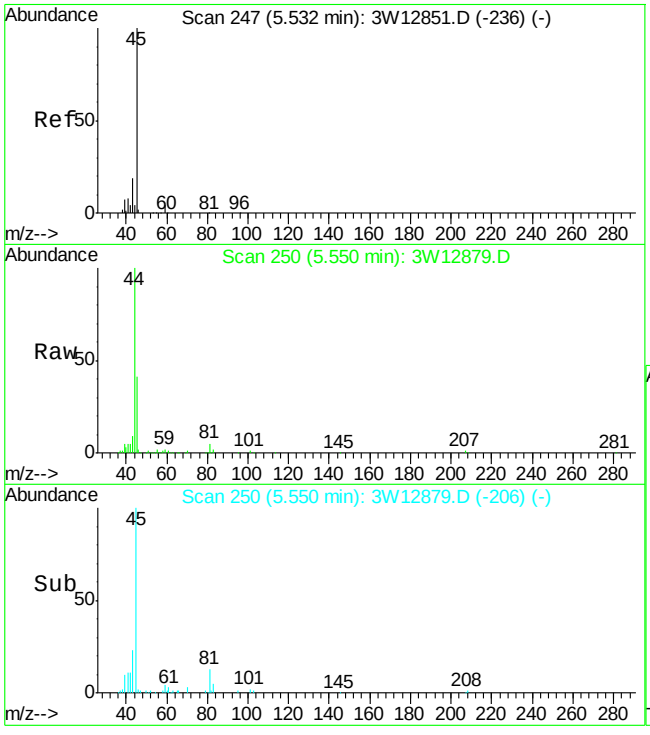


#17
TRICHLOROFLUOROMETHANE
Concen: 0.20 PPBV
RT: 5.46 min Scan# 235
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:101 Resp: 8301

Ion	Ratio	Lower	Upper
101	100		
103	66.6	45.3	85.3
105	11.0	0.0	30.7

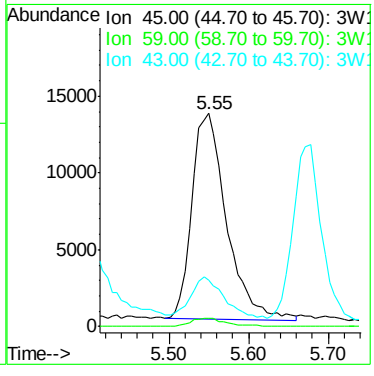


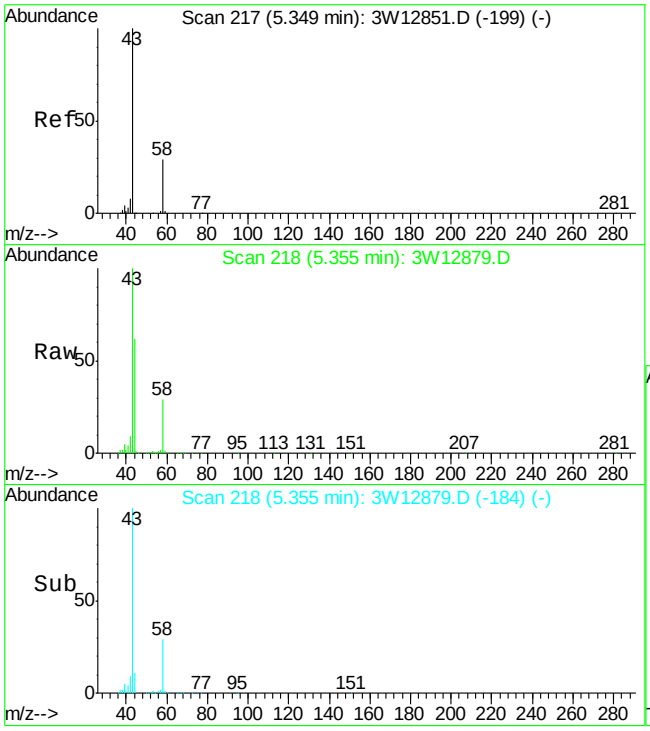


#18
ISOPROPYL ALCOHOL
Concen: 2.04 PPBV
RT: 5.55 min Scan# 250
Delta R.T. 0.02 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 45 Resp: 40403

Ion	Ratio	Lower	Upper
45	100		
59	3.8	0.0	23.9
43	21.7	0.6	40.6

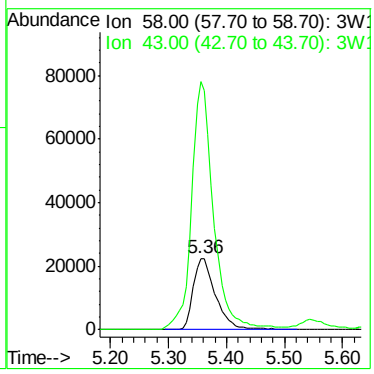


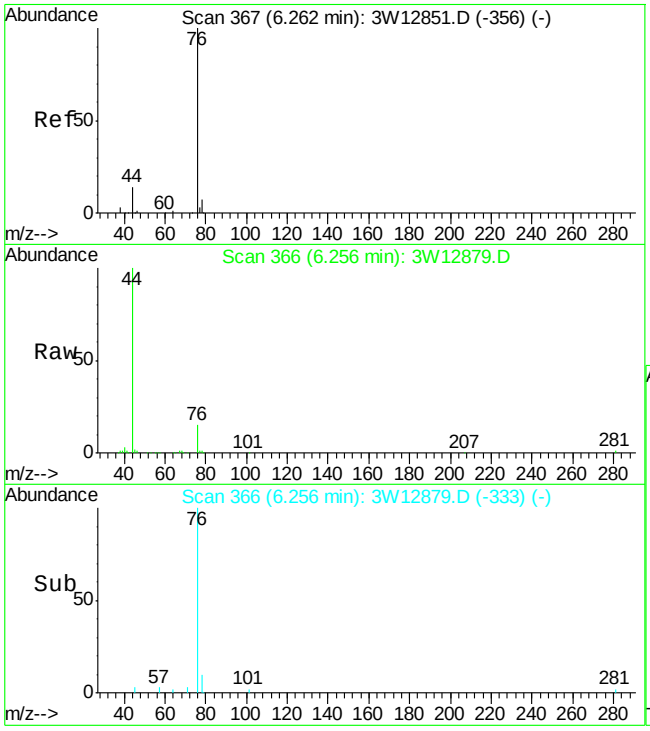


#19
ACETONE
Concen: 10.22 PPBV
RT: 5.36 min Scan# 218
Delta R.T. 0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 58 Resp: 60128

Ion	Ratio	Lower	Upper
58	100		
43	339.7	323.9	363.9

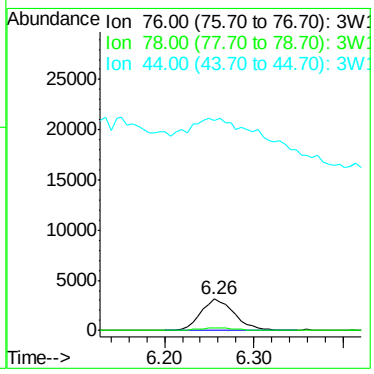


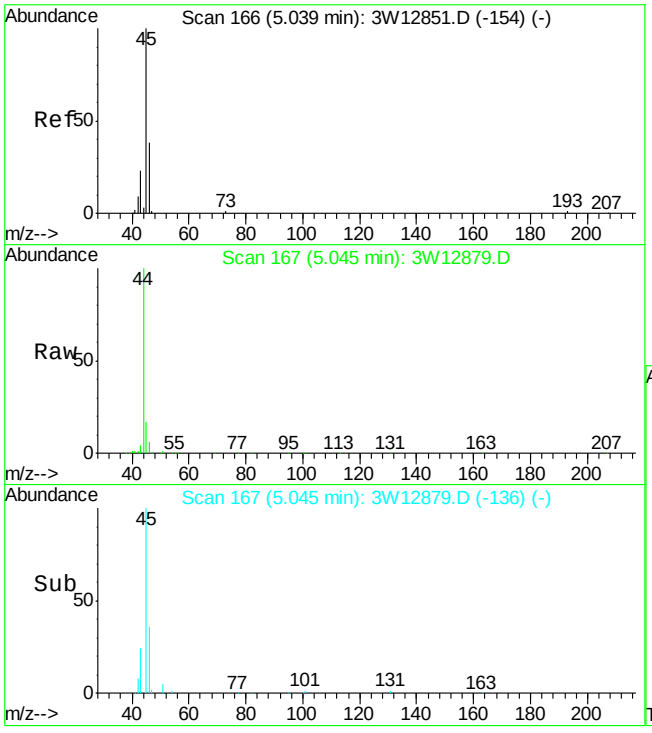


#25
CARBON DISULFIDE
Concen: 0.20 PPBV
RT: 6.26 min Scan# 366
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 76 Resp: 8188

Ion	Ratio	Lower	Upper
76	100		
78	9.8	0.0	29.1
44	386.5	0.0	33.9#

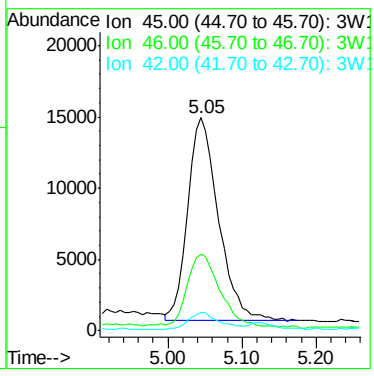


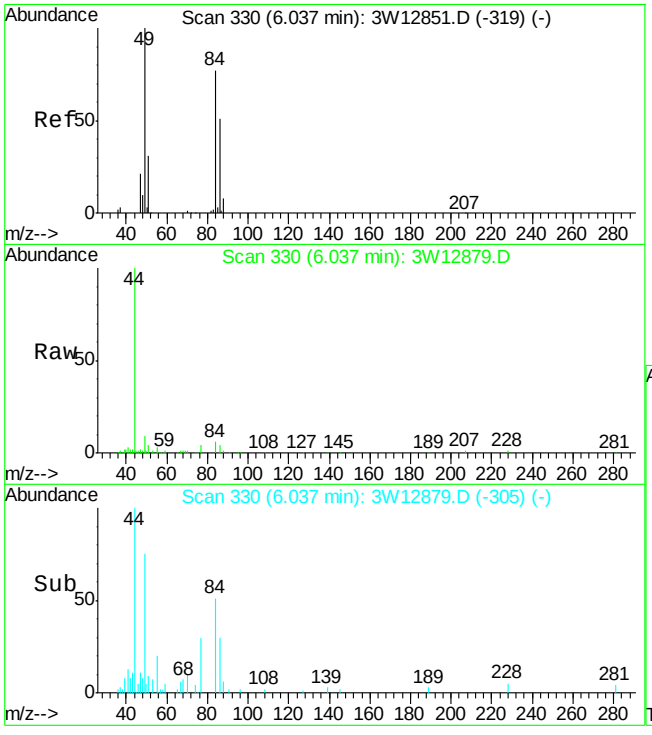


#26
ETHANOL
Concen: 8.53 PPBV
RT: 5.05 min Scan# 167
Delta R.T. 0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 45 Resp: 40288

Ion	Ratio	Lower	Upper
45	100		
46	40.8	17.9	57.9
42	8.1	0.0	29.8

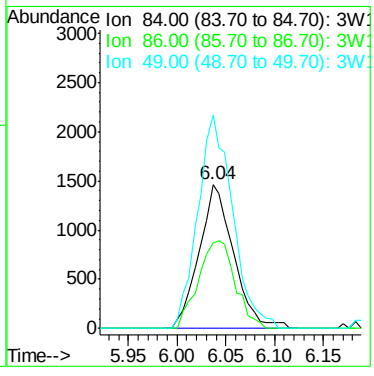


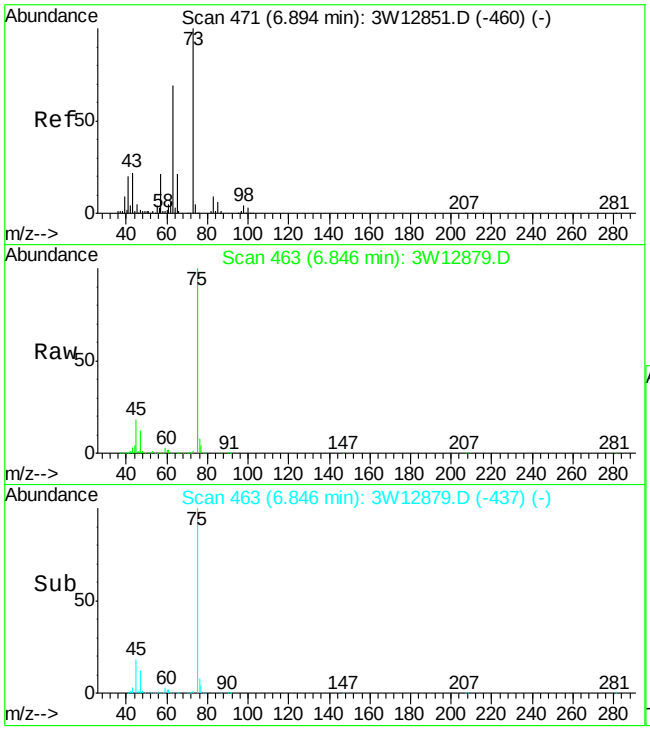


#28
METHYLENE CHLORIDE
Concen: 0.28 PPBV
RT: 6.04 min Scan# 330
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 84 Resp: 3586

Ion	Ratio	Lower	Upper
84	100		
86	64.9	45.5	85.5
49	149.6	0.0	335.0

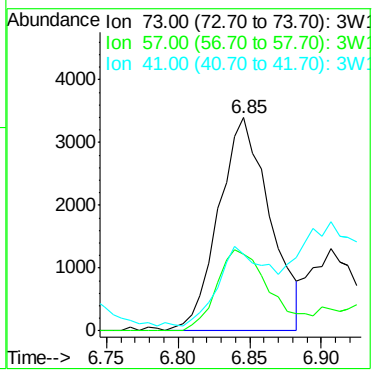


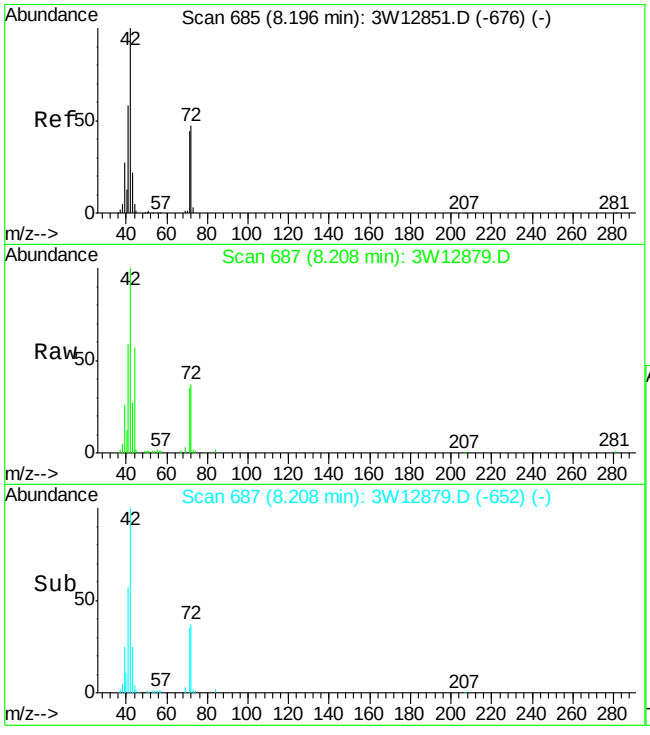


#33
METHYL TERTIARY BUTYL ETHER
Concen: 0.25 PPBV
RT: 6.85 min Scan# 463
Delta R.T. -0.05 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 73 Resp: 8475

Ion	Ratio	Lower	Upper
73	100		
57	40.1	0.9	40.9
41	36.0	0.8	40.8

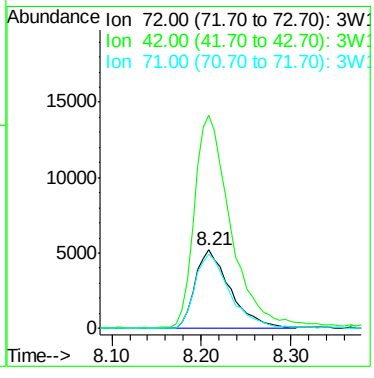


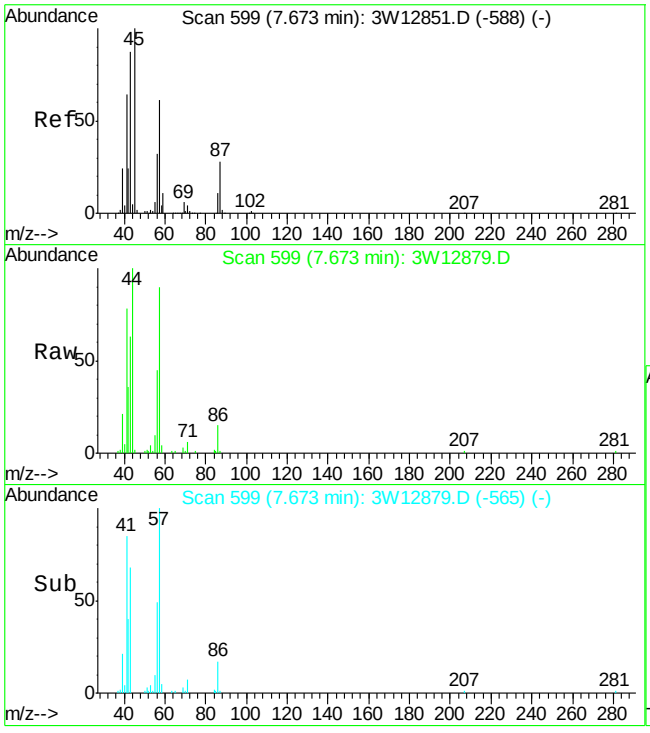


#34
TETRAHYDROFURAN
Concen: 2.86 PPBV
RT: 8.21 min Scan# 687
Delta R.T. 0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 72 Resp: 14372

Ion	Ratio	Lower	Upper
72	100		
42	282.3	207.4	247.4#
71	93.7	77.3	117.3

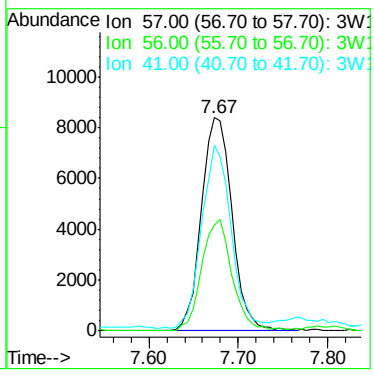


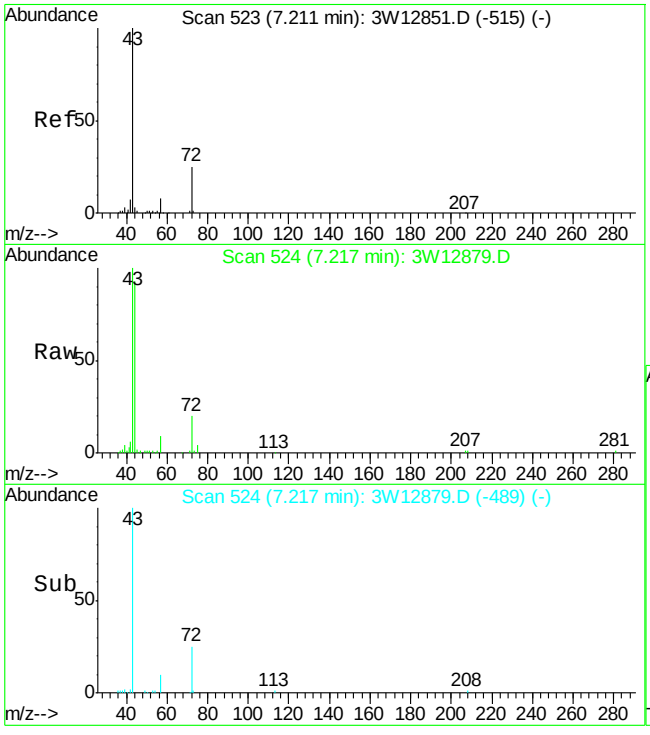


#35
HEXANE
Concen: 1.05 PPBV
RT: 7.67 min Scan# 599
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 57 Resp: 19956

Ion	Ratio	Lower	Upper
57	100		
56	51.5	32.2	72.2
41	82.8	89.9	129.9#

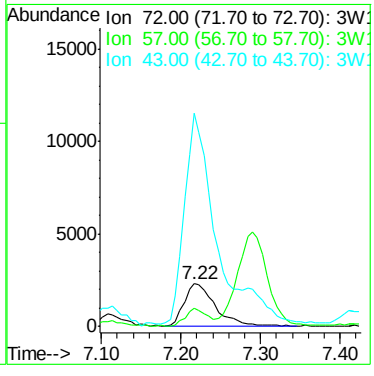


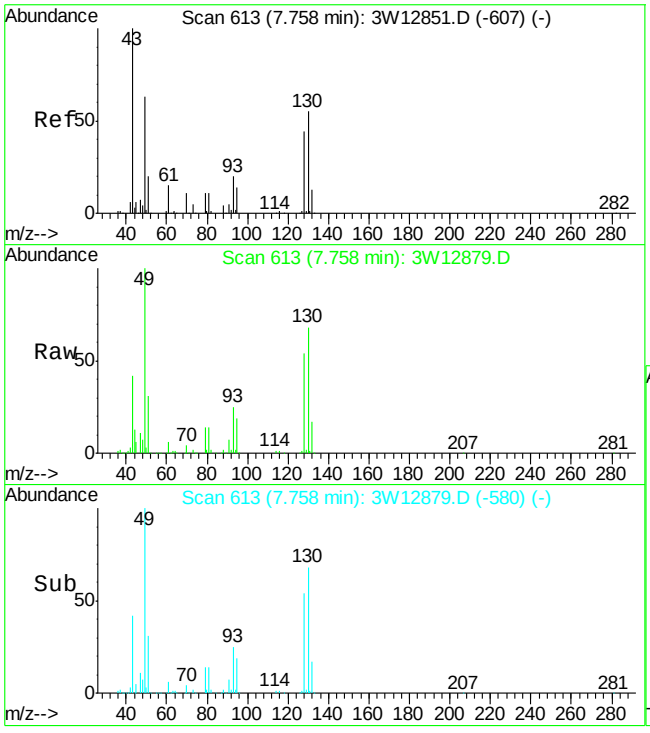


#38
METHYL ETHYL KETONE
Concen: 1.29 PPBV
RT: 7.22 min Scan# 524
Delta R.T. 0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 72 Resp: 6442

Ion	Ratio	Lower	Upper
72	100		
57	43.2	12.0	52.0
43	498.7	378.5	418.5#

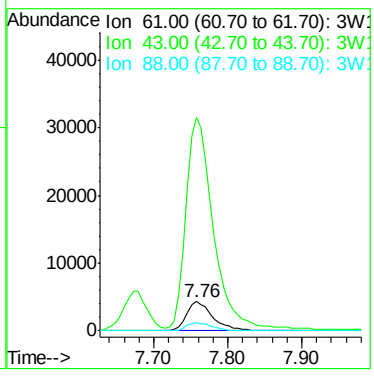


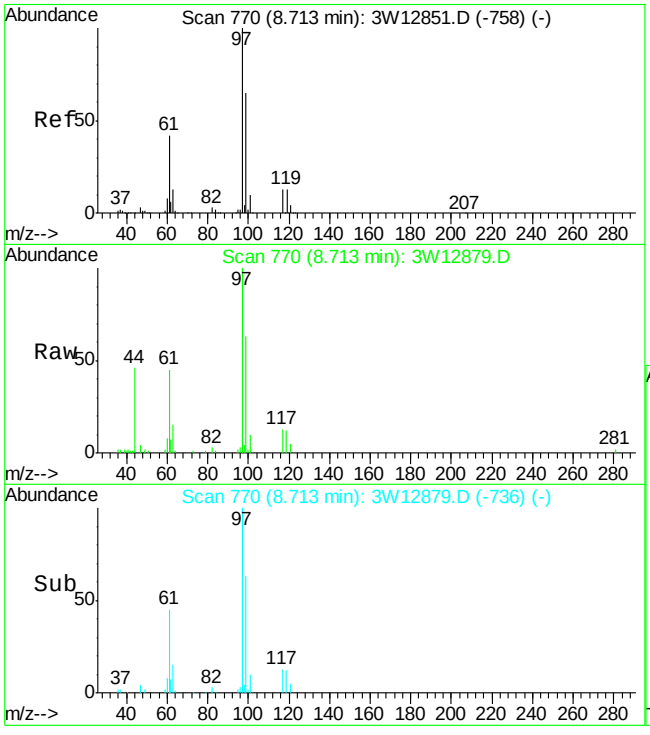


#41
ETHYL ACETATE
Concen: 3.34 PPBV
RT: 7.76 min Scan# 613
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 61 Resp: 10760

Ion	Ratio	Lower	Upper
61	100		
43	753.9	743.7	783.7
88	26.8	12.2	52.2

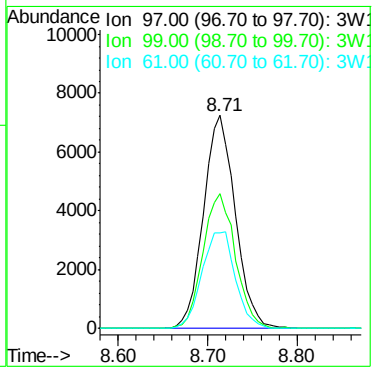


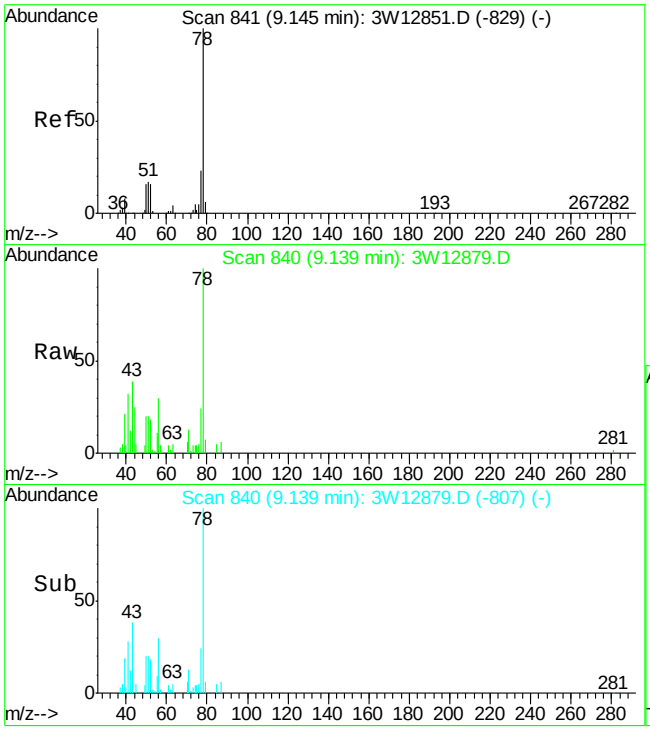


#44
1,1,1-TRICHLOROETHANE
Concen: 0.57 PPBV
RT: 8.71 min Scan# 770
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 97 Resp: 17852

Ion	Ratio	Lower	Upper
97	100		
99	64.5	45.0	85.0
61	47.5	23.1	63.1

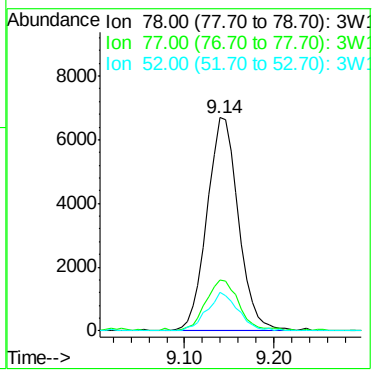


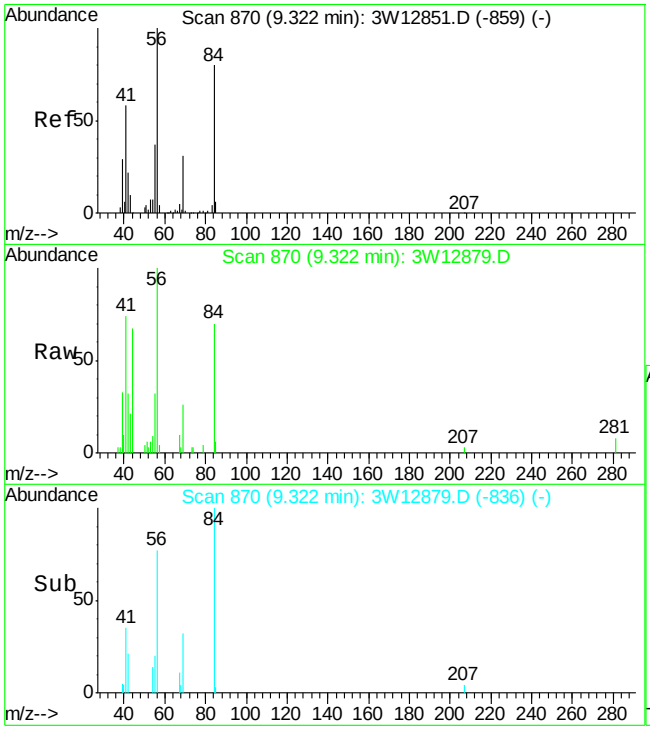


#48
BENZENE
Concen: 0.44 PPBV
RT: 9.14 min Scan# 840
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 78 Resp: 16373

Ion	Ratio	Lower	Upper
78	100		
77	25.4	3.2	43.2
52	17.7	0.0	35.8

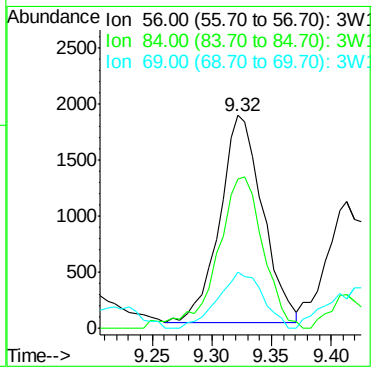


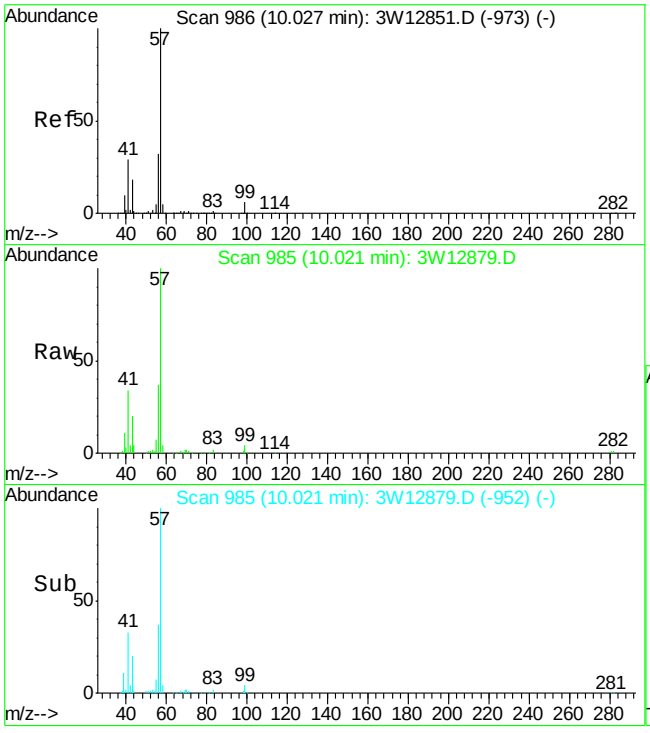


#49
CYCLOHEXANE
Concen: 0.25 PPBV
RT: 9.32 min Scan# 870
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 56 Resp: 4621

Ion	Ratio	Lower	Upper
56	100		
84	78.6	98.1	138.1#
69	28.6	11.4	51.4

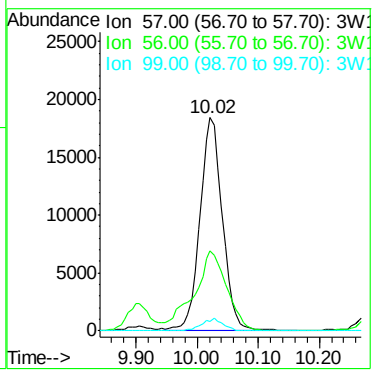


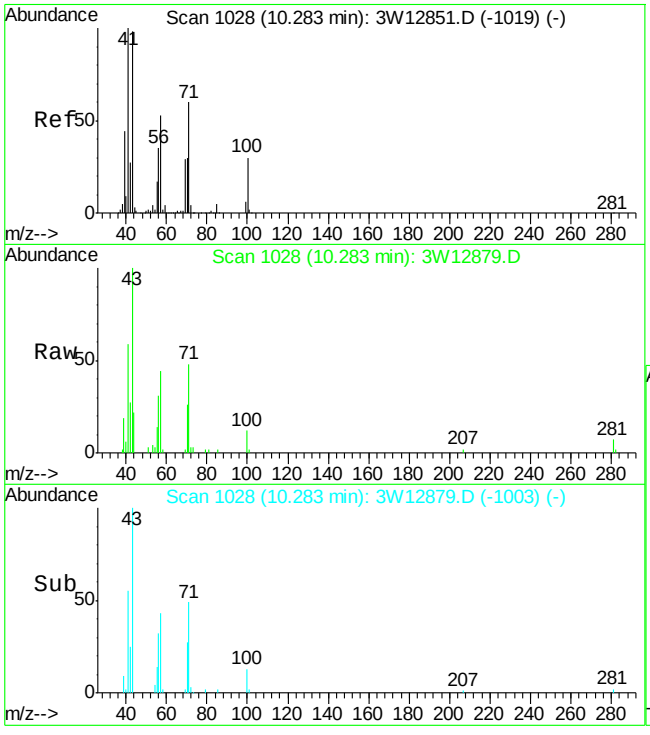


#54
2,2,4-TRIMETHYLPENTANE
Concen: 0.86 PPBV m
RT: 10.02 min Scan# 985
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 57 Resp: 47026

Ion	Ratio	Lower	Upper
57	100		
56	0.0	12.6	52.6#
99	0.0	0.0	26.1

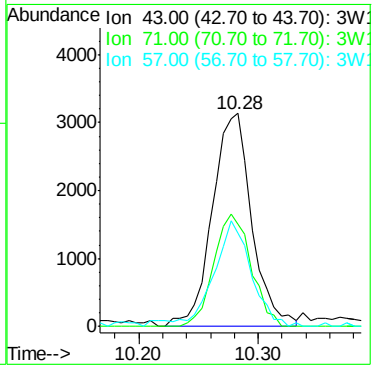


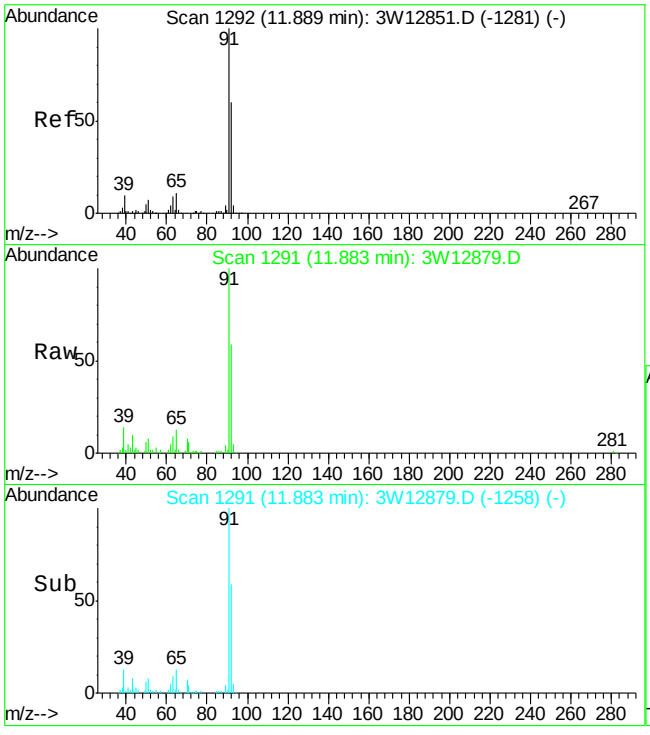


#56
HEPTANE
Concen: 0.33 PPBV
RT: 10.28 min Scan# 1028
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 43 Resp: 7269

Ion	Ratio	Lower	Upper
43	100		
71	49.8	40.7	80.7
57	46.4	34.5	74.5

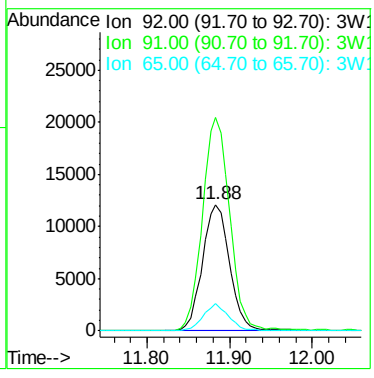


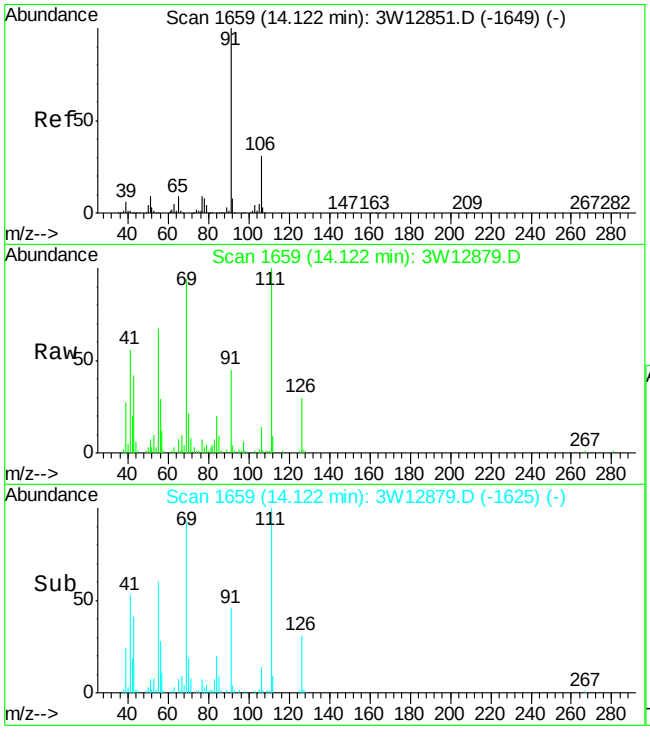


#61
TOLUENE
Concen: 1.12 PPBV
RT: 11.88 min Scan# 1291
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 92 Resp: 27736

Ion	Ratio	Lower	Upper
92	100		
91	169.3	147.6	187.6
65	20.0	0.0	39.0

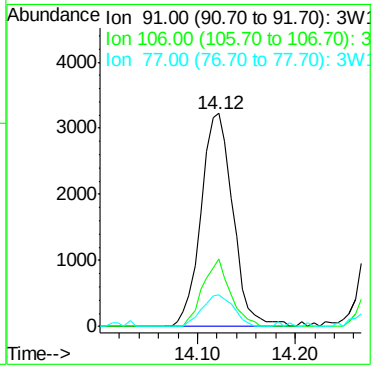


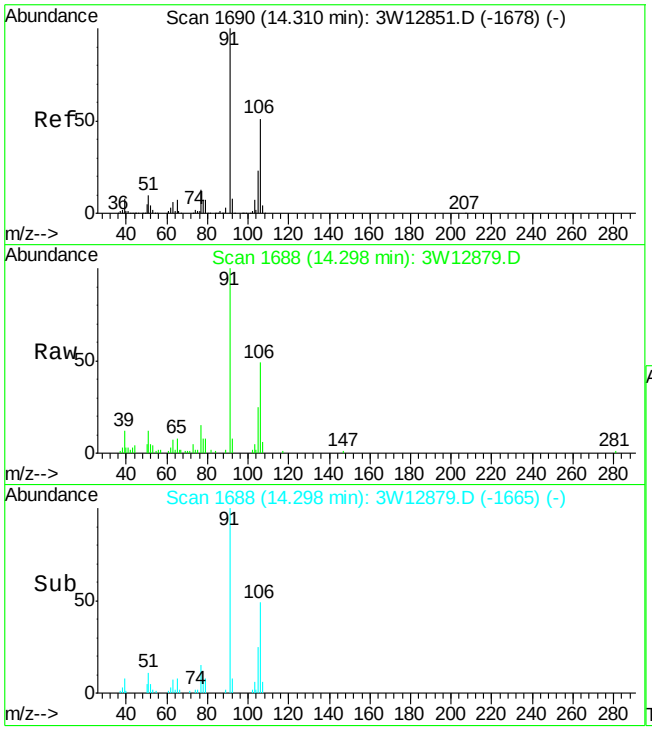


#72
ETHYLBENZENE
Concen: 0.16 PPBV
RT: 14.12 min Scan# 1659
Delta R.T. 0.00 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion: 91 Resp: 7296

Ion	Ratio	Lower	Upper
91	100		
106	27.2	11.2	51.2
77	14.7	0.0	28.7

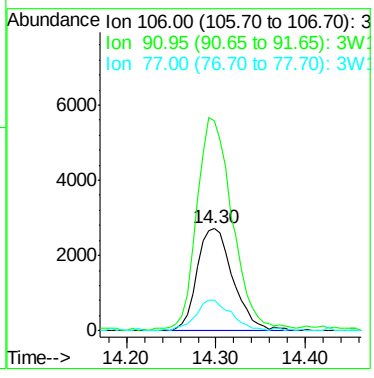


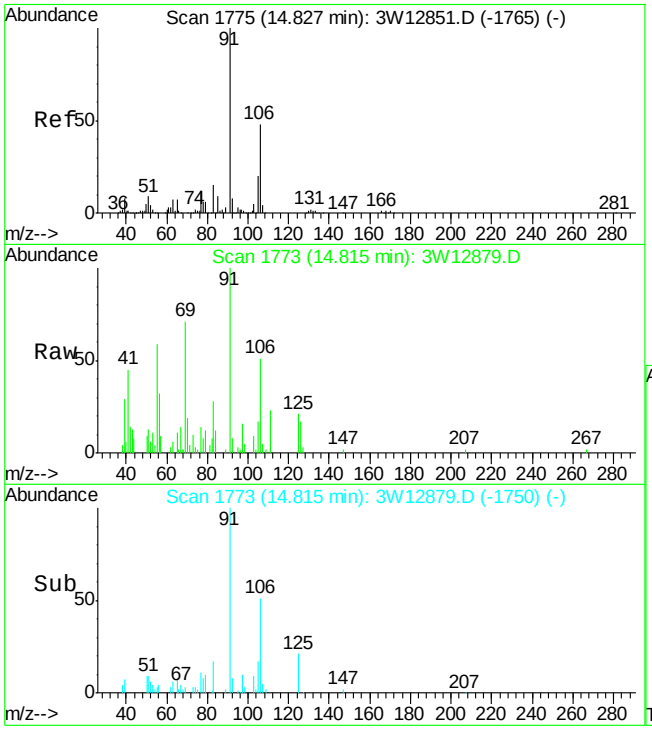


#73
m,p-XYLENE
Concen: 0.45 PPBV
RT: 14.30 min Scan# 1688
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:106 Resp: 7584

Ion	Ratio	Lower	Upper
106	100		
91	205.3	176.7	216.7
77	30.4	6.3	46.3

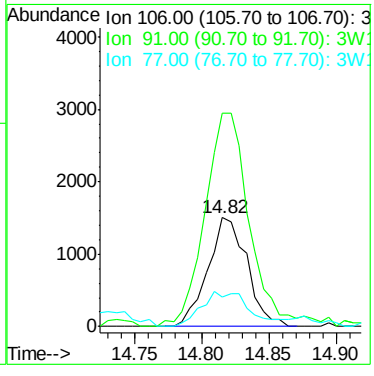


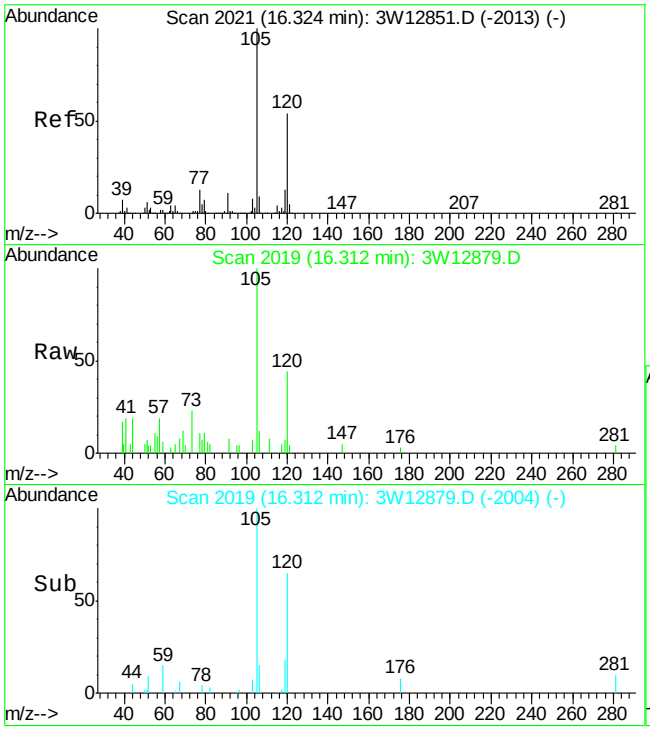


#74
o-XYLENE
Concen: 0.19 PPBV
RT: 14.82 min Scan# 1773
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:106 Resp: 3052

Ion	Ratio	Lower	Upper
106	100		
91	224.3	189.2	229.2
77	39.6	6.0	46.0

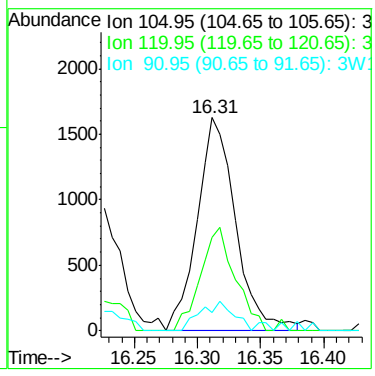


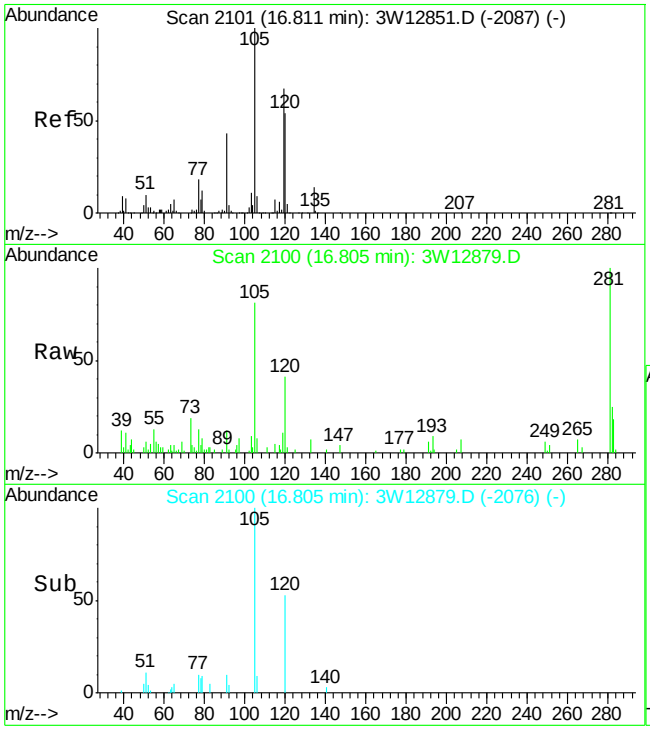


#85
1,3,5-TRIMETHYLBENZENE
Concen: 0.10 PPBV
RT: 16.31 min Scan# 2019
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:105 Resp: 3453

Ion	Ratio	Lower	Upper
105	100		
120	43.8	31.9	71.9
91	11.9	0.0	30.6

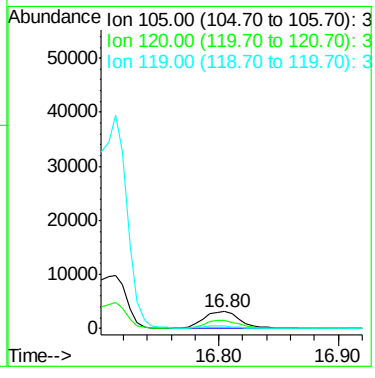




#87
1,2,4-TRIMETHYLBENZENE
Concen: 0.22 PPBV
RT: 16.80 min Scan# 2100
Delta R.T. -0.01 min
Lab File: 3W12879.D
Acq: 5 Oct 2009 7:05 pm

Tgt Ion:105 Resp: 6823

Ion	Ratio	Lower	Upper
105	100		
120	45.8	39.6	79.6
119	15.3	104.5	144.5#



Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25443.d
Acq On : 10 Sep 2009 5:39 am
Operator : YOUMINH
Sample : SCC(A590)
Misc : MS85028,V2W1073,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 10 09:58:14 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.948	128	160150	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.882	114	782954	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.402	82	369730	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.402	82	369428	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.045	95	164401	4.36	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 87.20%			

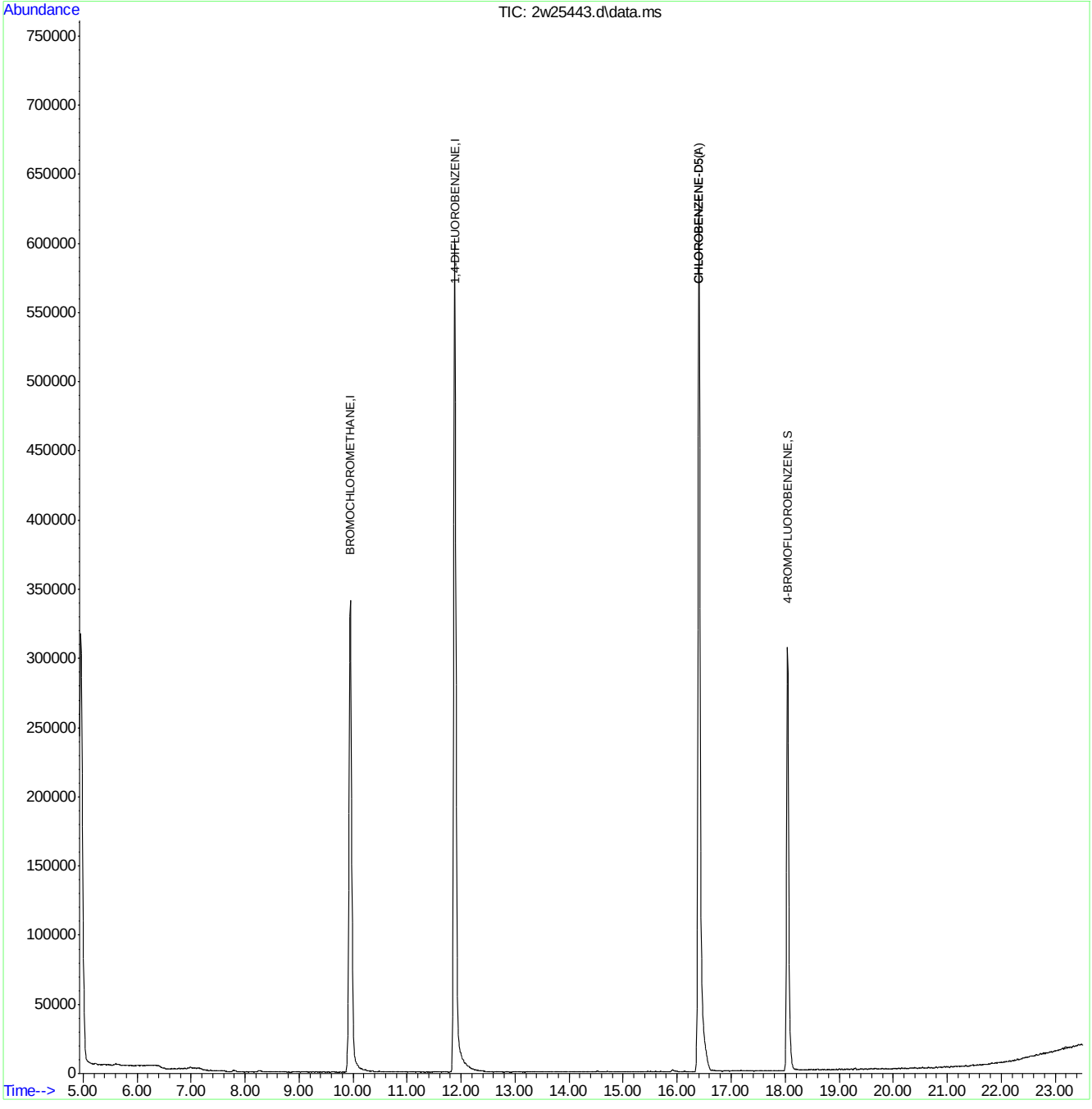
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25443.d
Acq On : 10 Sep 2009 5:39 am
Operator : YOUMINH
Sample : SCC(A590)
Misc : MS85028,V2W1073,,,,,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Sep 10 09:58:14 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



M2W1070.M Fri Sep 11 10:56:45 2009 VOA-CLN-04 Page: 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25482.D Vial: 12
Acq On : 11 Sep 2009 3:35 pm Operator: YOUMINH
Sample : SCC(A674) Inst : MS2W
Misc : MS85678,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:26:20 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.98	128	148781	10.00	PPBV	0.04
46) 1,4-DIFLUOROBENZENE	11.91	114	676588	10.00	PPBV	0.02
63) CHLOROBENZENE-D5	16.41	82	288197	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	287724	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	102181	3.48	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 69.60%

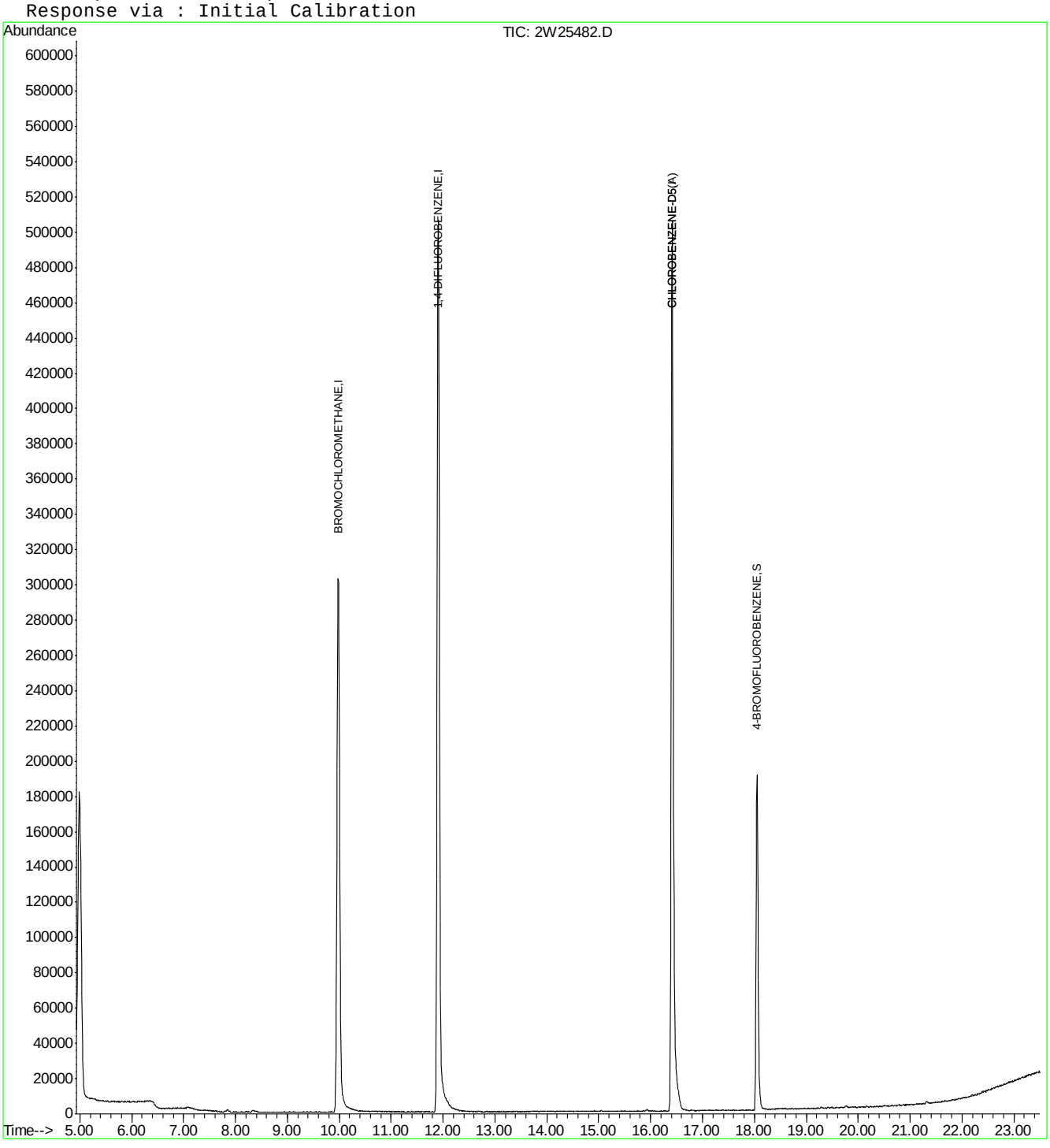
Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

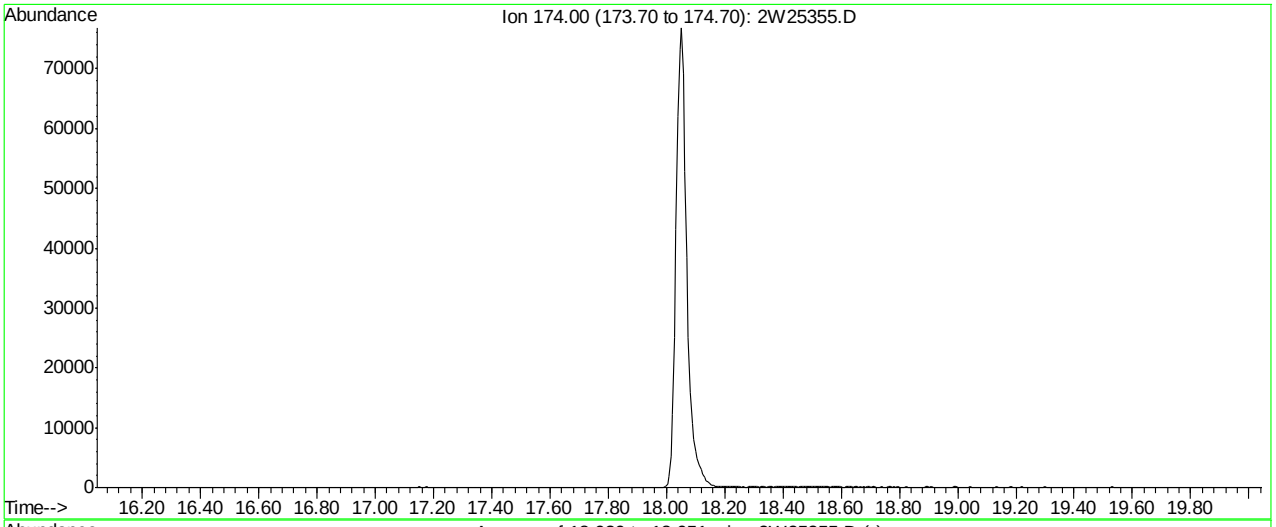
Data File : C:\MSDCHEM\1\DATA\2W25482.D Vial: 12
Acq On : 11 Sep 2009 3:35 pm Operator: YOUMINH
Sample : SCC(A674) Inst : MS2W
Misc : MS85678,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:15 2009 Quant Results File: M2W1070.RES

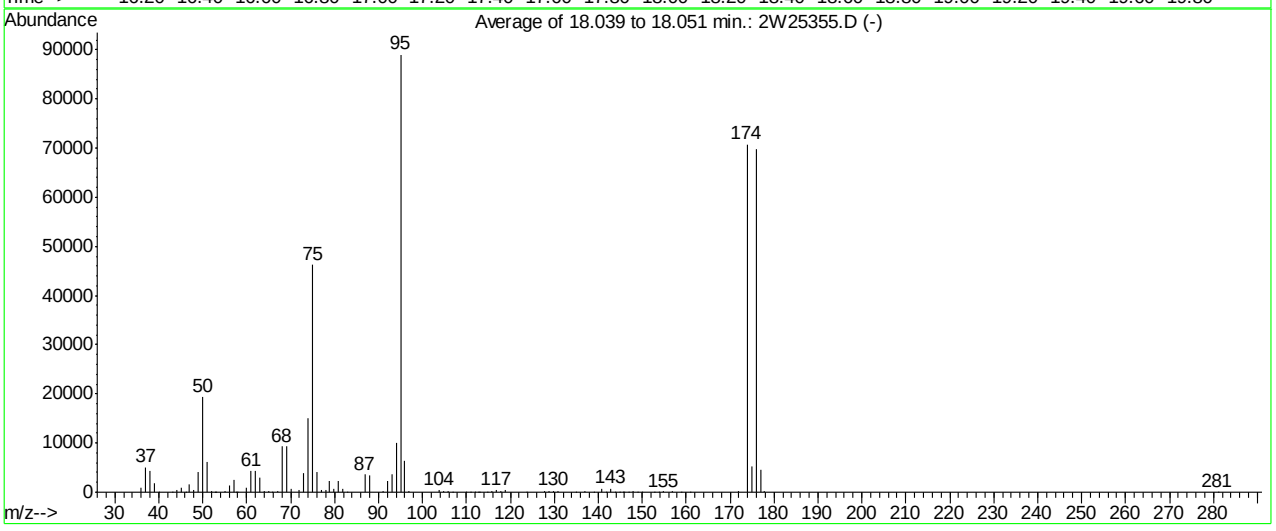
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



BFB

Data File : C:\MSDCHEM\1\DATA\2W25355.D Vial: 5
Acq On : 5 Sep 2009 10:16 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2155, 2156, 2157; Background Corrected with Scan 2144

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	21.7	19333	PASS
75	95	30	66	52.0	46261	PASS
95	95	100	100	100.0	89037	PASS
96	95	5	9	7.2	6398	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	79.5	70765	PASS
175	174	4	9	7.5	5329	PASS
176	174	93	101	98.6	69757	PASS
177	176	5	9	6.7	4659	PASS

2W25355.D M2W1070.M Sun Sep 06 15:06:35 2009 MS2W

Average of 18.039 to 18.051 min.: 2W25355.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	949	49.00	4208	59.95	843	72.00	465
37.00	5072	50.00	19333	61.00	4286	73.00	3786
38.00	4437	51.00	6173	62.00	4376	74.00	15169
39.00	1832	52.00	254	63.00	3028	75.00	46261
39.95	7	52.90	57	64.00	343	76.00	4096
43.05	58	53.10	21	65.00	263	76.90	489
44.00	425	55.00	250	65.90	27	77.95	413
45.00	1017	56.00	1411	67.05	261	78.90	2235
46.05	83	57.00	2521	68.00	9299	79.90	786
47.00	1645	57.70	23	69.00	9451	80.90	2352
47.95	571	58.00	53	70.00	799	81.90	636

Average of 18.039 to 18.051 min.: 2W25355.D
BFB
Modified:subtracted

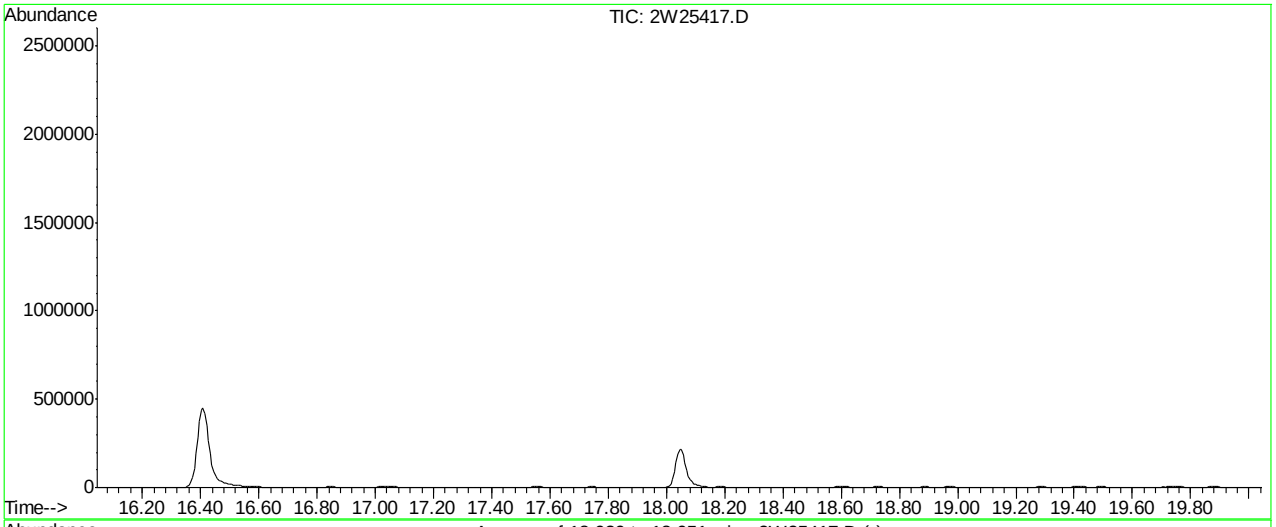
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
82.80	36	104.90	124	117.90	308	141.85	114
86.90	3611	105.85	305	118.90	378	142.90	793
87.90	3531	106.85	85	123.80	23	143.75	51
90.95	324	109.80	22	127.85	275	144.80	98
92.00	2372	110.90	56	128.90	158	145.70	25
93.00	3551	111.95	96	129.90	329	145.85	85
94.00	10024	112.80	40	130.90	133	146.85	102
95.00	89037	113.10	28	134.90	114	147.90	221
96.00	6398	114.85	74	136.85	151	148.90	35
96.95	215	115.85	277	138.90	21	149.85	66
103.85	372	116.90	412	140.90	783	152.90	27

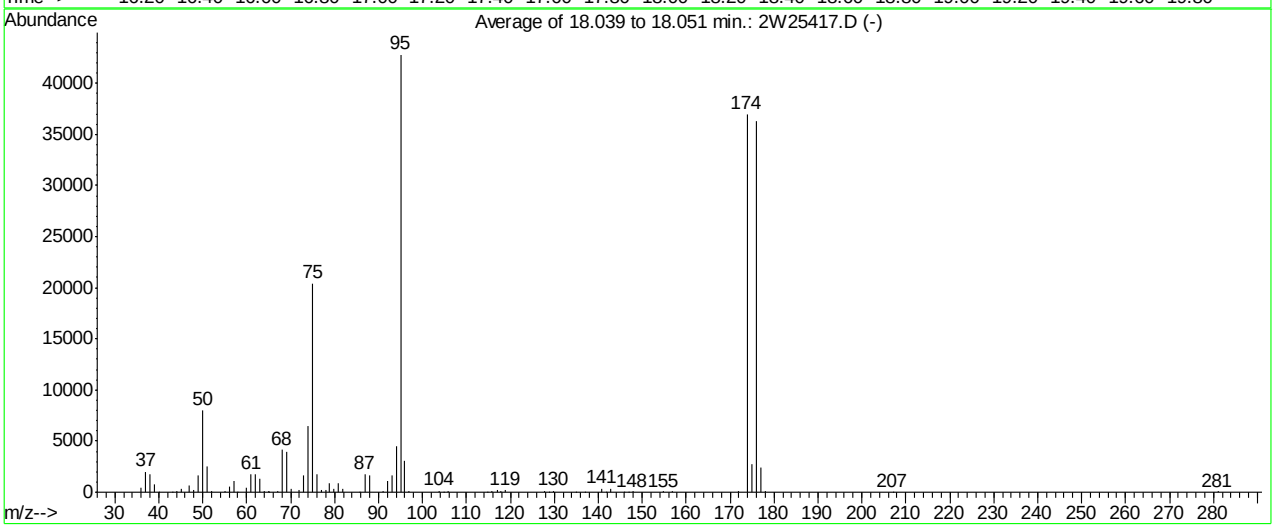
Average of 18.039 to 18.051 min.: 2W25355.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
153.80	39	281.05	108				
154.85	224						
156.85	166						
158.90	74						
160.85	115						
171.90	327						
173.90	70765						
174.90	5329						
175.90	69757						
176.90	4659						
177.85	138						

BFB

Data File : C:\MSDCHEM\1\DATA\V2W1073\2W25417.D Vial: 5
Acq On : 9 Sep 2009 8:18 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS49009,V2W1073,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um





AutoFind: Scans 2155, 2156, 2157; Background Corrected with Scan 2144

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.8	8049	PASS
75	95	30	66	47.7	20416	PASS
95	95	100	100	100.0	42808	PASS
96	95	5	9	7.1	3021	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	86.4	36965	PASS
175	174	4	9	7.5	2778	PASS
176	174	93	101	98.3	36333	PASS
177	176	5	9	6.7	2417	PASS

2W25417.D M2W1070.M Thu Sep 10 09:04:17 2009 MS2W

Average of 18.039 to 18.051 min.: 2W25417.D
BFB
Modified:subtracted

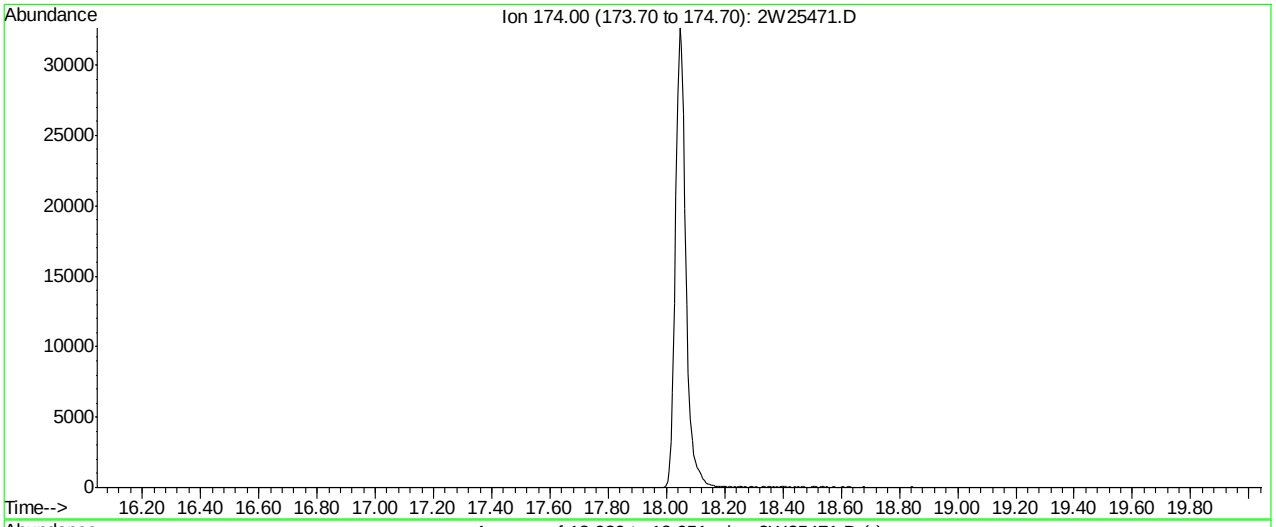
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	397	50.00	8049	64.05	125	76.00	1738
37.00	1980	51.00	2531	64.90	34	77.00	255
38.00	1775	52.00	128	65.05	61	77.95	213
39.00	745	55.00	151	67.05	126	78.90	901
39.95	8	56.00	600	68.00	4129	79.90	349
43.05	45	57.00	1076	69.00	3972	80.90	934
44.00	87	58.00	56	70.00	366	81.90	315
45.00	311	60.00	388	72.00	220	85.80	25
47.00	631	61.00	1808	73.00	1671	86.95	1779
47.95	273	62.00	1804	74.00	6442	87.95	1659
49.00	1699	63.00	1364	75.00	20416	90.95	159

Average of 18.039 to 18.051 min.: 2W25417.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
92.00	1049	116.95	174	145.85	49	207.00	41
93.00	1675	117.85	151	146.95	44	281.05	86
94.00	4536	118.95	207	147.85	106		
95.00	42808	127.85	152	154.90	86		
96.00	3021	128.90	45	156.90	65		
96.95	103	129.85	161	171.85	88		
103.85	148	134.90	20	173.90	36965		
104.90	43	136.90	22	174.90	2778		
105.90	140	140.90	361	175.90	36333		
114.80	20	141.90	26	176.90	2417		
115.85	128	142.90	347	177.95	81		

BFB

Data File : C:\MSDCHEM\1\DATA\2W25471.D Vial: 5
Acq On : 11 Sep 2009 6:34 am Operator: YOUMINH
Sample : BFB Inst : MS2W
Misc : MS85028,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um



AutoFind: Scans 2155, 2156, 2157; Background Corrected with Scan 2145

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.0	7456	PASS
75	95	30	66	49.8	18520	PASS
95	95	100	100	100.0	37216	PASS
96	95	5	9	6.9	2584	PASS
173	174	0.00	2	0.3	77	PASS
174	95	50	120	82.3	30637	PASS
175	174	4	9	7.1	2189	PASS
176	174	93	101	97.9	29986	PASS
177	176	5	9	6.5	1955	PASS

2W25471.D M2W1070.M Sun Sep 13 11:34:48 2009 MS2W

Average of 18.039 to 18.051 min.: 2W25471.D
BFB
Modified:subtracted

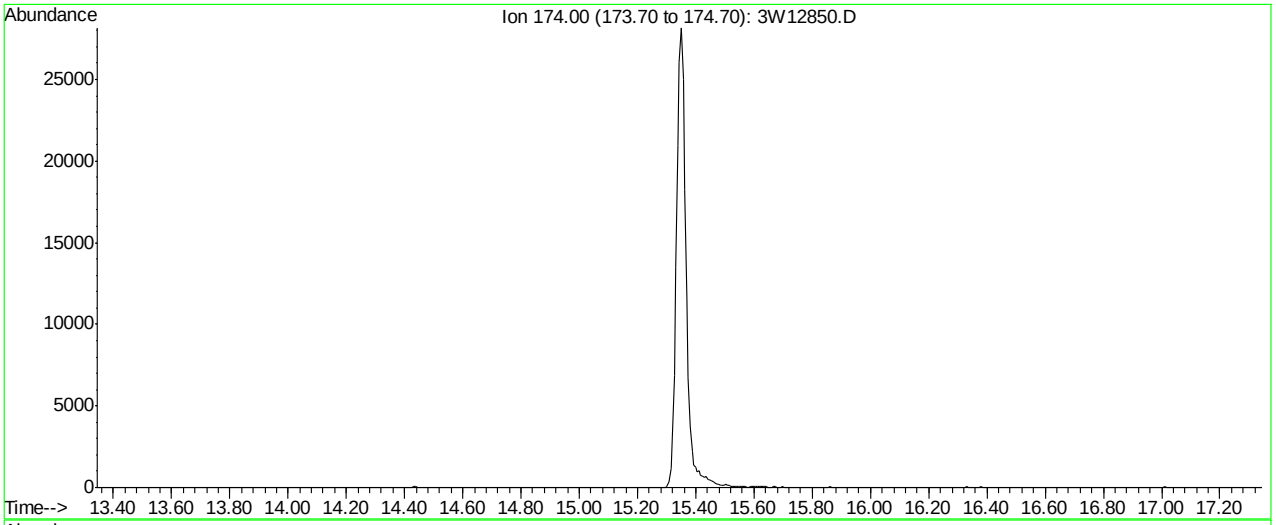
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	348	51.00	2360	66.95	96	78.90	954
37.00	1830	52.00	121	68.00	3724	79.90	413
38.00	1674	54.95	105	69.00	3756	80.90	932
39.00	699	56.00	510	70.00	318	81.95	257
40.00	20	57.00	979	71.95	195	86.90	1580
44.00	139	60.00	366	73.00	1657	87.90	1440
45.00	369	61.00	1657	74.00	6043	90.90	118
47.00	579	62.00	1636	75.00	18520	91.95	964
48.00	221	63.00	1220	76.00	1601	93.00	1594
49.00	1500	63.95	155	76.95	244	94.00	4276
50.00	7456	65.05	130	77.95	170	95.00	37216

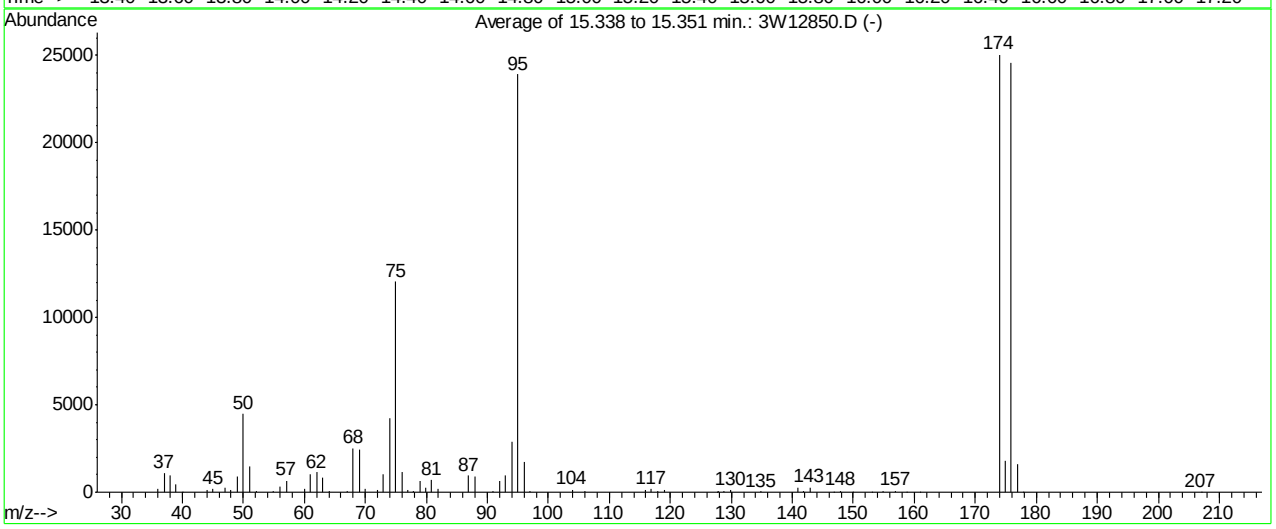
Average of 18.039 to 18.051 min.: 2W25471.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	2584	118.90	193	147.90	81		
97.05	81	127.90	119	154.90	88		
103.90	125	128.90	48	156.80	29		
104.80	21	129.85	137	171.85	162		
105.00	23	130.85	44	172.90	77		
105.90	160	134.90	21	173.90	30637		
114.90	22	136.80	25	174.90	2189		
115.85	137	140.90	281	175.90	29986		
116.90	165	141.90	20	176.90	1955		
117.80	39	142.90	336	177.90	44		
117.95	69	146.95	99	280.95	91		

BFB

Data File : C:\MSDCHEM\1\DATA\3W12850.D Vial: 5
Acq On : 2 Oct 2009 7:06 pm Operator: YOUMINH
Sample : BFB Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um





AutoFind: Scans 1859, 1860, 1861; Background Corrected with Scan 1849

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	18.7	4462	PASS
75	95	30	66	50.4	12055	PASS
95	95	100	100	100.0	23920	PASS
96	95	5	9	7.3	1743	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	104.7	25045	PASS
175	174	4	9	7.2	1800	PASS
176	174	93	101	98.0	24549	PASS
177	176	5	9	6.6	1618	PASS

3W12850.D M3W523.M Tue Oct 06 12:25:22 2009 MS3W

Average of 15.338 to 15.351 min.: 3W12850.D
BFB
Modified:subtracted

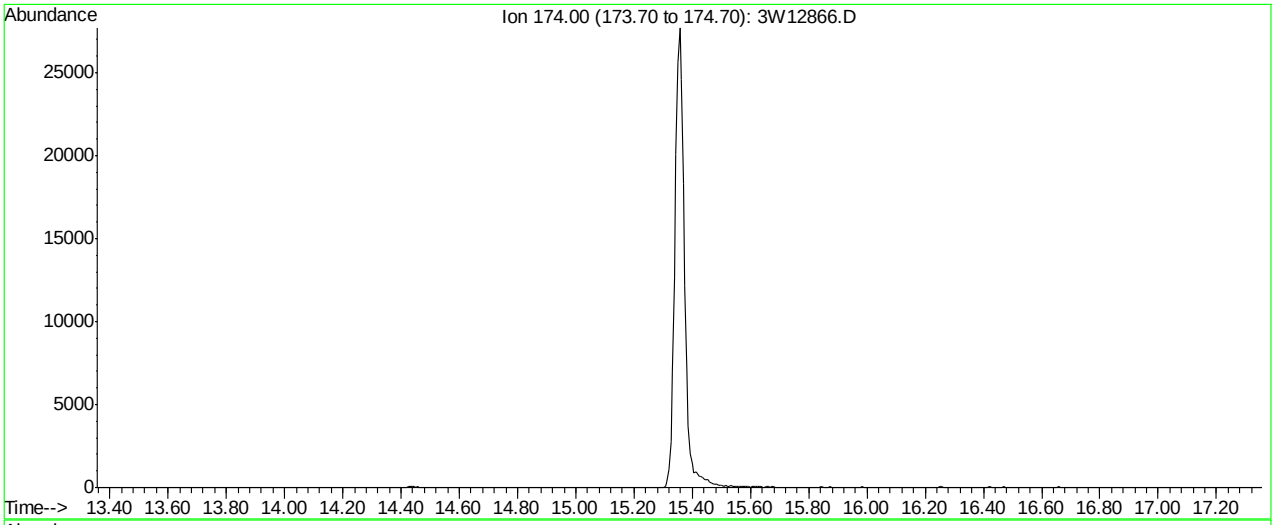
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.05	205	51.05	1472	68.00	2526	79.95	238
37.05	1099	52.05	75	69.00	2435	80.90	695
38.05	989	54.95	70	69.95	218	81.95	176
39.00	440	56.00	329	72.00	156	86.90	957
40.00	24	57.05	651	73.00	1038	87.95	892
44.00	132	60.00	215	74.00	4243	90.95	91
45.05	187	61.00	1058	75.00	12055	92.00	667
47.00	230	62.00	1134	76.00	1134	93.00	992
48.00	134	63.05	805	76.95	138	94.00	2881
49.00	922	64.05	98	77.90	84	95.00	23920
50.00	4462	67.00	57	78.95	653	96.00	1743

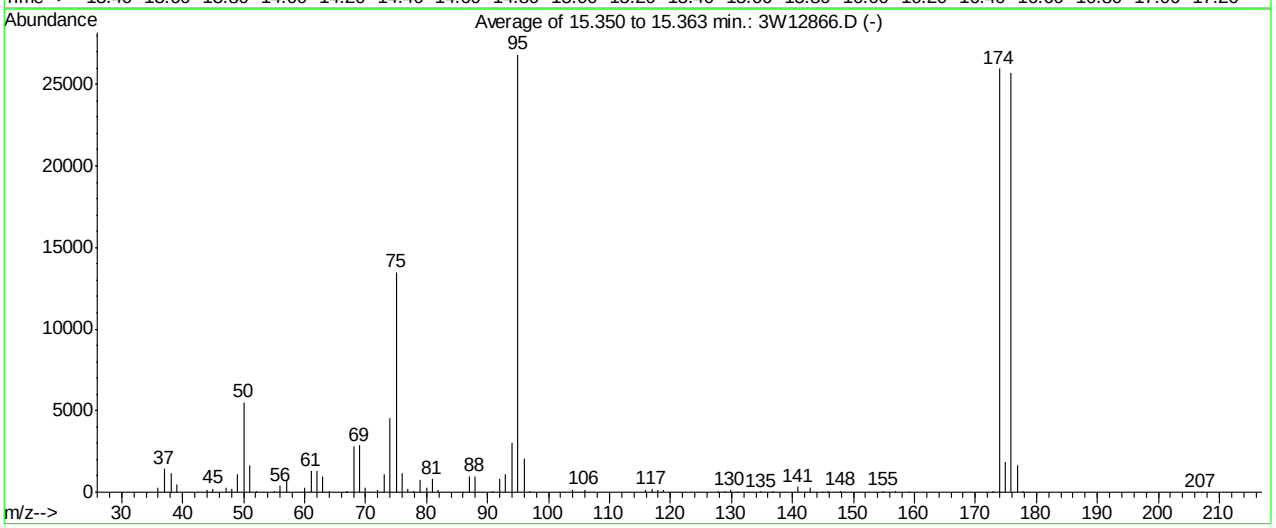
Average of 15.338 to 15.351 min.: 3W12850.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
97.05	60	134.90	62	160.90	17		
103.90	129	140.90	241	173.90	25045		
105.90	96	141.90	38	174.90	1800		
115.85	102	142.90	270	175.90	24549		
116.90	173	146.80	16	176.90	1618		
117.85	95	147.90	80	177.90	17		
118.95	132	149.90	19	207.00	24		
127.70	20	153.00	19				
127.90	66	154.90	46				
128.75	39	156.95	70				
129.90	119	158.80	34				

BFB

Data File : C:\MSDCHEM\1\DATA\3W12866.D Vial: 5
Acq On : 5 Oct 2009 7:13 am Operator: YOUMINH
Sample : BFB Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um





AutoFind: Scans 1861, 1862, 1863; Background Corrected with Scan 1851

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	20.5	5509	PASS
75	95	30	66	50.3	13487	PASS
95	95	100	100	100.0	26834	PASS
96	95	5	9	7.7	2061	PASS
173	174	0.00	2	0.3	70	PASS
174	95	50	120	96.7	25957	PASS
175	174	4	9	7.1	1846	PASS
176	174	93	101	99.1	25720	PASS
177	176	5	9	6.4	1648	PASS

3W12866.D M3W523.M Tue Oct 06 13:01:48 2009 MS3W

Average of 15.350 to 15.363 min.: 3W12866.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
36.00	274	52.05	82	68.00	2789	79.95	272
37.00	1439	55.05	84	69.00	2860	80.90	794
38.05	1184	56.05	385	70.00	245	81.90	160
39.05	465	57.00	779	71.95	128	86.00	25
44.00	128	60.00	271	73.00	1117	86.95	973
45.00	228	61.05	1281	74.00	4562	87.90	988
47.05	309	62.00	1276	75.00	13487	90.95	99
48.00	200	63.00	949	76.00	1194	92.00	826
49.00	1112	64.00	89	76.95	184	93.00	1113
50.00	5509	66.80	20	77.90	73	94.00	3035
51.05	1674	67.05	56	78.95	771	95.00	26834

Average of 15.350 to 15.363 min.: 3W12866.D
BFB
Modified:subtracted

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
96.00	2061	130.90	21	159.00	17		
96.95	44	134.90	63	172.80	70		
103.95	129	136.85	39	173.90	25957		
105.90	153	140.90	317	174.90	1846		
115.90	120	142.00	21	175.90	25720		
116.95	189	142.95	281	176.90	1648		
117.95	127	144.90	26	177.80	42		
118.90	156	145.85	41	207.00	17		
127.85	89	147.95	69				
128.95	42	154.95	87				
129.85	130	156.90	79				

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:37 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	121875	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	602919	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	324618	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	324618	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	180344	5.45	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 109.00%

Target Compounds						Qvalue
2) FREON 115	5.01	119	115320	9.19	PPBV	100
3) DICHLORODIFLUOROMETHANE	5.01	85	180109	9.51	PPBV	100
4) FREON 152A	5.13	65	131899	10.15	PPBV	100
5) CHLORODIFLUOROMETHANE	5.17	67	50430	9.94	PPBV	100
6) PROPYLENE	5.21	41	214297	10.05	PPBV	100
7) PROPANE	5.24	43	76207	9.17	PPBV #	100
8) FREON 114	5.56	85	497134	9.78	PPBV	100
9) CHLOROMETHANE	5.46	52	70283	9.86	PPBV	97
10) VINYL CHLORIDE	5.69	62	226276	10.13	PPBV	100
11) 1,3-BUTADIENE	5.82	54	176547	10.32	PPBV	100
12) n-BUTANE	5.88	43	367874	9.99	PPBV	100
13) BROMOMETHANE	6.11	94	174888	9.77	PPBV	100
14) CHLOROETHANE	6.28	64	122721	10.39	PPBV	100
15) FREON 123	6.75	83	390491	10.12	PPBV #	100
16) FREON 123A	6.81	117	203864	9.70	PPBV	100
17) TRICHLOROFLUOROMETHANE	7.05	101	406630	9.60	PPBV	100
18) ISOPROPYL ALCOHOL	7.08	45	303139	9.72	PPBV	100
19) ACETONE	6.86	58	84912	9.62	PPBV	100
20) PENTANE	7.40	42	244369	9.43	PPBV	100
21) TVHC as EQUIV PENTANE	7.39	TIC	1459582m	10.27	PPBV	
22) ETHYL ETHER	7.39	74	86494	10.19	PPBV	100
23) IODOMETHANE	7.63	142	418692	10.05	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.69	96	159177	9.52	PPBV	100
25) CARBON DISULFIDE	8.15	76	552501	9.68	PPBV	100
26) ETHANOL	6.38	45	67692	9.29	PPBV	100
27) BROMOETHENE	6.64	106	165747	10.08	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	153657	9.15	PPBV	99
29) 3-CHLOROPROPENE	7.92	76	86156	10.18	PPBV	100
30) FREON 113	8.05	151	253620	9.61	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	194366	9.82	PPBV	100
32) TERTIARY BUTYL ALCOHOL	7.69	59	362174	10.26	PPBV	100
33) METHYL TERTIARY BUTYL ETHE	8.97	73	470257	10.08	PPBV	100
34) TETRAHYDROFURAN	10.48	42	253551	10.59	PPBV	100
35) HEXANE	9.98	57	305394	10.30	PPBV	100
36) VINYL ACETATE	9.04	86	41483	10.64	PPBV	100
37) 1,1-DICHLOROETHANE	8.94	63	377623	10.16	PPBV	100
38) METHYL ETHYL KETONE	9.30	72	91118	10.18	PPBV	100
39) cis-1,2-DICHLOROETHYLENE	9.77	96	192874	9.96	PPBV	100
40) ETHYL ACETATE	9.95	61	57311	10.16	PPBV	100
41) CHLOROFORM	10.07	83	358439	10.13	PPBV	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:37 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	362219	10.42	PPBV		100
43)	1,1,1-TRICHLOROETHANE	11.09	97	367972	10.16	PPBV		100
44)	CARBON TETRACHLORIDE	11.72	117	379122	10.08	PPBV		100
45)	1,2-DICHLOROETHANE	10.82	62	264373	10.41	PPBV		100
47)	BENZENE	11.56	78	603850	9.70	PPBV		100
48)	CYCLOHEXANE	11.85	84	259784	9.31	PPBV		100
49)	2,3-DIMETHYLPENTANE	12.06	71	132993	10.26	PPBV		100
50)	TRICHLOROETHYLENE	12.62	95	221136	9.76	PPBV		100
51)	1,2-DICHLOROPROPANE	12.39	63	237516	10.25	PPBV		100
52)	BROMODICHLOROMETHANE	12.58	83	381640	10.32	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	841921	9.85	PPBV		100
54)	1,4-DIOXANE	12.62	88	109047	9.62	PPBV		100
55)	METHYL METHACRYLATE	12.78	69	184302	10.21	PPBV		100
56)	HEPTANE	12.89	43	378222	10.04	PPBV		100
57)	TVHC as EQUIV HEPTANE	12.90	TIC	1537019m	10.06	PPBV		
58)	METHYL ISOBUTYL KETONE	13.51	43	433341	9.97	PPBV		100
59)	cis-1,3-DICHLOROPROPENE	13.49	75	320130	10.62	PPBV		100
60)	TOLUENE	14.53	92	392299	10.38	PPBV		100
61)	trans-1,3-DICHLOROPROPENE	14.03	75	300475	10.56	PPBV		100
62)	1,1,2-TRICHLOROETHANE	14.22	83	188848	10.26	PPBV		100
64)	2-HEXANONE	14.77	58	203283	8.84	PPBV		100
65)	TETRACHLOROETHYLENE	15.73	164	234921	9.24	PPBV		100
66)	DIBROMOCHLOROMETHANE	14.98	129	356064	10.01	PPBV		100
67)	1,2-DIBROMOETHANE	15.25	107	297731	9.57	PPBV		100
68)	OCTANE	15.52	43	473508	10.36	PPBV		100
69)	1,1,1,2-TETRACHLOROETHANE	16.44	131	238630	9.99	PPBV	#	100
70)	CHLOROBENZENE	16.46	112	405554	9.15	PPBV		100
71)	ETHYLBENZENE	16.85	91	731267	9.82	PPBV		100
72)	m,p-XYLENE	17.05	106	529697	19.68	PPBV		100
73)	o-XYLENE	17.56	106	249063	9.85	PPBV		100
74)	STYRENE	17.44	104	385389	10.72	PPBV		100
75)	NONANE	17.75	43	409959	10.97	PPBV		100
76)	BROMOFORM	17.17	173	284402	10.29	PPBV		100
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	298300	9.84	PPBV		100
79)	ISOPROPYLBENZENE	18.18	105	672075	10.20	PPBV		100
80)	2-CHLOROTOLUENE	18.71	126	151885	10.19	PPBV		100
81)	n-PROPYLBENZENE	18.73	120	165506	10.47	PPBV		100
82)	4-ETHYLTOLUENE	18.89	105	542858	10.61	PPBV		100
83)	1,3,5-TRIMETHYLBENZENE	18.97	105	444154	10.38	PPBV		100
84)	TERT-BUTYLBENZENE	19.41	134	111492	10.39	PPBV		100
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	384892	10.73	PPBV		100
86)	m-DICHLOROBENZENE	19.61	146	214774	10.07	PPBV		100
87)	BENZYL CHLORIDE	19.58	91	222413	9.92	PPBV		100
88)	p-DICHLOROBENZENE	19.68	146	189986	9.63	PPBV		100
89)	SEC-BUTYLBENZENE	19.71	134	118909	10.48	PPBV		100
90)	p-ISOPROPYLTOLUENE	19.88	134	113549	10.76	PPBV		100
91)	o-DICHLOROBENZENE	20.06	146	175047	9.93	PPBV		100
92)	n-BUTYLBENZENE	20.35	134	73929	10.45	PPBV		100
93)	HEXACHLOROBUTADIENE	22.43	225	47839	7.70	PPBV		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:37 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

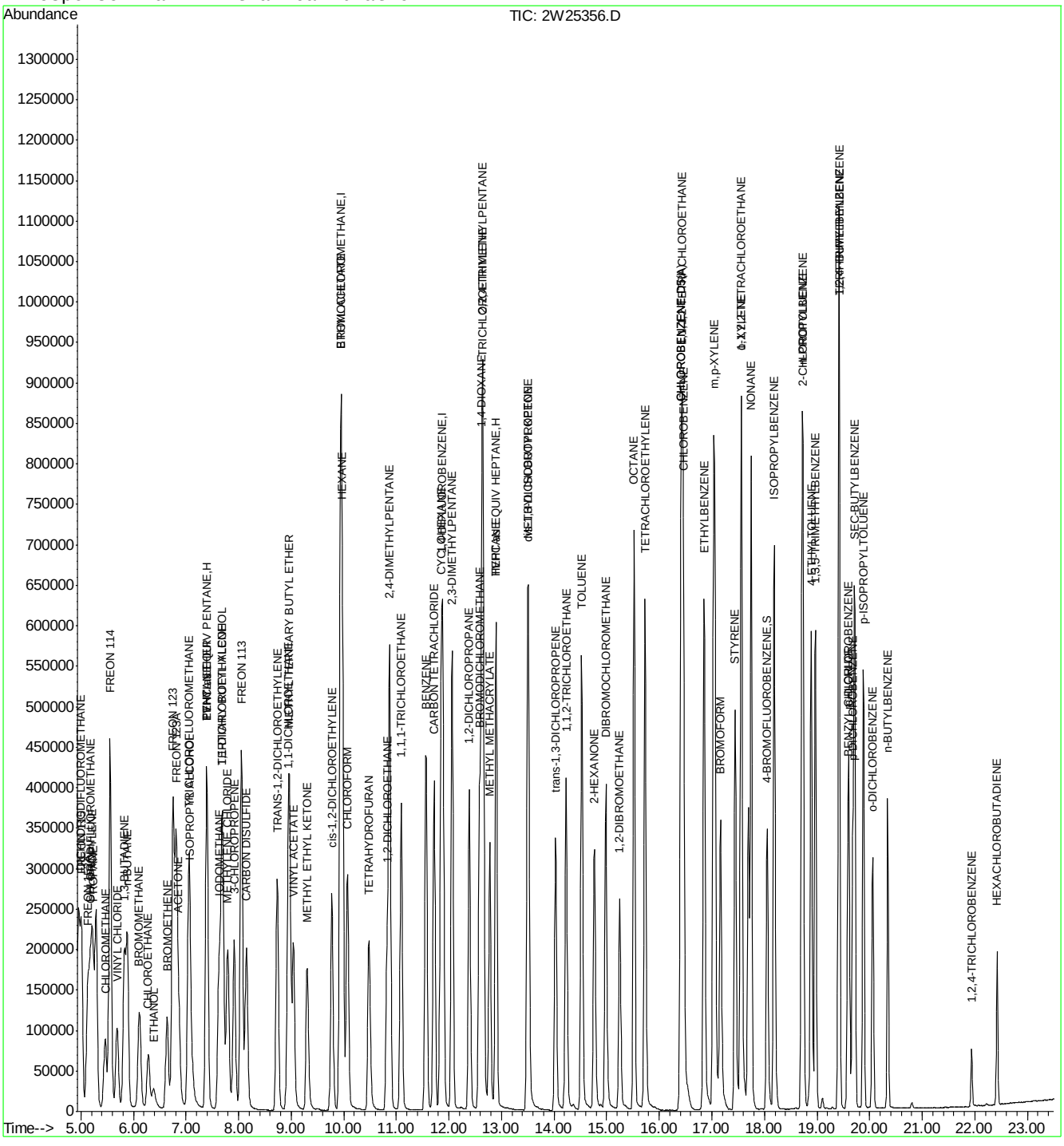
Compound	R.T.	QIon	Response	Conc Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	30104	7.53 PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:47 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

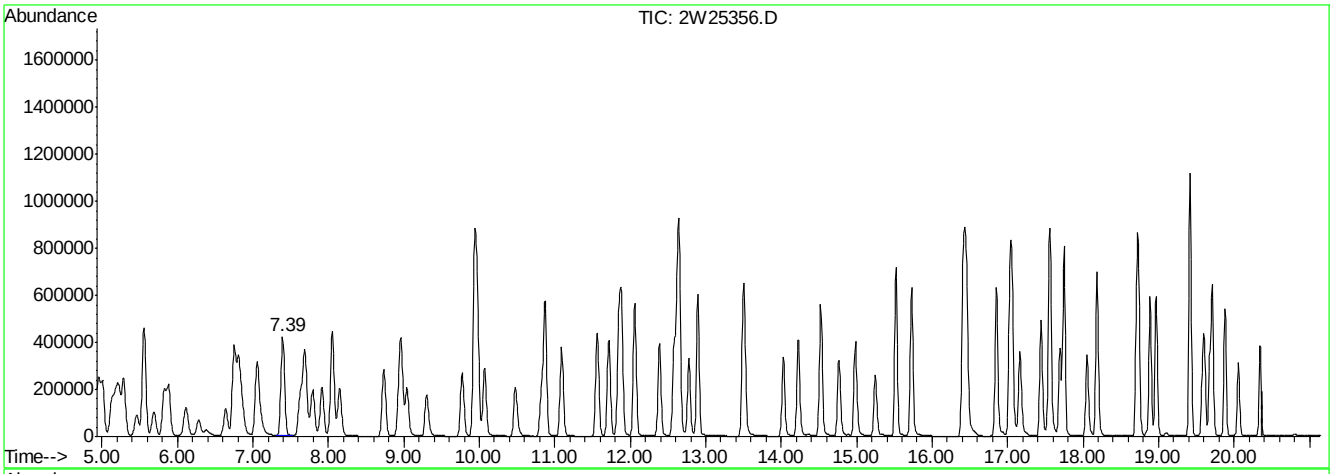


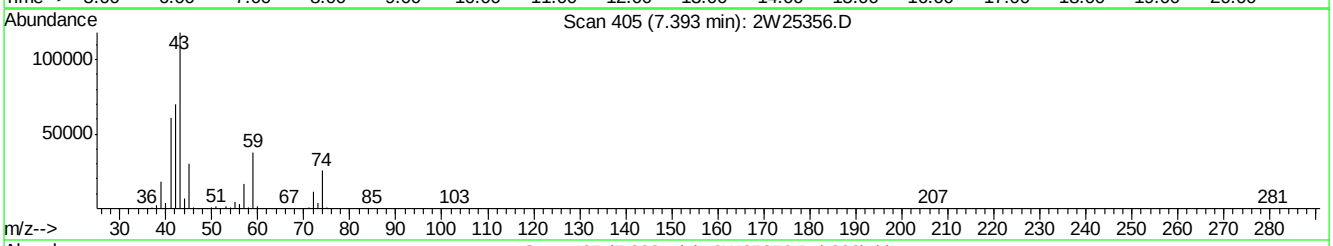
ACCUTEST Laboratories JA28237

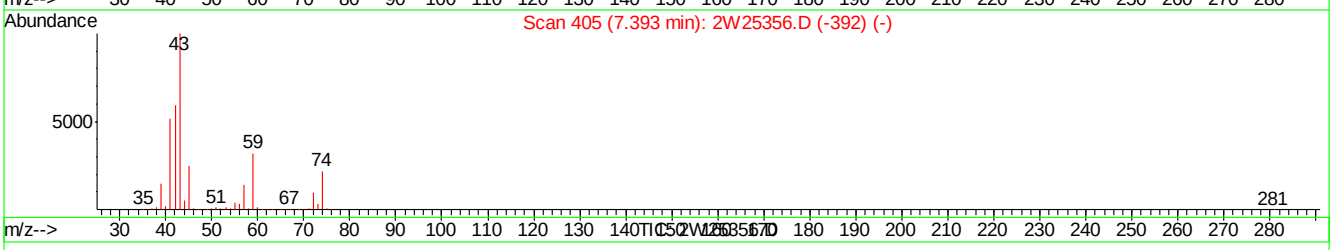
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 10.27PPBV m

response 1459582

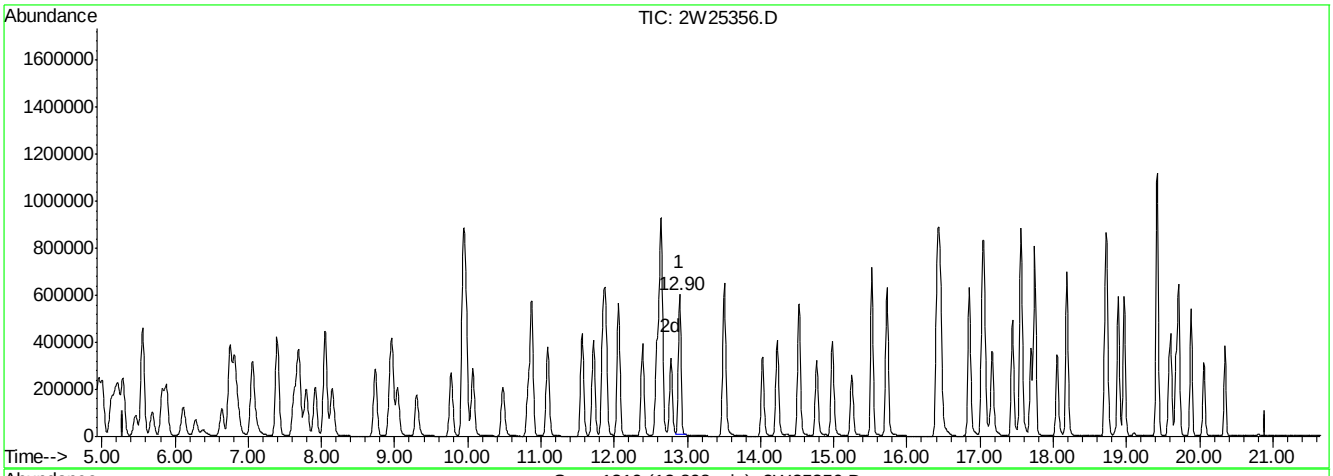
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

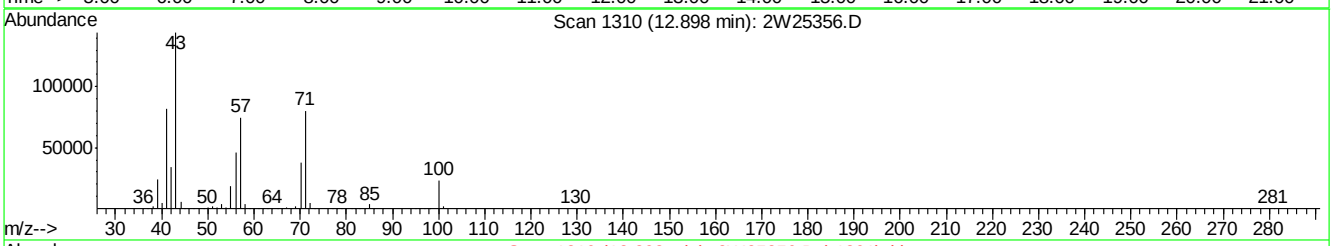
2W25356.D M2W1070.M Sun Sep 06 15:06:49 2009 MS2W

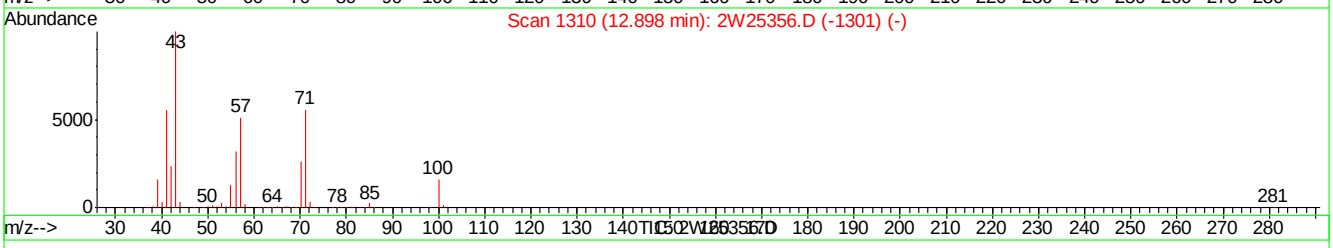
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25356.D Vial: 2
Acq On : 5 Sep 2009 11:46 am Operator: YOUMINH
Sample : ICC1070-10 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 10.06PPBV m

response 1537019

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25356.D M2W1070.M Sun Sep 06 15:06:53 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:39 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	136804	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	642918	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	301322	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	301322	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	143688	4.67	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 93.40%

Target Compounds						Qvalue
2) FREON 115	5.01	119	6645	0.47	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	10036	0.47	PPBV	97
4) FREON 152A	5.14	65	6725	0.46	PPBV	91
5) CHLORODIFLUOROMETHANE	5.17	67	2811	0.49	PPBV #	42
6) PROPYLENE	5.21	41	11924	0.50	PPBV	99
7) PROPANE	5.23	43	4675	0.50	PPBV #	100
8) FREON 114	5.56	85	27474	0.48	PPBV	99
9) CHLOROMETHANE	5.46	52	3814	0.48	PPBV #	53
10) VINYL CHLORIDE	5.68	62	11942	0.48	PPBV	99
11) 1,3-BUTADIENE	5.84	54	9251	0.48	PPBV	98
12) n-BUTANE	5.89	43	19753	0.48	PPBV #	96
13) BROMOMETHANE	6.12	94	9548	0.48	PPBV	98
14) CHLOROETHANE	6.29	64	6378	0.48	PPBV	98
15) FREON 123	6.77	83	22397	0.52	PPBV #	98
16) FREON 123A	6.81	117	11776	0.50	PPBV	99
17) TRICHLOROFLUOROMETHANE	7.05	101	22442	0.47	PPBV	98
18) ISOPROPYL ALCOHOL	7.16	45	18964	0.54	PPBV	93
19) ACETONE	6.91	58	5145	0.52	PPBV	97
20) PENTANE	7.40	42	13992	0.48	PPBV	96
21) TVHC as EQUIV PENTANE	7.40	TIC	76713m	0.48	PPBV	
22) ETHYL ETHER	7.44	74	4431	0.46	PPBV	94
23) IODOMETHANE	7.64	142	22103	0.47	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.69	96	9002	0.48	PPBV	99
25) CARBON DISULFIDE	8.15	76	31271	0.49	PPBV	98
26) ETHANOL	6.45	45	3739	0.46	PPBV #	93
27) BROMOETHENE	6.64	106	8543	0.46	PPBV	99
28) METHYLENE CHLORIDE	7.79	84	9651	0.51	PPBV	95
29) 3-CHLOROPROPENE	7.92	76	4230	0.45	PPBV #	89
30) FREON 113	8.06	151	14162	0.48	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	10707	0.48	PPBV	95
32) TERTIARY BUTYL ALCOHOL	7.76	59	21143	0.53	PPBV	95
33) METHYL TERTIARY BUTYL ETHE	9.01	73	27312	0.52	PPBV	96
34) TETRAHYDROFURAN	10.53	42	13251	0.49	PPBV	97
35) HEXANE	9.98	57	16728	0.50	PPBV	97
36) VINYL ACETATE	9.06	86	2038	0.47	PPBV #	29
37) 1,1-DICHLOROETHANE	8.94	63	21358	0.51	PPBV	99
38) METHYL ETHYL KETONE	9.35	72	4657	0.46	PPBV #	90
39) cis-1,2-DICHLOROETHYLENE	9.77	96	10560	0.49	PPBV	96
40) ETHYL ACETATE	9.98	61	3403	0.54	PPBV #	96
41) CHLOROFORM	10.07	83	19763	0.50	PPBV	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:39 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	20042	0.51	PPBV		98
43)	1,1,1-TRICHLOROETHANE	11.09	97	20453	0.50	PPBV		98
44)	CARBON TETRACHLORIDE	11.71	117	21141	0.50	PPBV		98
45)	1,2-DICHLOROETHANE	10.83	62	14214	0.50	PPBV		99
47)	BENZENE	11.56	78	33419	0.50	PPBV		100
48)	CYCLOHEXANE	11.85	84	14853	0.50	PPBV	#	35
49)	2,3-DIMETHYLPENTANE	12.06	71	6642	0.48	PPBV		88
50)	TRICHLOROETHYLENE	12.62	95	12941	0.54	PPBV		99
51)	1,2-DICHLOROPROPANE	12.39	63	12410	0.50	PPBV		98
52)	BROMODICHLOROMETHANE	12.58	83	20473	0.52	PPBV		98
53)	2,2,4-TRIMETHYLPENTANE	12.64	57	52269	0.57	PPBV		97
54)	1,4-DIOXANE	12.69	88	6747	0.56	PPBV	#	33
55)	METHYL METHACRYLATE	12.79	69	9552	0.50	PPBV		98
56)	HEPTANE	12.89	43	20818	0.52	PPBV		98
57)	TVHC as EQUIV HEPTANE	12.89	TIC	81705m	0.50	PPBV		
58)	METHYL ISOBUTYL KETONE	13.53	43	26254	0.57	PPBV		95
59)	cis-1,3-DICHLOROPROPENE	13.49	75	16311	0.51	PPBV		91
60)	TOLUENE	14.52	92	20678	0.51	PPBV		98
61)	trans-1,3-DICHLOROPROPENE	14.03	75	14577	0.48	PPBV		97
62)	1,1,2-TRICHLOROETHANE	14.22	83	9629	0.49	PPBV		97
64)	2-HEXANONE	14.78	58	12887	0.60	PPBV		92
65)	TETRACHLOROETHYLENE	15.73	164	12661	0.54	PPBV		98
66)	DIBROMOCHLOROMETHANE	14.98	129	16727	0.51	PPBV		99
67)	1,2-DIBROMOETHANE	15.25	107	14927	0.52	PPBV	#	98
68)	OCTANE	15.52	43	23040	0.54	PPBV		97
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	11288	0.51	PPBV	#	97
70)	CHLOROBENZENE	16.46	112	21652	0.53	PPBV	#	80
71)	ETHYLBENZENE	16.85	91	36595	0.53	PPBV		99
72)	m,p-XYLENE	17.05	106	26605	1.06	PPBV		90
73)	o-XYLENE	17.55	106	12491	0.53	PPBV		91
74)	STYRENE	17.44	104	15616	0.47	PPBV		100
75)	NONANE	17.75	43	18716	0.54	PPBV	#	93
76)	BROMOFORM	17.16	173	12050	0.47	PPBV		98
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	14155	0.50	PPBV		98
79)	ISOPROPYLBENZENE	18.18	105	31893	0.52	PPBV		97
80)	2-CHLOROTOLUENE	18.71	126	6433	0.46	PPBV	#	77
81)	n-PROPYLBENZENE	18.73	120	6737	0.46	PPBV		67
82)	4-ETHYLTOLUENE	18.88	105	22076	0.46	PPBV	#	99
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	19925	0.50	PPBV		96
84)	TERT-BUTYLBENZENE	19.41	134	4580	0.46	PPBV		82
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	16645	0.50	PPBV		95
86)	m-DICHLOROBENZENE	19.60	146	9018	0.46	PPBV		98
87)	BENZYL CHLORIDE	19.58	91	9916	0.48	PPBV		98
88)	p-DICHLOROBENZENE	19.68	146	8784	0.48	PPBV		97
89)	SEC-BUTYLBENZENE	19.71	134	4823	0.46	PPBV		86
90)	p-ISOPROPYLTOLUENE	19.88	134	4081	0.42	PPBV		84
91)	o-DICHLOROBENZENE	20.06	146	7472	0.46	PPBV		97
92)	n-BUTYLBENZENE	20.34	134	2686	0.41	PPBV		86
93)	HEXACHLOROBUTADIENE	22.43	225	4338	0.75	PPBV		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:39 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

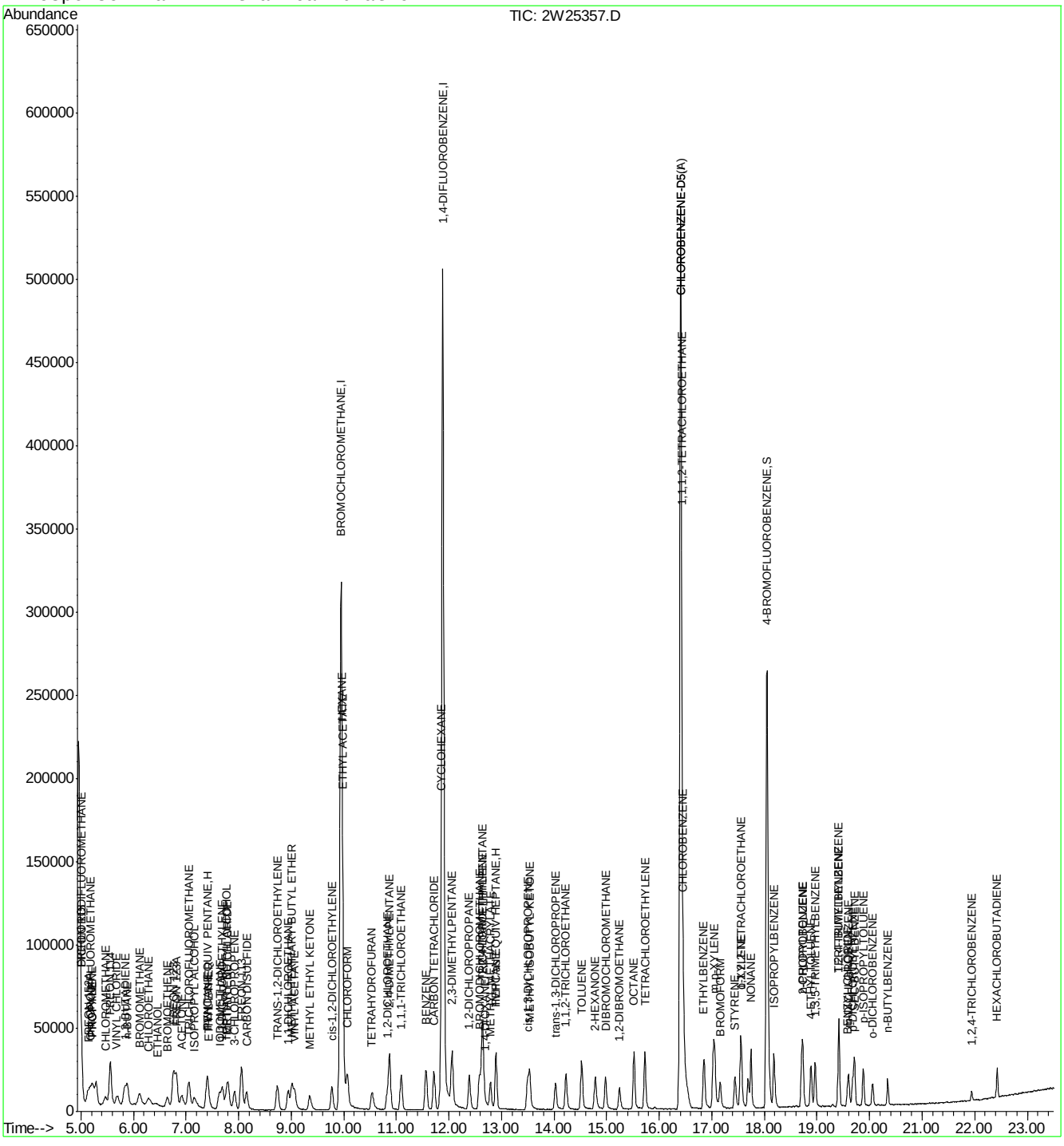
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	2463	0.66	PPBV #	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:49 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

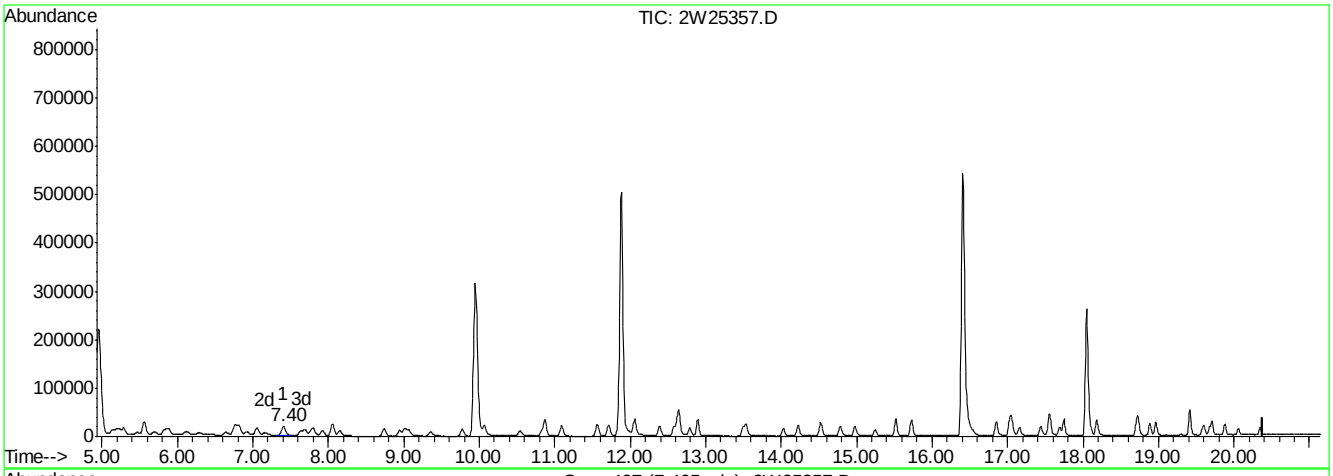


ACCUTEST Laboratories JA28237

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:49 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration



(21) TVHC as EQUIV PENTANE (H)

7.40min 0.48PPBV m

response 76713

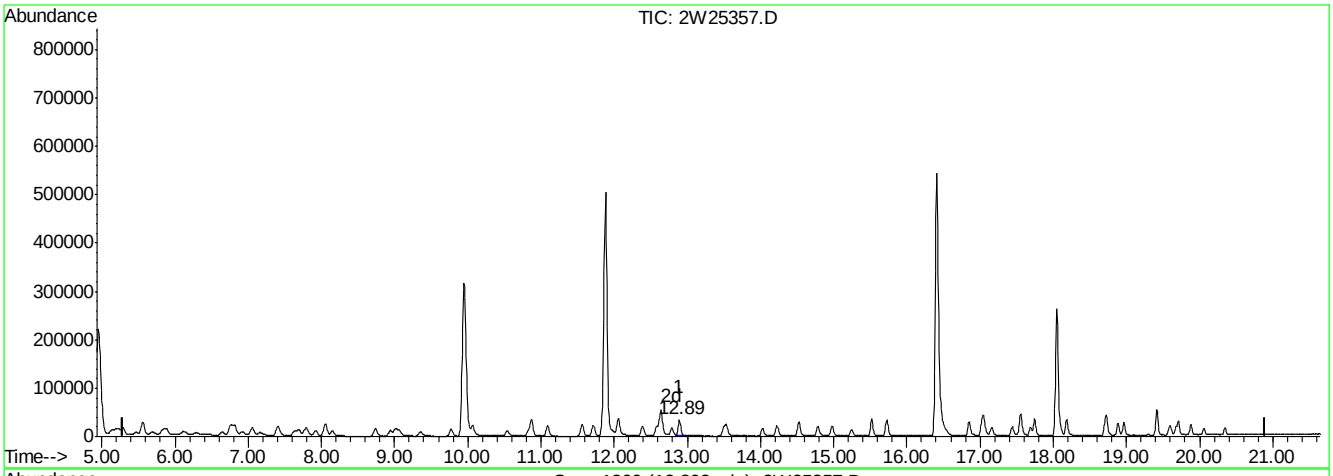
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

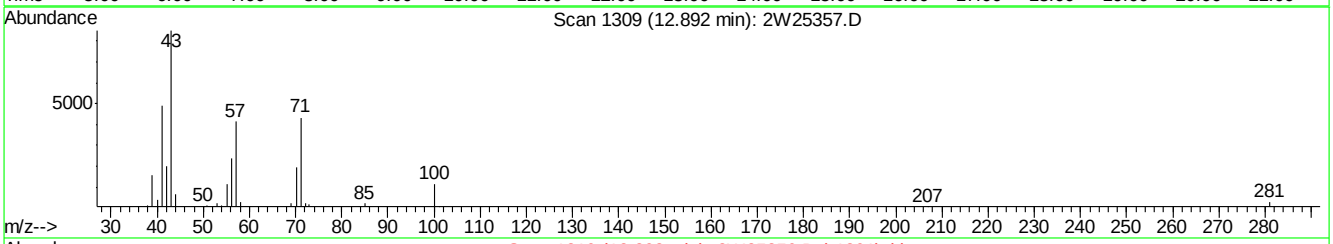
2W25357.D M2W1070.M Sun Sep 06 15:07:02 2009 MS2W

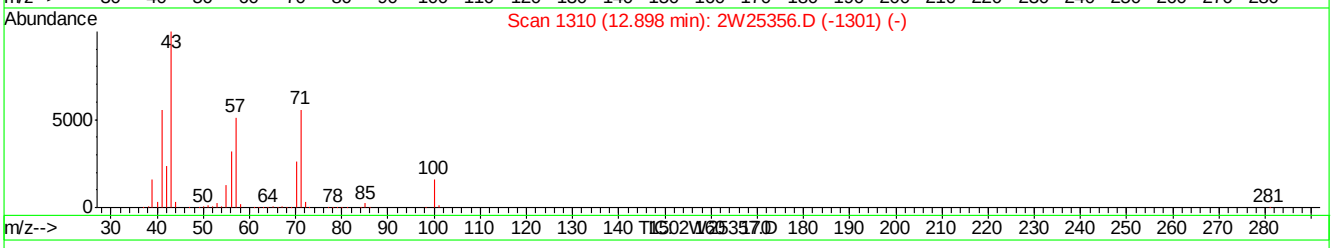
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25357.D Vial: 1
Acq On : 5 Sep 2009 12:30 pm Operator: YOUMINH
Sample : IC1070-0.5 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:49 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 0.50PPBV m

response 81705

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25357.D M2W1070.M Sun Sep 06 15:07:07 2009 MS2W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu
09/14/09 08:59

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:45 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	136025	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	633129	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	292447	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	292447	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	130921	4.39	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 87.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	3143	0.22	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	4745	0.22	PPBV #	89
4) FREON 152A	5.12	65	3238	0.22	PPBV	94
5) CHLORODIFLUOROMETHANE	5.17	67	1279	0.23	PPBV #	42
6) PROPYLENE	5.21	41	5653	0.24	PPBV	94
7) PROPANE	5.23	43	2748	0.30	PPBV #	100
8) FREON 114	5.56	85	13000	0.23	PPBV	99
9) CHLOROMETHANE	5.46	52	1878	0.24	PPBV #	67
10) VINYL CHLORIDE	5.68	62	5492	0.22	PPBV #	93
11) 1,3-BUTADIENE	5.83	54	4239	0.22	PPBV	98
12) n-BUTANE	5.88	43	9431	0.23	PPBV #	97
13) BROMOMETHANE	6.12	94	4323	0.22	PPBV #	93
14) CHLOROETHANE	6.29	64	2823	0.21	PPBV #	45
15) FREON 123	6.75	83	9104	0.21	PPBV #	98
16) FREON 123A	6.81	117	5128	0.22	PPBV	96
17) TRICHLOROFLUOROMETHANE	7.05	101	10187	0.22	PPBV #	96
18) ISOPROPYL ALCOHOL	7.17	45	8093	0.23	PPBV	81
19) ACETONE	6.92	58	2298	0.23	PPBV	91
20) PENTANE	7.39	42	6647	0.23	PPBV	94
21) TVHC as EQUIV PENTANE	7.40	TIC	33717m	0.21	PPBV	
22) ETHYL ETHER	7.44	74	1785	0.19	PPBV	94
23) IODOMETHANE	7.64	142	9744	0.21	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.69	96	4129	0.22	PPBV	92
25) CARBON DISULFIDE	8.15	76	14079	0.22	PPBV	96
26) ETHANOL	6.47	45	2351m	0.29	PPBV	
27) BROMOETHENE	6.64	106	3772	0.21	PPBV #	93
28) METHYLENE CHLORIDE	7.79	84	4838	0.26	PPBV	95
29) 3-CHLOROPROPENE	7.92	76	1861	0.20	PPBV #	87
30) FREON 113	8.05	151	6342	0.22	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	4830	0.22	PPBV	92
32) TERTIARY BUTYL ALCOHOL	7.78	59	7490	0.19	PPBV	83
33) METHYL TERTIARY BUTYL ETHE	9.02	73	11007	0.21	PPBV	93
34) TETRAHYDROFURAN	10.54	42	5412	0.20	PPBV	94
35) HEXANE	9.98	57	7391	0.22	PPBV	97
36) VINYL ACETATE	9.08	86	698m	0.16	PPBV	
37) 1,1-DICHLOROETHANE	8.94	63	9256	0.22	PPBV #	88
38) METHYL ETHYL KETONE	9.37	72	1918	0.19	PPBV #	84
39) cis-1,2-DICHLOROETHYLENE	9.78	96	4527	0.21	PPBV	95
40) ETHYL ACETATE	9.98	61	1296m	0.21	PPBV	
41) CHLOROFORM	10.07	83	8566	0.22	PPBV	97

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:45 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	8223	0.21	PPBV		95
43)	1,1,1-TRICHLOROETHANE	11.09	97	8647	0.21	PPBV		99
44)	CARBON TETRACHLORIDE	11.71	117	9033	0.22	PPBV		97
45)	1,2-DICHLOROETHANE	10.83	62	6096	0.22	PPBV	#	92
47)	BENZENE	11.56	78	14357	0.22	PPBV		99
48)	CYCLOHEXANE	11.85	84	6808	0.23	PPBV	#	1
49)	2,3-DIMETHYLPENTANE	12.06	71	2747	0.20	PPBV	#	83
50)	TRICHLOROETHYLENE	12.62	95	5537	0.23	PPBV		96
51)	1,2-DICHLOROPROPANE	12.39	63	5099	0.21	PPBV		98
52)	BROMODICHLOROMETHANE	12.58	83	8498	0.22	PPBV	#	97
53)	2,2,4-TRIMETHYLPENTANE	12.64	57	21883	0.24	PPBV		99
54)	1,4-DIOXANE	12.72	88	2437	0.20	PPBV	#	9
55)	METHYL METHACRYLATE	12.79	69	3629	0.19	PPBV		94
56)	HEPTANE	12.89	43	9166	0.23	PPBV		92
57)	TVHC as EQUIV HEPTANE	12.89	TIC	35008m	0.22	PPBV		
58)	METHYL ISOBUTYL KETONE	13.54	43	10500	0.23	PPBV		94
59)	cis-1,3-DICHLOROPROPENE	13.49	75	6671	0.21	PPBV		89
60)	TOLUENE	14.52	92	8531	0.21	PPBV		96
61)	trans-1,3-DICHLOROPROPENE	14.03	75	5676	0.19	PPBV		95
62)	1,1,2-TRICHLOROETHANE	14.22	83	4020	0.21	PPBV		99
64)	2-HEXANONE	14.79	58	5392	0.26	PPBV	#	81
65)	TETRACHLOROETHYLENE	15.72	164	5233	0.23	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.98	129	6721	0.21	PPBV		98
67)	1,2-DIBROMOETHANE	15.24	107	5921	0.21	PPBV	#	99
68)	OCTANE	15.52	43	8903	0.22	PPBV		96
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	4600	0.21	PPBV	#	96
70)	CHLOROBENZENE	16.45	112	9079	0.23	PPBV		92
71)	ETHYLBENZENE	16.85	91	14854	0.22	PPBV		97
72)	m,p-XYLENE	17.04	106	10507	0.43	PPBV		99
73)	o-XYLENE	17.56	106	4783	0.21	PPBV		90
74)	STYRENE	17.44	104	5833	0.18	PPBV		98
75)	NONANE	17.74	43	7186	0.21	PPBV	#	89
76)	BROMOFORM	17.16	173	4619	0.19	PPBV	#	92
78)	1,1,2,2-TETRACHLOROETHANE	17.54	83	5680	0.21	PPBV	#	91
79)	ISOPROPYLBENZENE	18.18	105	12340	0.21	PPBV		97
80)	2-CHLOROTOLUENE	18.71	126	2523	0.19	PPBV	#	77
81)	n-PROPYLBENZENE	18.73	120	2530	0.18	PPBV		63
82)	4-ETHYLTOLUENE	18.88	105	8363	0.18	PPBV	#	97
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	7087	0.18	PPBV	#	91
84)	TERT-BUTYLBENZENE	19.41	134	1749	0.18	PPBV		88
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	5848	0.18	PPBV		93
86)	m-DICHLOROBENZENE	19.61	146	3768	0.20	PPBV		92
87)	BENZYL CHLORIDE	19.58	91	3997	0.20	PPBV	#	60
88)	p-DICHLOROBENZENE	19.68	146	3770	0.21	PPBV		97
89)	SEC-BUTYLBENZENE	19.71	134	1641	0.16	PPBV	#	72
90)	p-ISOPROPYLTOLUENE	19.88	134	1412	0.15	PPBV		86
91)	o-DICHLOROBENZENE	20.06	146	3090	0.19	PPBV		95
92)	n-BUTYLBENZENE	20.34	134	1000	0.16	PPBV		89
93)	HEXACHLOROBUTADIENE	22.43	225	1596	0.29	PPBV		97

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:45 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

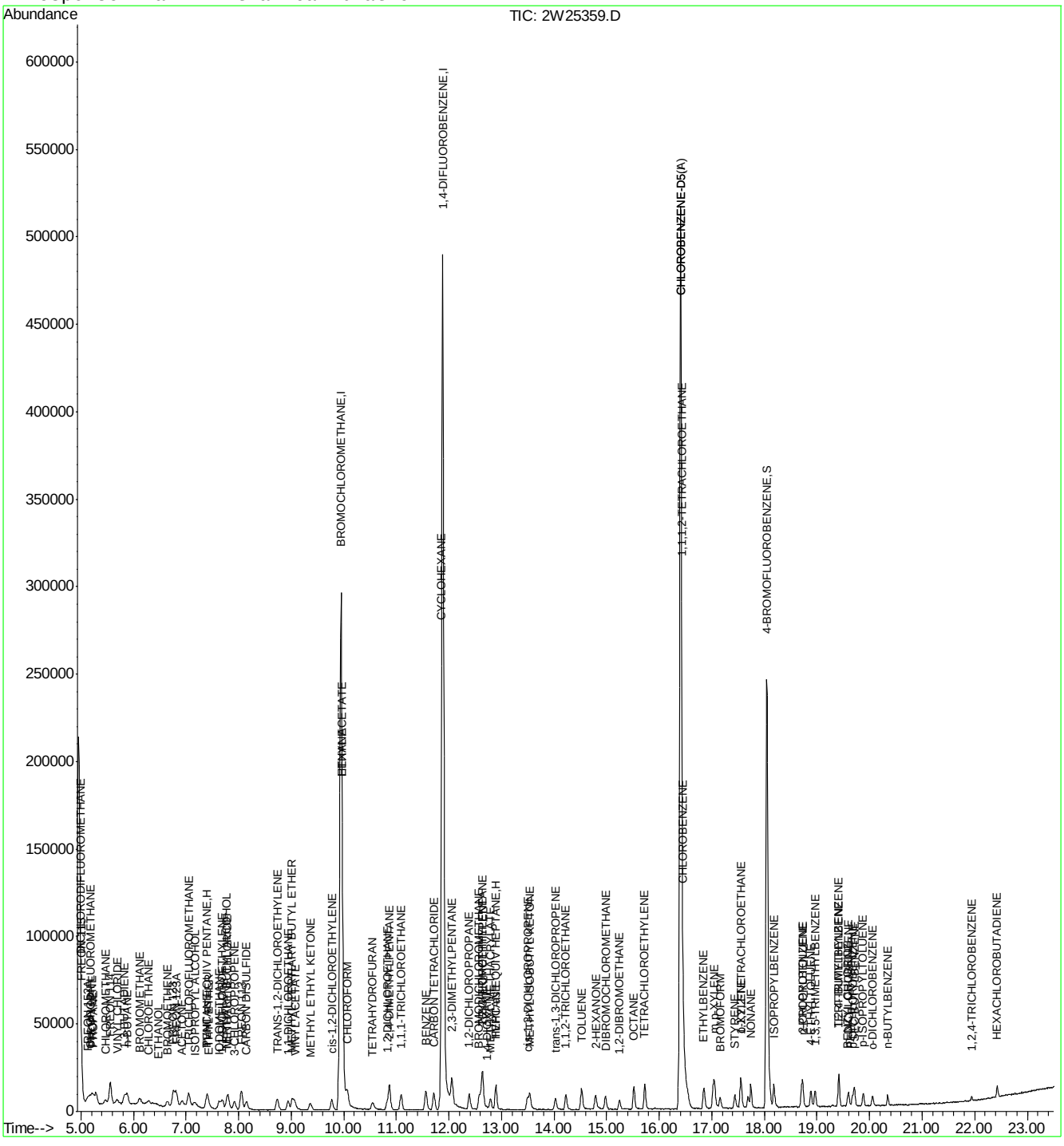
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	1025	0.28	PPBV #	12

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

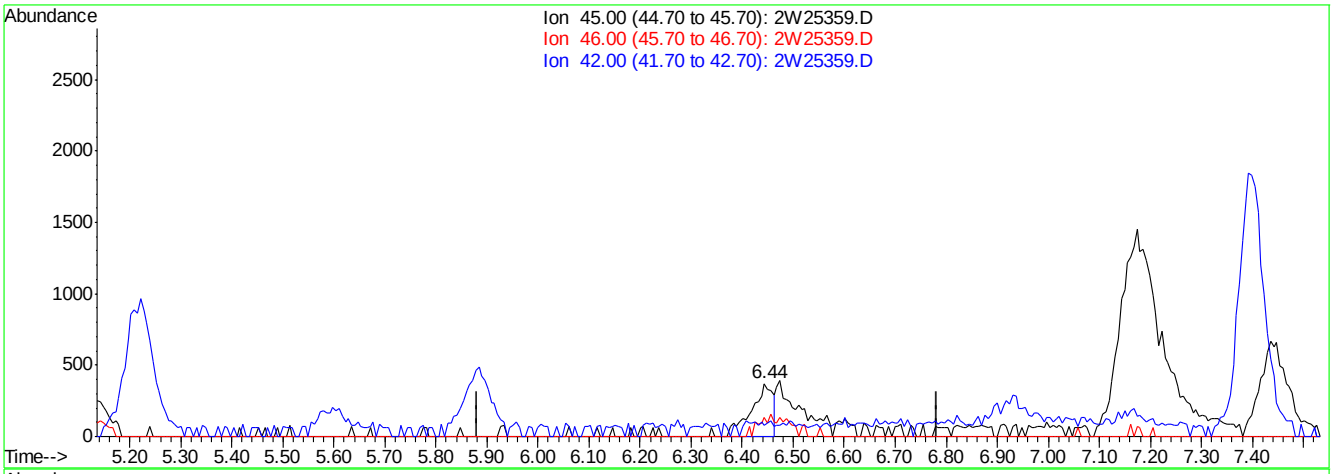


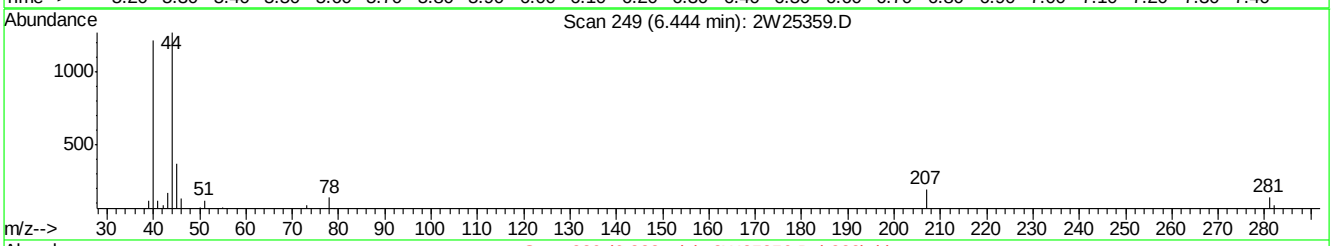
ACCUTEST Laboratories JA28237

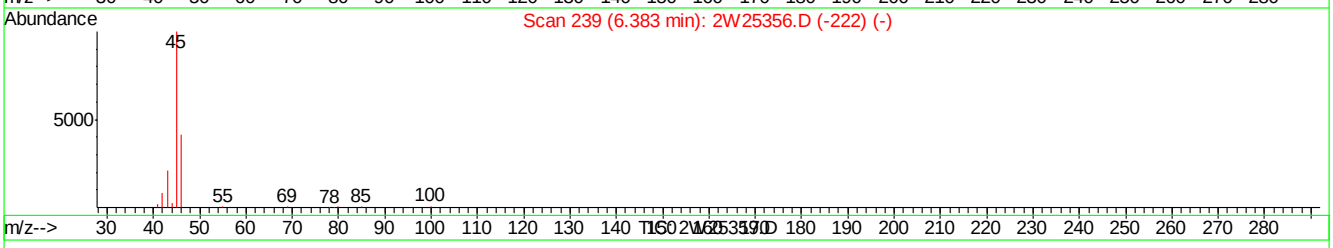
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(26) ETHANOL

6.44min 0.13PPBV

response 1088

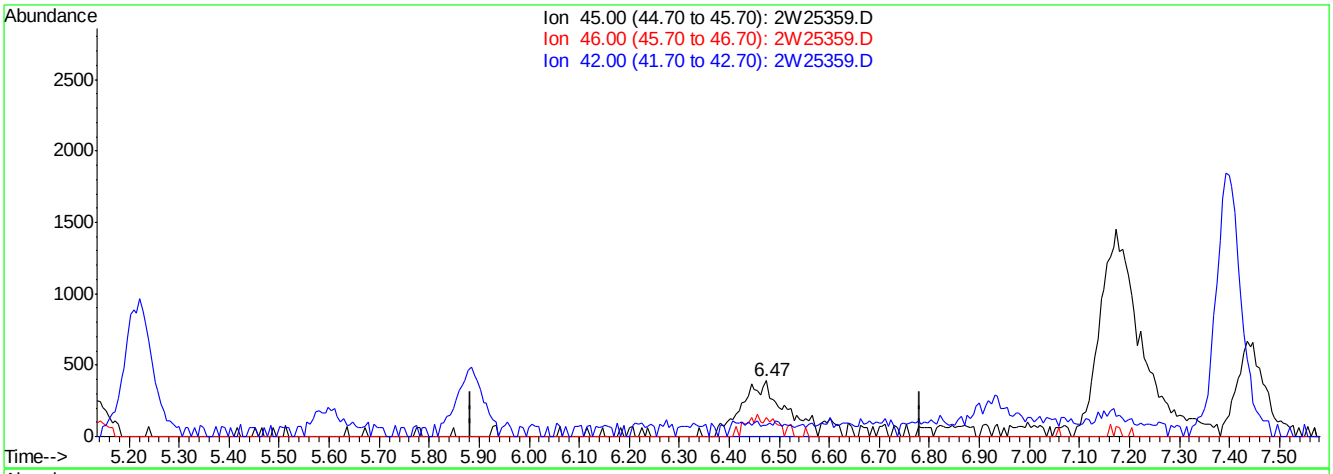
Ion	Exp%	Act%
45.00	100	100
46.00	39.10	0.00#
42.00	7.30	0.00
0.00	0.00	0.00

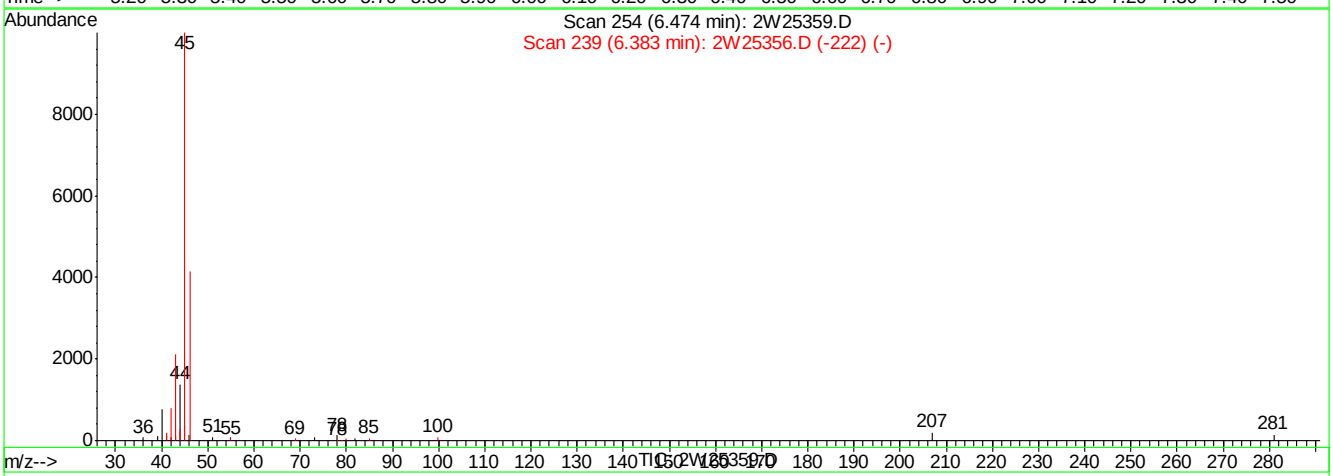
2W25359.D M2W1070.M Sun Sep 06 14:51:09 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(26) ETHANOL

6.47min 0.29PPBV m

response 2351

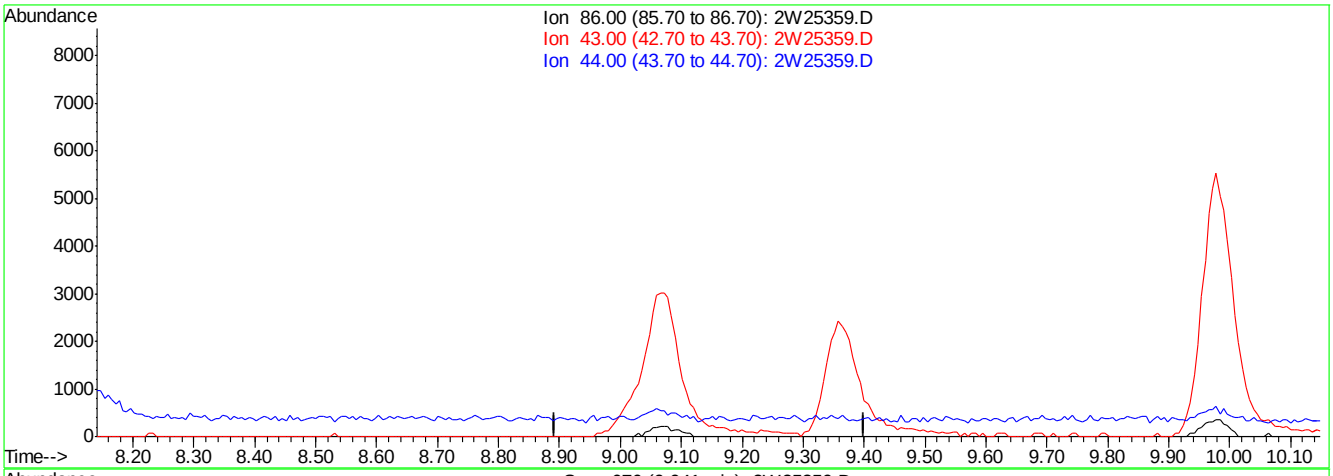
Ion	Exp%	Act%
45.00	100	100
46.00	39.10	0.00#
42.00	7.30	0.00
0.00	0.00	0.00

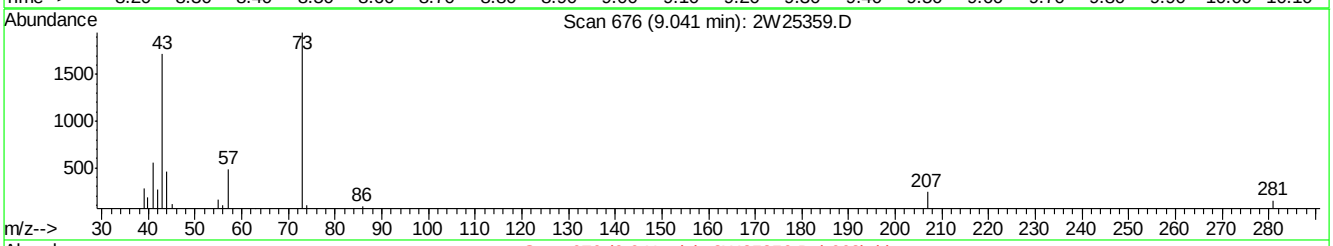
2W25359.D M2W1070.M Sun Sep 06 14:51:17 2009 MS2W

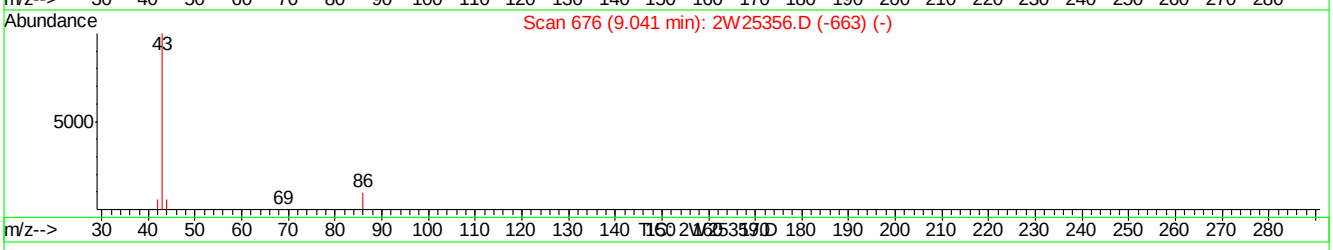
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(36) VINYL ACETATE

9.04min 0.00PPBV

response 0

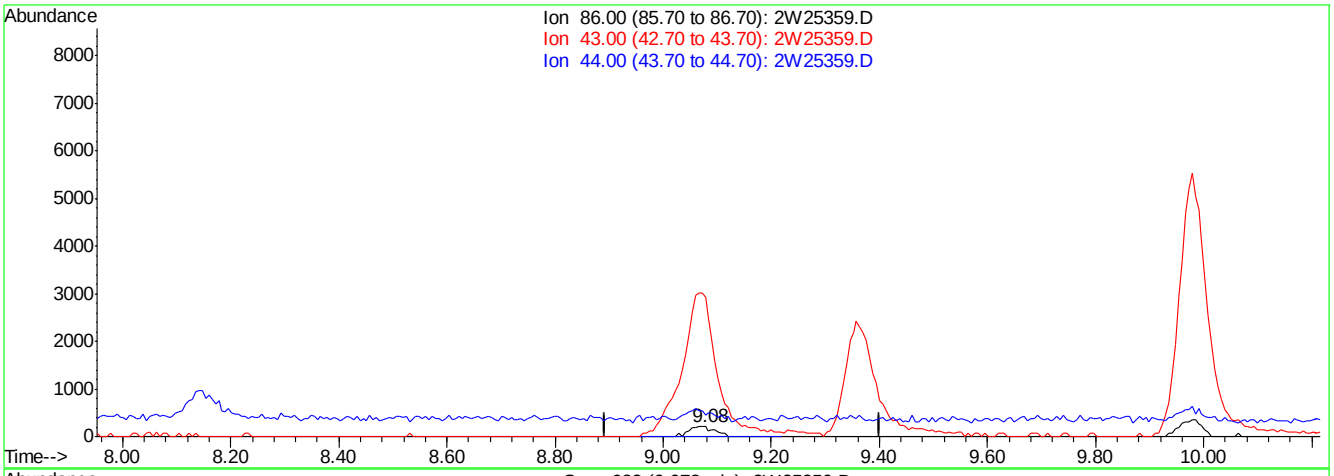
Ion	Exp%	Act%
86.00	100	0.00
43.00	1284.50	0.00#
44.00	61.90	0.00#
0.00	0.00	0.00

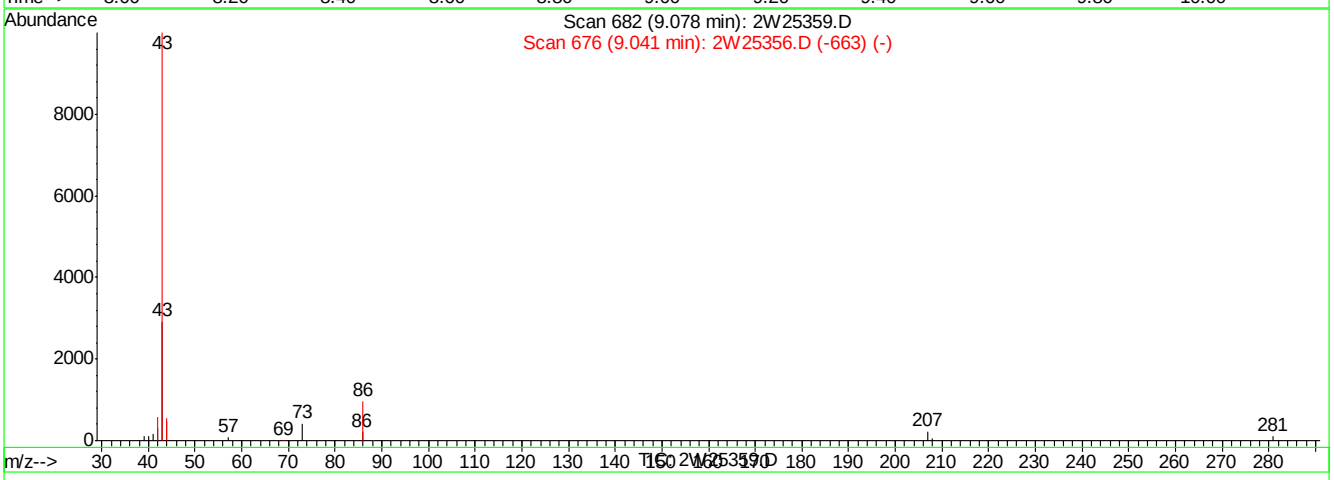
2W25359.D M2W1070.M Sun Sep 06 14:51:25 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(36) VINYL ACETATE

9.08min 0.16PPBV m

response 698

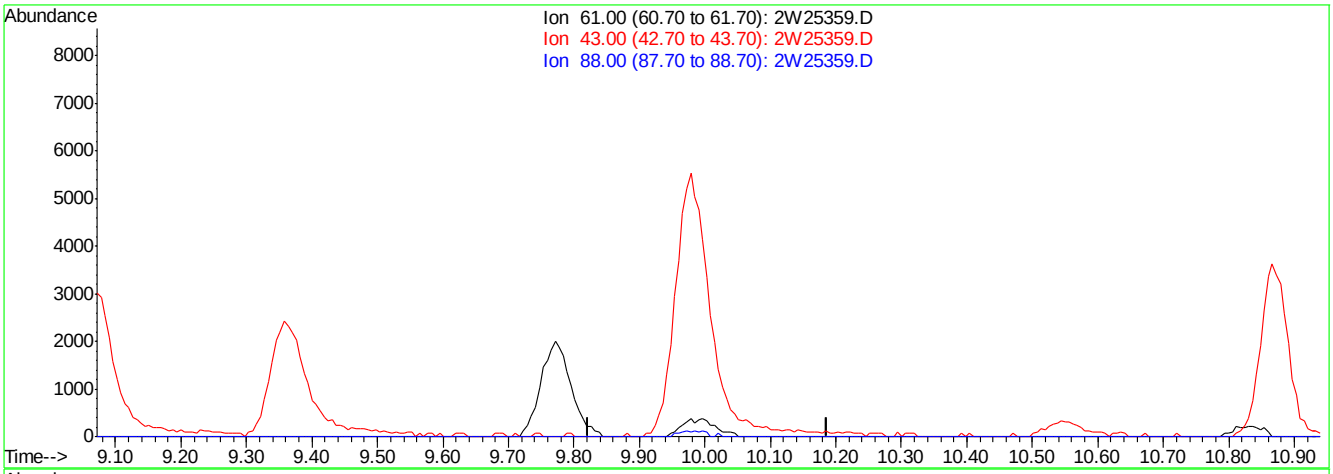
Ion	Exp%	Act%
86.00	100	100
43.00	1284.50	0.00#
44.00	61.90	0.00#
0.00	0.00	0.00

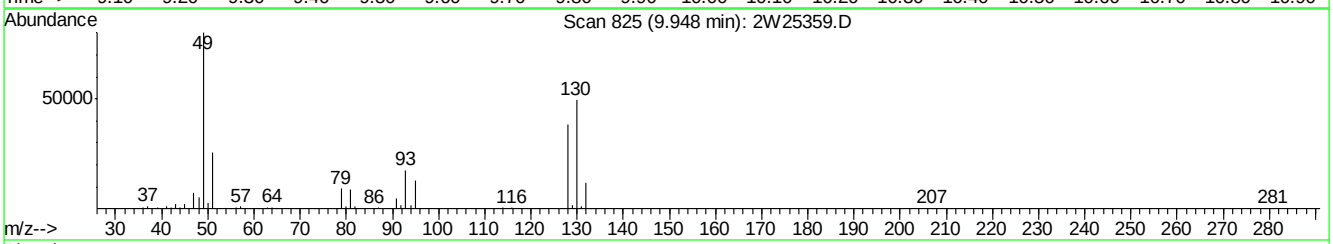
2W25359.D M2W1070.M Sun Sep 06 14:51:30 2009 MS2W

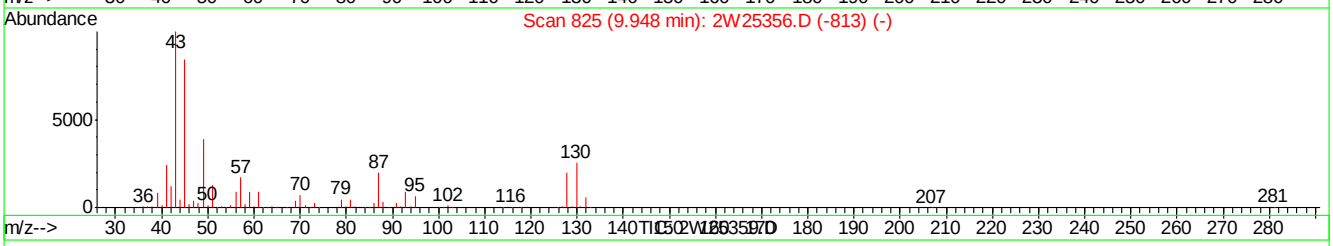
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(40) ETHYL ACETATE

9.95min 0.00PPBV

response 0

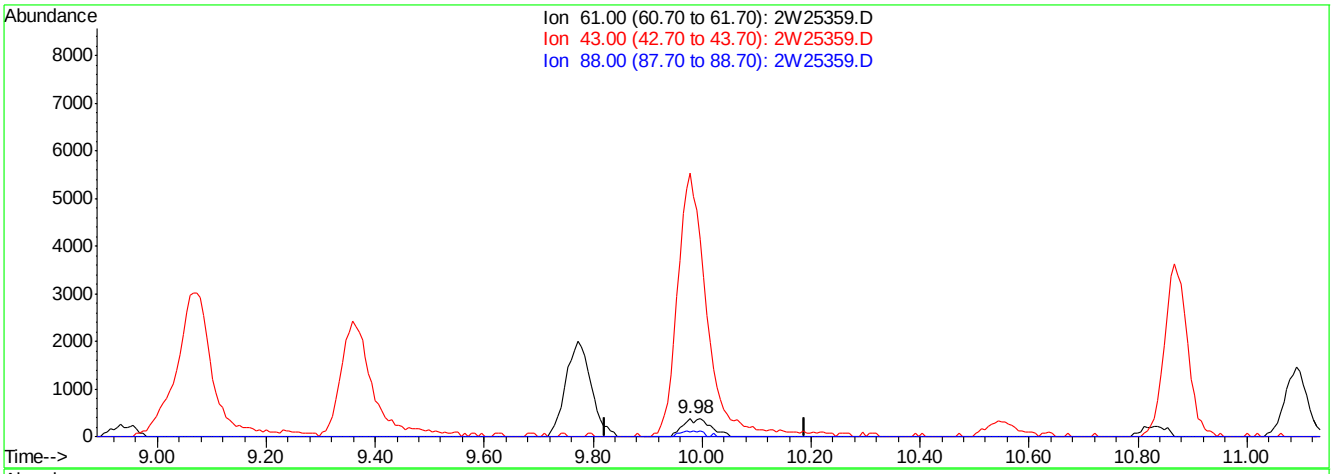
Ion	Exp%	Act%
61.00	100	0.00
43.00	1419.30	0.00#
88.00	39.00	0.00#
0.00	0.00	0.00

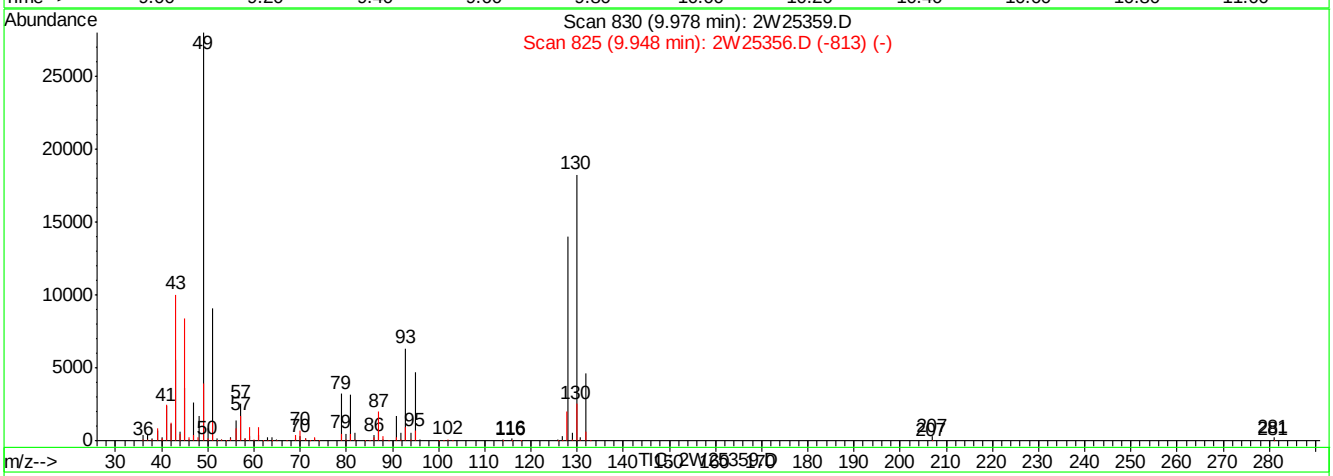
2W25359.D M2W1070.M Sun Sep 06 14:51:35 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(40) ETHYL ACETATE

9.98min 0.21PPBV m

response 1296

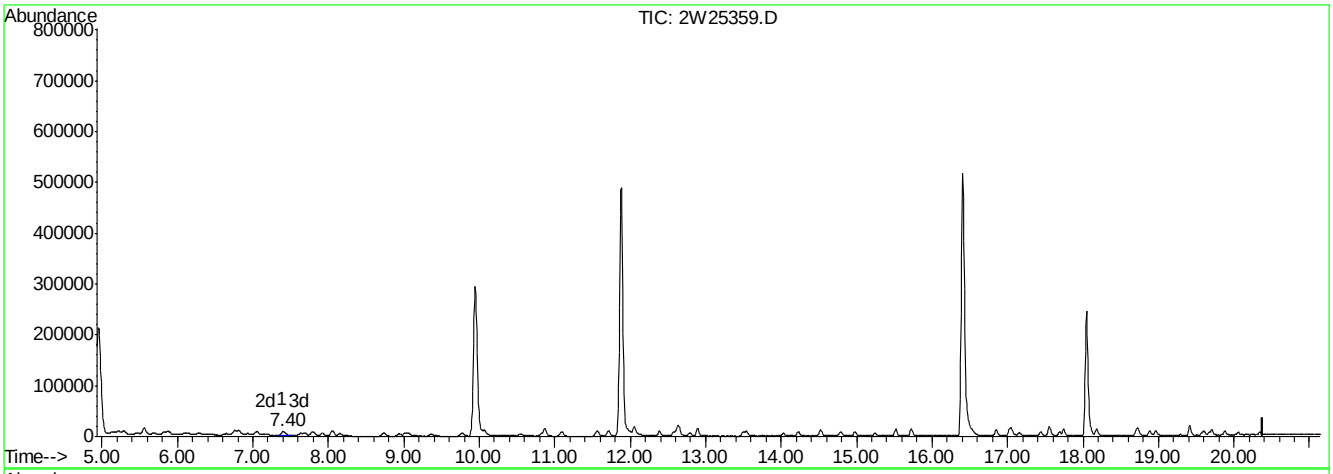
Ion	Exp%	Act%
61.00	100	100
43.00	1419.30	0.00#
88.00	39.00	0.00#
0.00	0.00	0.00

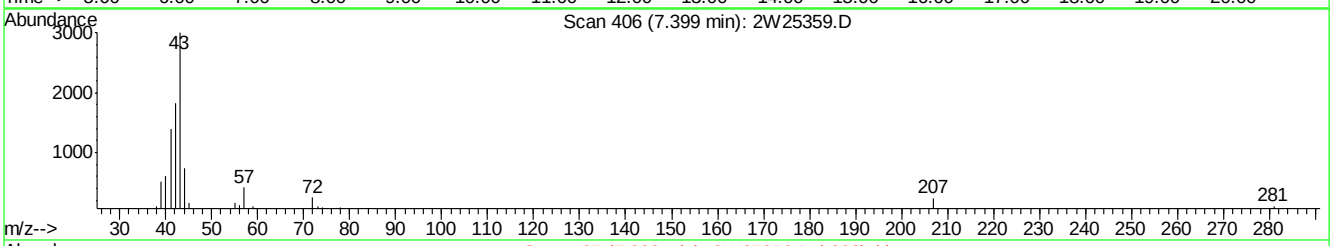
2W25359.D M2W1070.M Sun Sep 06 14:51:41 2009 MS2W

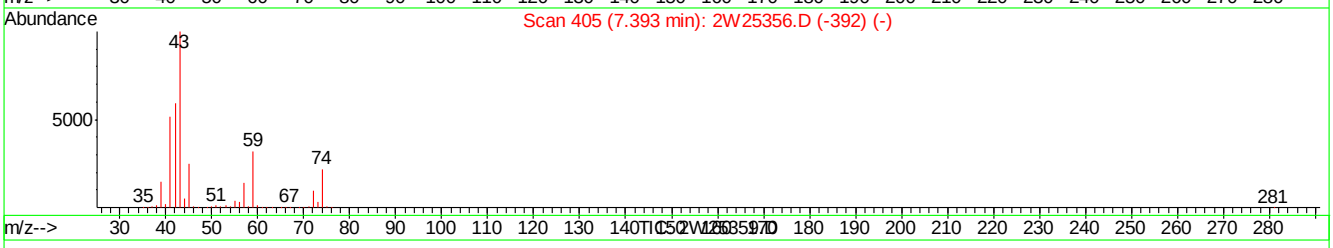
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 0.21PPBV m

response 33717

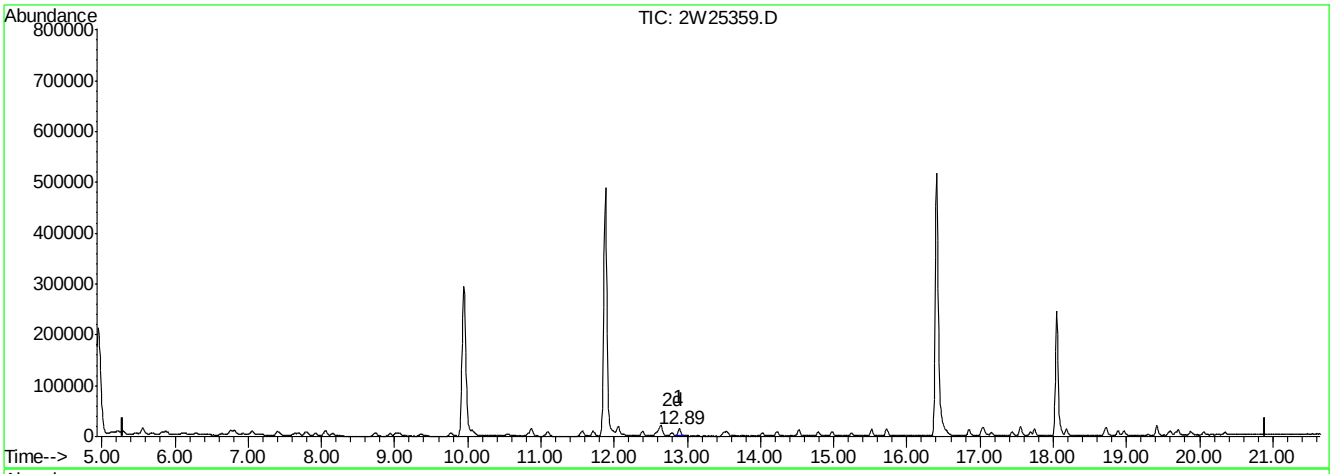
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

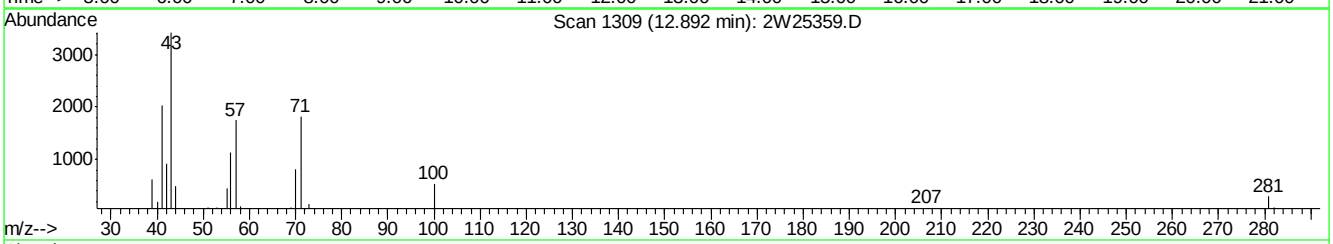
2W25359.D M2W1070.M Sun Sep 06 15:07:17 2009 MS2W

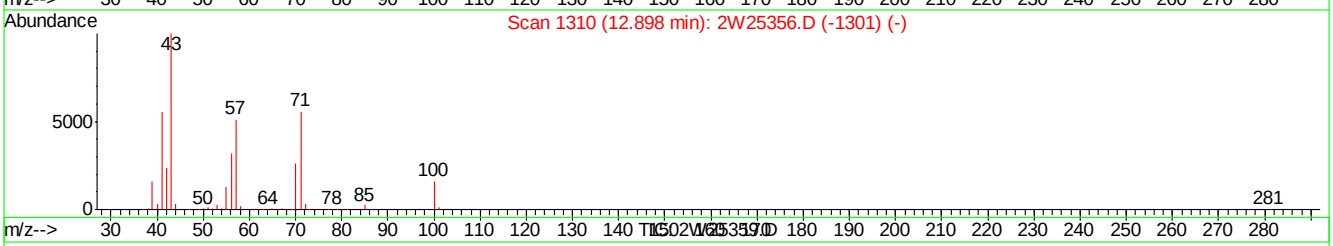
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25359.D Vial: 1
Acq On : 5 Sep 2009 2:41 pm Operator: YOUMINH
Sample : IC1070-0.2 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:51 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 0.22PPBV m

response 35008

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25359.D M2W1070.M Sun Sep 06 15:07:22 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:47 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	113592	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	570376	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	312683	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	312683	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.06	95	178268	5.59	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 111.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	241547	20.66	PPBV	98
3) DICHLORODIFLUOROMETHANE	5.01	85	368055	20.85	PPBV	100
4) FREON 152A	5.12	65	236062	19.49	PPBV	99
5) CHLORODIFLUOROMETHANE	5.17	67	89132	18.84	PPBV	99
6) PROPYLENE	5.21	41	368454	18.55	PPBV	98
7) PROPANE	5.24	43	132523	17.11	PPBV #	100
8) FREON 114	5.56	85	859158	18.13	PPBV	98
9) CHLOROMETHANE	5.46	52	126850	19.10	PPBV #	84
10) VINYL CHLORIDE	5.69	62	406762	19.54	PPBV	100
11) 1,3-BUTADIENE	5.82	54	310328	19.46	PPBV	97
12) n-BUTANE	5.88	43	633488	18.47	PPBV	99
13) BROMOMETHANE	6.11	94	318581	19.10	PPBV	100
14) CHLOROETHANE	6.28	64	223402	20.29	PPBV	100
15) FREON 123	6.75	83	685713	19.06	PPBV #	99
16) FREON 123A	6.81	117	371270	18.96	PPBV	96
17) TRICHLOROFLUOROMETHANE	7.05	101	727990	18.45	PPBV	99
18) ISOPROPYL ALCOHOL	7.09	45	543227	18.70	PPBV	99
19) ACETONE	6.85	58	154887	18.84	PPBV	95
20) PENTANE	7.40	42	422113	17.47	PPBV	99
21) TVHC as EQUIV PENTANE	7.39	TIC	2571881m	19.41	PPBV	
22) ETHYL ETHER	7.39	74	159934	20.21	PPBV	98
23) IODOMETHANE	7.63	142	768020	19.78	PPBV	100
24) 1,1-DICHLOROETHYLENE	7.68	96	290954	18.66	PPBV	96
25) CARBON DISULFIDE	8.15	76	985754	18.53	PPBV	100
26) ETHANOL	6.38	45	123080	18.13	PPBV	100
27) BROMOETHENE	6.64	106	302577	19.74	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	279083	17.83	PPBV	99
29) 3-CHLOROPROPENE	7.92	76	158866	20.15	PPBV	95
30) FREON 113	8.05	151	463630	18.86	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.73	96	354131	19.20	PPBV	97
32) TERTIARY BUTYL ALCOHOL	7.69	59	586374	17.82	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	836219	19.23	PPBV	100
34) TETRAHYDROFURAN	10.48	42	453844	20.33	PPBV	98
35) HEXANE	9.98	57	536789	19.43	PPBV	98
36) VINYL ACETATE	9.04	86	75546	20.80	PPBV #	92
37) 1,1-DICHLOROETHANE	8.94	63	656351	18.94	PPBV	99
38) METHYL ETHYL KETONE	9.30	72	169727	20.35	PPBV	94
39) cis-1,2-DICHLOROETHYLENE	9.77	96	352574	19.53	PPBV	98
40) ETHYL ACETATE	9.95	61	101240	19.26	PPBV #	87
41) CHLOROFORM	10.07	83	640690	19.43	PPBV	99

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:47 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	637812	19.68 PPBV	99
43) 1,1,1-TRICHLOROETHANE	11.09	97	653352	19.35 PPBV	99
44) CARBON TETRACHLORIDE	11.72	117	674877	19.25 PPBV	99
45) 1,2-DICHLOROETHANE	10.83	62	467156	19.73 PPBV	99
47) BENZENE	11.57	78	1063268	18.06 PPBV	100
48) CYCLOHEXANE	11.85	84	472590	17.90 PPBV	95
49) 2,3-DIMETHYLPENTANE	12.06	71	244060	19.91 PPBV	96
50) TRICHLOROETHYLENE	12.62	95	386657	18.04 PPBV	97
51) 1,2-DICHLOROPROPANE	12.39	63	425253	19.40 PPBV	100
52) BROMODICHLOROMETHANE	12.58	83	668186	19.10 PPBV	99
53) 2,2,4-TRIMETHYLPENTANE	12.66	57	1389789	17.18 PPBV	98
54) 1,4-DIOXANE	12.62	88	196639	18.33 PPBV #	73
55) METHYL METHACRYLATE	12.78	69	343481	20.11 PPBV	97
56) HEPTANE	12.90	43	647784	18.18 PPBV	97
57) TVHC as EQUIV HEPTANE	12.90	TIC	2724248m	18.85 PPBV	
58) METHYL ISOBUTYL KETONE	13.52	43	736219	17.90 PPBV	97
59) cis-1,3-DICHLOROPROPENE	13.49	75	569692	19.97 PPBV	98
60) TOLUENE	14.53	92	698847	19.55 PPBV	97
61) trans-1,3-DICHLOROPROPENE	14.04	75	550284	20.44 PPBV	99
62) 1,1,2-TRICHLOROETHANE	14.23	83	334392	19.20 PPBV	98
64) 2-HEXANONE	14.77	58	379531	17.13 PPBV	97
65) TETRACHLOROETHYLENE	15.73	164	428248	17.48 PPBV	100
66) DIBROMOCHLOROMETHANE	14.99	129	651336	19.00 PPBV	99
67) 1,2-DIBROMOETHANE	15.25	107	548886	18.31 PPBV	99
68) OCTANE	15.52	43	784404	17.82 PPBV	95
69) 1,1,1,2-TETRACHLOROETHANE	16.44	131	434479	18.89 PPBV #	99
70) CHLOROBENZENE	16.46	112	732306	17.15 PPBV	98
71) ETHYLBENZENE	16.85	91	1271249	17.72 PPBV	97
72) m,p-XYLENE	17.05	106	942270	36.34 PPBV	92
73) o-XYLENE	17.56	106	449814	18.46 PPBV	95
74) STYRENE	17.45	104	714429	20.64 PPBV	99
75) NONANE	17.75	43	690565	19.18 PPBV	96
76) BROMOFORM	17.18	173	537808	20.20 PPBV	99
78) 1,1,2,2-TETRACHLOROETHANE	17.56	83	529134	18.13 PPBV	99
79) ISOPROPYLBENZENE	18.19	105	1186967	18.71 PPBV	97
80) 2-CHLOROTOLUENE	18.71	126	285812	19.90 PPBV #	81
81) n-PROPYLBENZENE	18.74	120	313037	20.56 PPBV	80
82) 4-ETHYLTOLUENE	18.89	105	983156	19.94 PPBV	96
83) 1,3,5-TRIMETHYLBENZENE	18.97	105	818650	19.85 PPBV	98
84) TERT-BUTYLBENZENE	19.42	134	213059	20.62 PPBV	90
85) 1,2,4-TRIMETHYLBENZENE	19.43	105	693868	20.07 PPBV	99
86) m-DICHLOROBENZENE	19.61	146	418605	20.38 PPBV	99
87) BENZYL CHLORIDE	19.58	91	448360	20.76 PPBV	98
88) p-DICHLOROBENZENE	19.68	146	381212	20.06 PPBV	99
89) SEC-BUTYLBENZENE	19.72	134	230062	21.05 PPBV	88
90) p-ISOPROPYLTOLUENE	19.88	134	224453	22.09 PPBV	94
91) o-DICHLOROBENZENE	20.06	146	348754	20.53 PPBV	100
92) n-BUTYLBENZENE	20.35	134	152988	22.45 PPBV	92
93) HEXACHLOROBUTADIENE	22.43	225	85158	14.23 PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:47 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

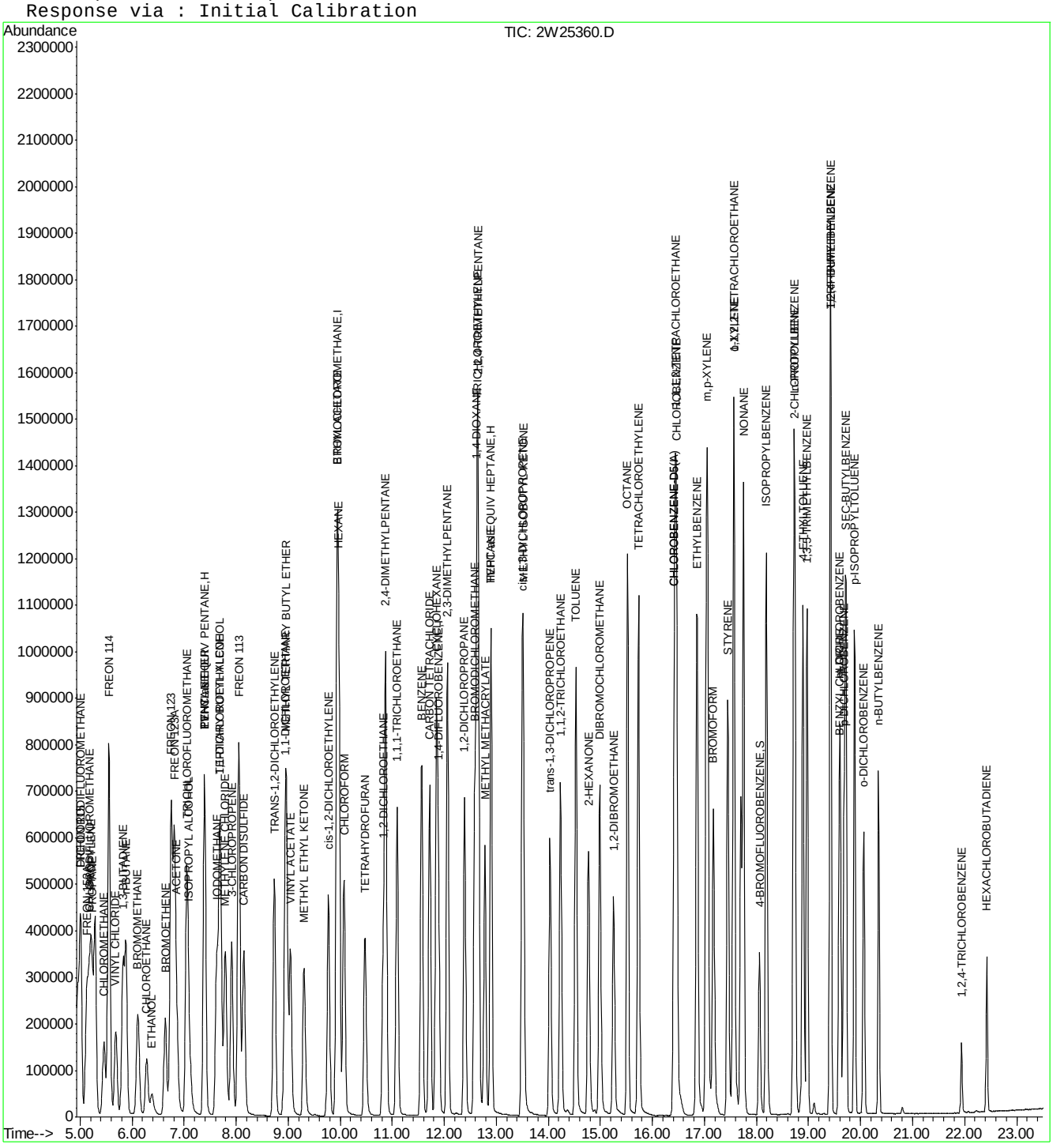
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	63328	16.44	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:52 2009 Quant Results File: M2W1070.RES

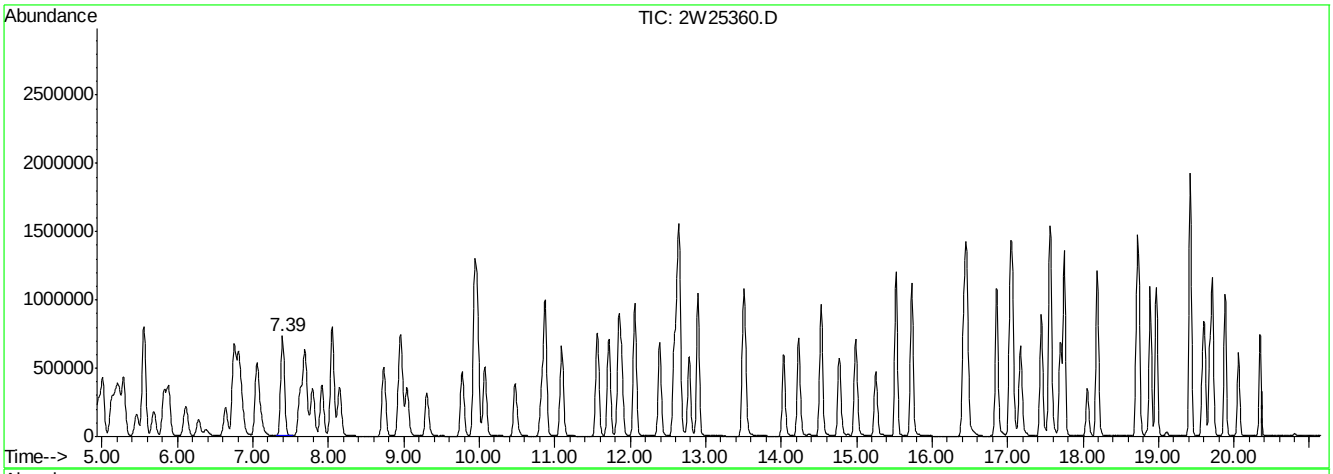
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

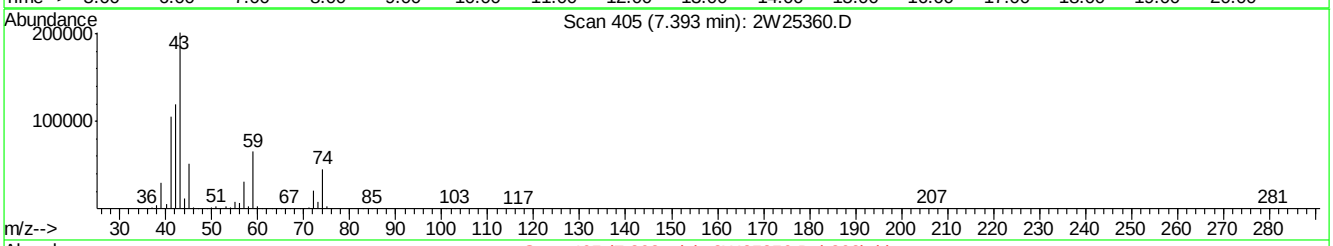


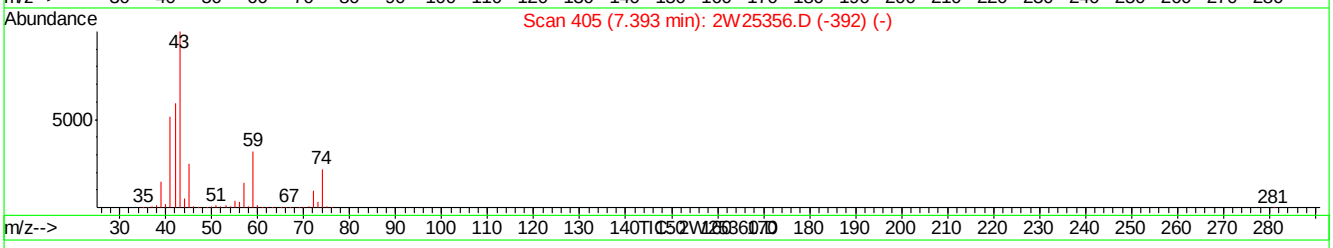
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:52 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 19.41PPBV m

response 2571881

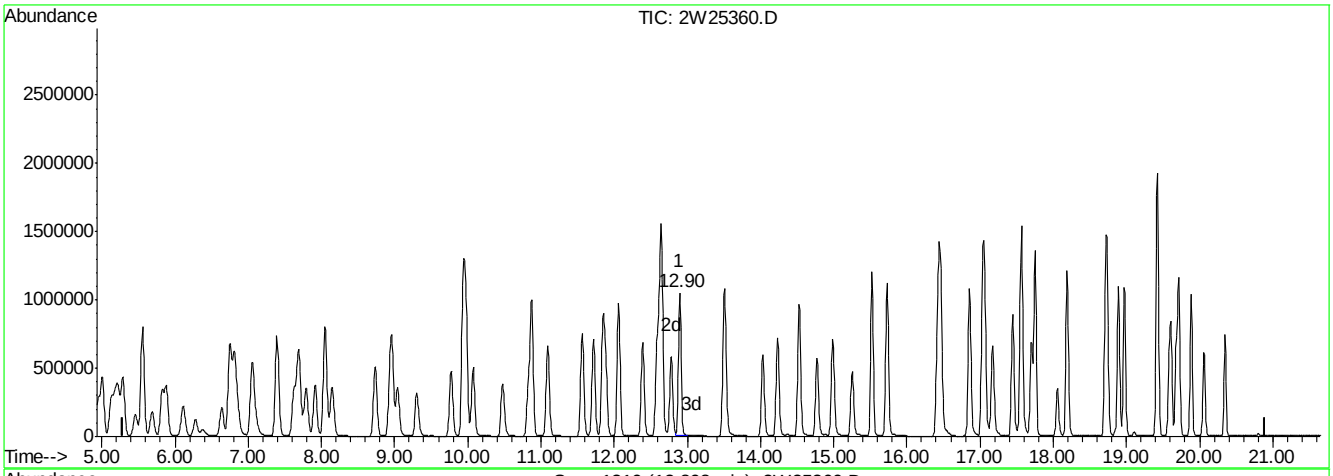
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

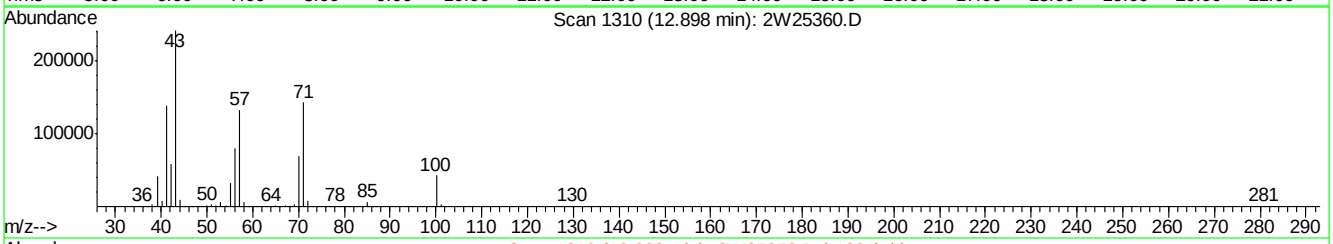
2W25360.D M2W1070.M Sun Sep 06 15:07:32 2009 MS2W

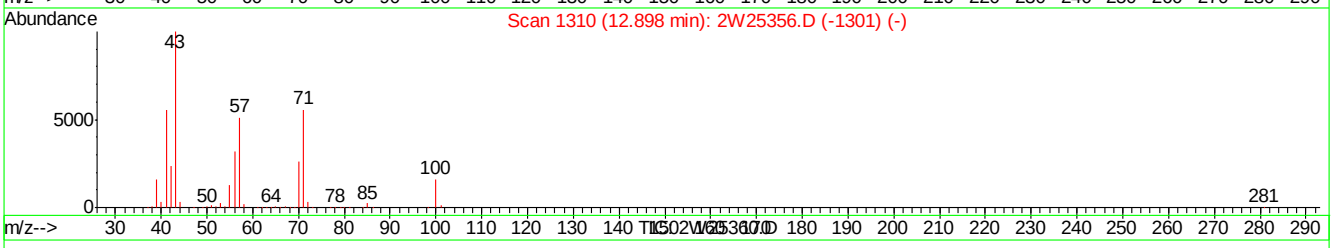
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25360.D Vial: 2
Acq On : 5 Sep 2009 3:24 pm Operator: YOUMINH
Sample : IC1070-20 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:52 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 18.85PPBV m

response 2724248

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25360.D M2W1070.M Sun Sep 06 15:07:35 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:50 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.94	128	129325	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	611123	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	309325	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	309325	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	167076	5.29	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 105.80%

Target Compounds						Qvalue
2) FREON 115	5.01	119	72967	5.48	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	109791	5.46	PPBV	99
4) FREON 152A	5.13	65	76098	5.52	PPBV	97
5) CHLORODIFLUOROMETHANE	5.17	67	28508	5.29	PPBV	97
6) PROPYLENE	5.21	41	118838	5.25	PPBV	99
7) PROPANE	5.24	43	42372	4.81	PPBV #	100
8) FREON 114	5.56	85	299838	5.56	PPBV	97
9) CHLOROMETHANE	5.46	52	38513	5.09	PPBV #	86
10) VINYL CHLORIDE	5.68	62	129210	5.45	PPBV	100
11) 1,3-BUTADIENE	5.82	54	99720	5.49	PPBV	94
12) n-BUTANE	5.88	43	196857	5.04	PPBV	99
13) BROMOMETHANE	6.11	94	110011	5.79	PPBV	100
14) CHLOROETHANE	6.28	64	70213	5.60	PPBV	98
15) FREON 123	6.75	83	235109	5.74	PPBV #	99
16) FREON 123A	6.81	117	125376	5.62	PPBV	94
17) TRICHLOROFLUOROMETHANE	7.05	101	249454	5.55	PPBV	99
18) ISOPROPYL ALCOHOL	7.09	45	164241	4.97	PPBV	99
19) ACETONE	6.86	58	46093	4.92	PPBV	93
20) PENTANE	7.39	42	138006	5.02	PPBV	99
21) TVHC as EQUIV PENTANE	7.39	TIC	823743m	5.46	PPBV	
22) ETHYL ETHER	7.39	74	48418	5.37	PPBV	97
23) IODOMETHANE	7.63	142	266213	6.02	PPBV	97
24) 1,1-DICHLOROETHYLENE	7.68	96	99606	5.61	PPBV	94
25) CARBON DISULFIDE	8.15	76	334558	5.52	PPBV	98
26) ETHANOL	6.39	45	34745	4.50	PPBV	96
27) BROMOETHENE	6.64	106	104909	6.01	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	90256	5.07	PPBV	96
29) 3-CHLOROPROPENE	7.92	76	49515	5.52	PPBV #	91
30) FREON 113	8.06	151	158089	5.65	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	116952	5.57	PPBV	96
32) TERTIARY BUTYL ALCOHOL	7.70	59	200919	5.36	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	259164	5.24	PPBV	98
34) TETRAHYDROFURAN	10.49	42	128563	5.06	PPBV	97
35) HEXANE	9.98	57	174660	5.55	PPBV	98
36) VINYL ACETATE	9.04	86	21837	5.28	PPBV	97
37) 1,1-DICHLOROETHANE	8.94	63	217697	5.52	PPBV	100
38) METHYL ETHYL KETONE	9.31	72	49119	5.17	PPBV #	92
39) cis-1,2-DICHLOROETHYLENE	9.77	96	113158	5.51	PPBV	96
40) ETHYL ACETATE	9.95	61	30393	5.08	PPBV #	94
41) CHLOROFORM	10.07	83	208335	5.55	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:50 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	207160	5.61	PPBV		100
43)	1,1,1-TRICHLOROETHANE	11.09	97	214262	5.58	PPBV		99
44)	CARBON TETRACHLORIDE	11.71	117	225558	5.65	PPBV		99
45)	1,2-DICHLOROETHANE	10.82	62	146083	5.42	PPBV		99
47)	BENZENE	11.56	78	345957	5.48	PPBV		99
48)	CYCLOHEXANE	11.85	84	154011	5.44	PPBV		98
49)	2,3-DIMETHYLPENTANE	12.06	71	74971	5.71	PPBV		100
50)	TRICHLOROETHYLENE	12.62	95	131487	5.73	PPBV		99
51)	1,2-DICHLOROPROPANE	12.39	63	133232	5.67	PPBV		98
52)	BROMODICHLOROMETHANE	12.58	83	220010	5.87	PPBV		99
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	489973	5.65	PPBV		100
54)	1,4-DIOXANE	12.62	88	61899	5.39	PPBV	#	1
55)	METHYL METHACRYLATE	12.78	69	97052	5.30	PPBV		96
56)	HEPTANE	12.89	43	211175	5.53	PPBV		99
57)	TVHC as EQUIV HEPTANE	12.89	TIC	875058m	5.65	PPBV		
58)	METHYL ISOBUTYL KETONE	13.51	43	232594	5.28	PPBV		100
59)	cis-1,3-DICHLOROPROPENE	13.49	75	174818	5.72	PPBV		100
60)	TOLUENE	14.52	92	220688	5.76	PPBV		98
61)	trans-1,3-DICHLOROPROPENE	14.02	75	160109	5.55	PPBV		98
62)	1,1,2-TRICHLOROETHANE	14.22	83	104920	5.62	PPBV		99
64)	2-HEXANONE	14.77	58	106114	4.84	PPBV		99
65)	TETRACHLOROETHYLENE	15.73	164	138854	5.73	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.98	129	201883	5.95	PPBV		99
67)	1,2-DIBROMOETHANE	15.25	107	165077	5.57	PPBV		99
68)	OCTANE	15.52	43	255954	5.88	PPBV		98
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	133363	5.86	PPBV	#	100
70)	CHLOROBENZENE	16.46	112	231057	5.47	PPBV		99
71)	ETHYLBENZENE	16.85	91	409497	5.77	PPBV		100
72)	m,p-XYLENE	17.04	106	295999	11.54	PPBV		97
73)	o-XYLENE	17.56	106	139126	5.77	PPBV		99
74)	STYRENE	17.44	104	204875	5.98	PPBV		99
75)	NONANE	17.75	43	217199	6.10	PPBV		99
76)	BROMOFORM	17.16	173	155446	5.90	PPBV		100
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	163608	5.67	PPBV		100
79)	ISOPROPYLBENZENE	18.19	105	372910	5.94	PPBV		99
80)	2-CHLOROTOLUENE	18.71	126	82960	5.84	PPBV		96
81)	n-PROPYLBENZENE	18.73	120	88663	5.89	PPBV		92
82)	4-ETHYLTOLUENE	18.88	105	284832	5.84	PPBV		100
83)	1,3,5-TRIMETHYLBENZENE	18.96	105	244382	5.99	PPBV		98
84)	TERT-BUTYLBENZENE	19.41	134	59319	5.80	PPBV		96
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	205420	6.01	PPBV		98
86)	m-DICHLOROBENZENE	19.60	146	112849	5.55	PPBV		99
87)	BENZYL CHLORIDE	19.58	91	108525	5.08	PPBV		99
88)	p-DICHLOROBENZENE	19.68	146	97250	5.17	PPBV		99
89)	SEC-BUTYLBENZENE	19.71	134	62744	5.80	PPBV		95
90)	p-ISOPROPYLTOLUENE	19.88	134	58535	5.82	PPBV		98
91)	o-DICHLOROBENZENE	20.06	146	91069	5.42	PPBV		99
92)	n-BUTYLBENZENE	20.34	134	36572	5.43	PPBV		98
93)	HEXACHLOROBUTADIENE	22.43	225	27794	4.70	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:50 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

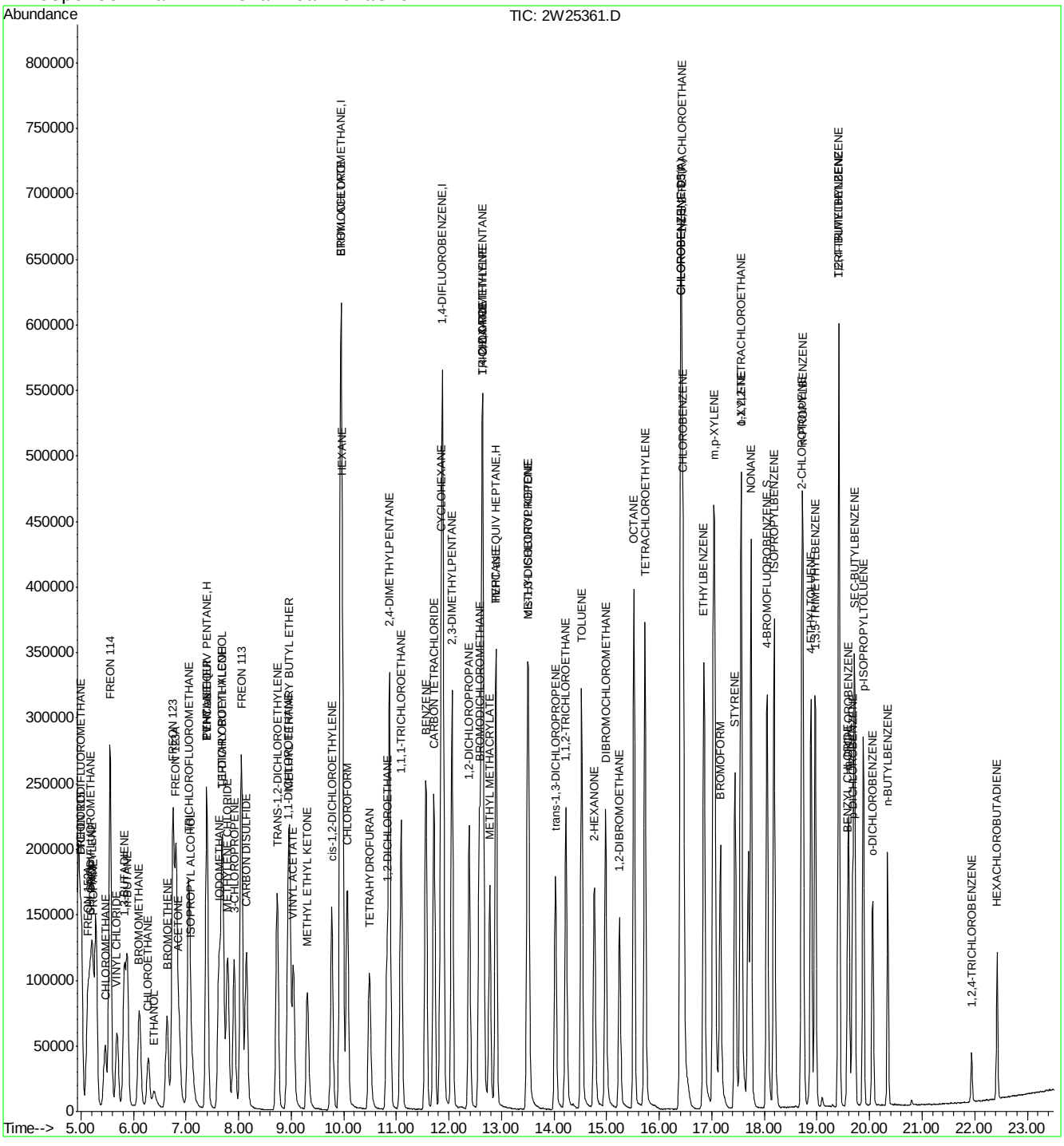
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	16055	4.21	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:53 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

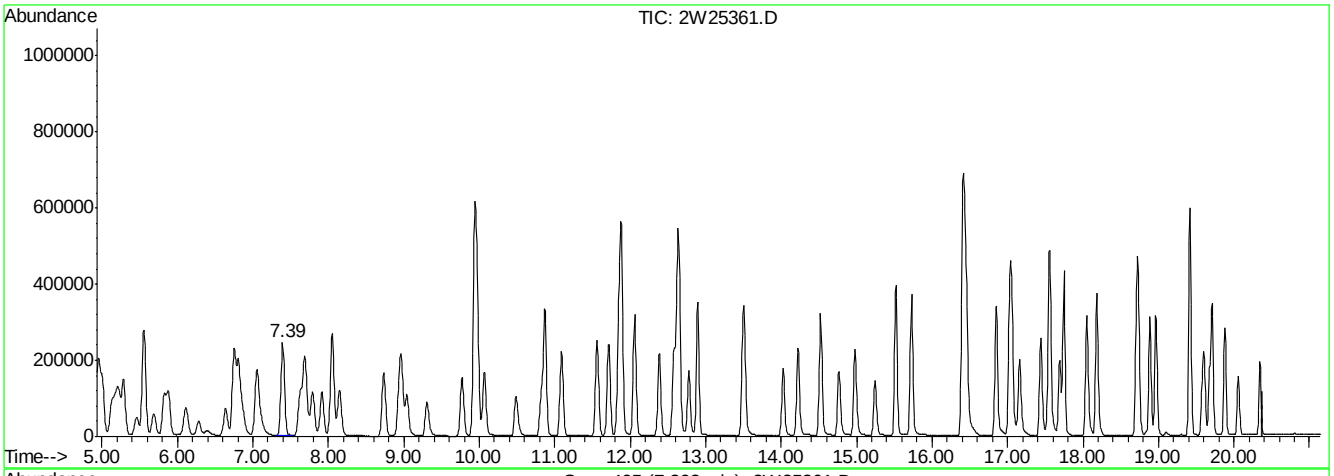


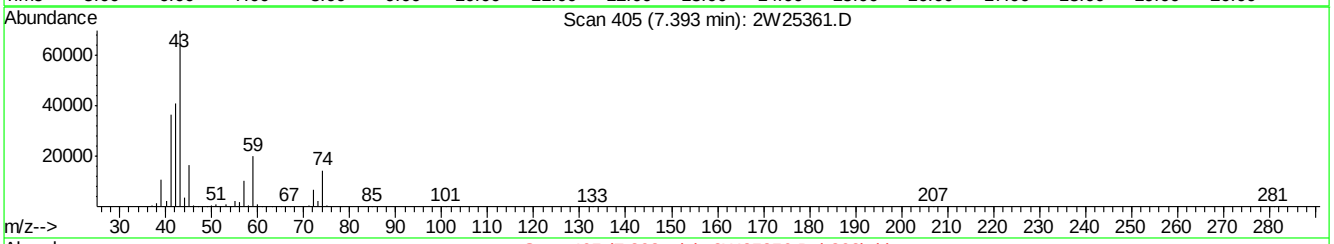
ACCUTEST Laboratories JA28237

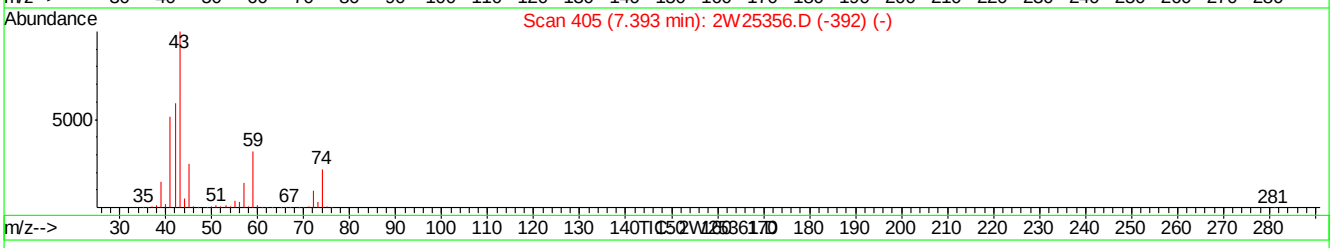
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:53 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 5.46PPBV m

response 823743

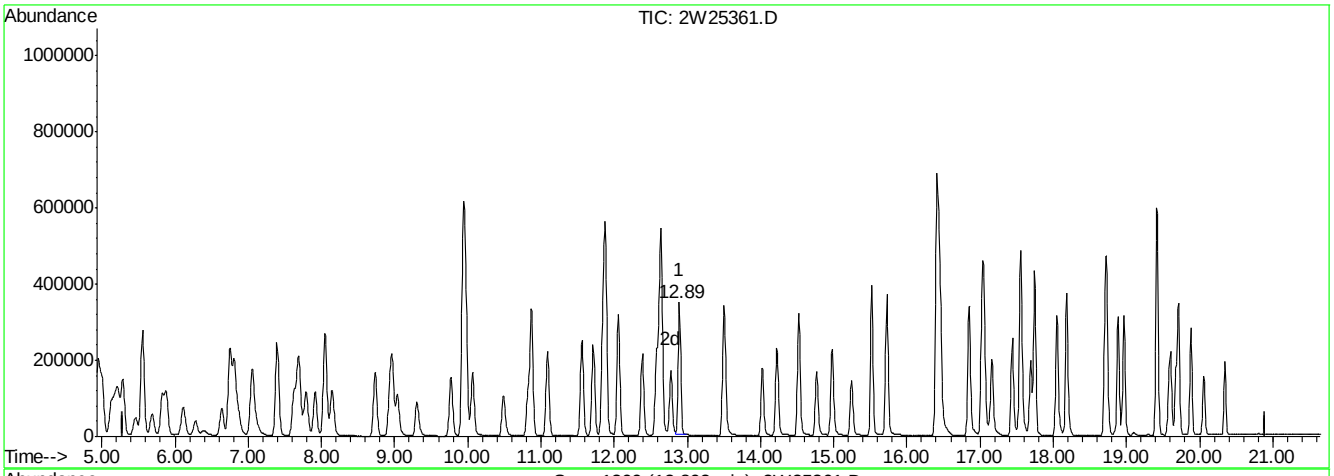
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

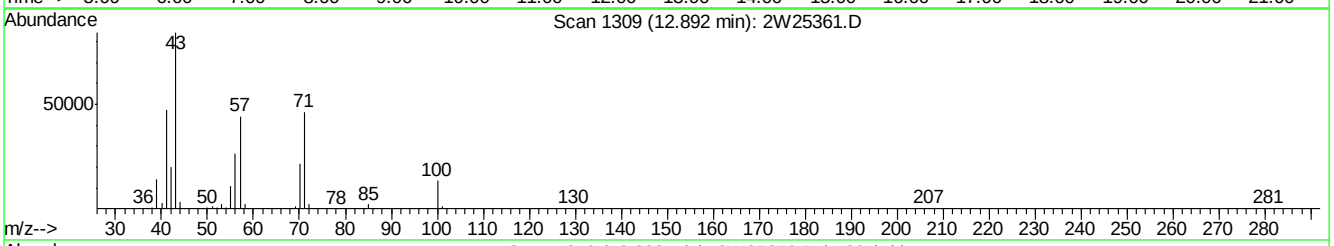
2W25361.D M2W1070.M Sun Sep 06 15:07:46 2009 MS2W

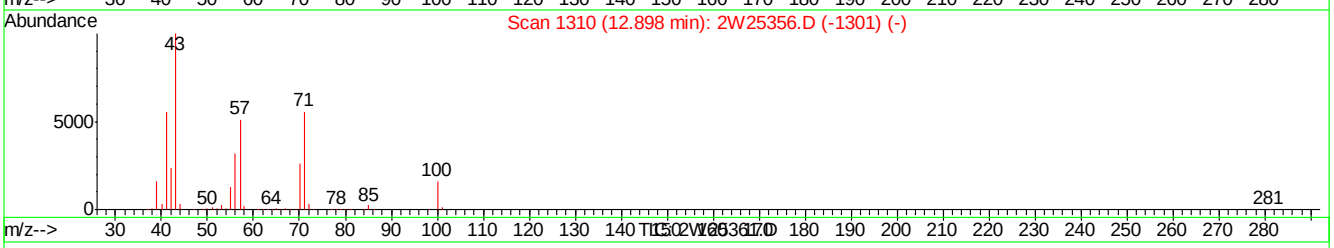
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25361.D Vial: 2
Acq On : 5 Sep 2009 4:08 pm Operator: YOUMINH
Sample : IC1070-5.0 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:53 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 5.65PPBV m

response 875058

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25361.D M2W1070.M Sun Sep 06 15:07:50 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:53 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	138219	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	647187	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	294519	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	294519	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	133812	4.45	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 89.00%

Target Compounds						Qvalue
2) FREON 115	5.01	119	1394	0.10	PPBV #	75
3) DICHLORODIFLUOROMETHANE	5.01	85	2044	0.10	PPBV #	49
4) FREON 152A	5.13	65	1387	0.09	PPBV #	46
8) FREON 114	5.56	85	5613	0.10	PPBV	98
10) VINYL CHLORIDE	5.68	62	2367	0.09	PPBV #	50
11) 1,3-BUTADIENE	5.84	54	1737	0.09	PPBV	90
12) n-BUTANE	5.89	43	4761	0.11	PPBV #	73
13) BROMOMETHANE	6.11	94	1943	0.10	PPBV #	87
14) CHLOROETHANE	6.30	64	1076	0.08	PPBV #	45
15) FREON 123	6.75	83	4133	0.09	PPBV #	91
16) FREON 123A	6.81	117	2281	0.10	PPBV #	90
17) TRICHLOROFLUOROMETHANE	7.06	101	4631	0.10	PPBV #	96
20) PENTANE	7.40	42	2892	0.10	PPBV #	80
23) IODOMETHANE	7.63	142	4342	0.09	PPBV	97
24) 1,1-DICHLOROETHYLENE	7.69	96	1938	0.10	PPBV #	86
25) CARBON DISULFIDE	8.15	76	6360	0.10	PPBV #	85
27) BROMOETHENE	6.63	106	1665	0.09	PPBV #	88
30) FREON 113	8.06	151	2894	0.10	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	2169	0.10	PPBV	89
32) TERTIARY BUTYL ALCOHOL	7.81	59	3970	0.10	PPBV #	78
33) METHYL TERTIARY BUTYL ETHE	9.04	73	5089	0.10	PPBV	91
34) TETRAHYDROFURAN	10.58	42	2486	0.09	PPBV #	39
35) HEXANE	9.98	57	3008	0.09	PPBV	87
37) 1,1-DICHLOROETHANE	8.95	63	3980	0.09	PPBV #	90
39) cis-1,2-DICHLOROETHYLENE	9.77	96	2117	0.10	PPBV	88
41) CHLOROFORM	10.07	83	3663	0.09	PPBV	95
42) 2,4-DIMETHYLPENTANE	10.87	57	3510	0.09	PPBV #	80
43) 1,1,1-TRICHLOROETHANE	11.09	97	3851	0.09	PPBV	95
44) CARBON TETRACHLORIDE	11.71	117	3906	0.09	PPBV	99
45) 1,2-DICHLOROETHANE	10.83	62	2589	0.09	PPBV #	49
47) BENZENE	11.57	78	6690	0.10	PPBV	97
48) CYCLOHEXANE	11.84	84	3283	0.11	PPBV #	1
49) 2,3-DIMETHYLPENTANE	12.06	71	1299	0.09	PPBV #	81
50) TRICHLOROETHYLENE	12.62	95	2382	0.10	PPBV	99
51) 1,2-DICHLOROPROPANE	12.39	63	2309	0.09	PPBV #	40
52) BROMODICHLOROMETHANE	12.58	83	3721	0.09	PPBV #	94
53) 2,2,4-TRIMETHYLPENTANE	12.65	57	8841	0.10	PPBV #	94
54) 1,4-DIOXANE	12.75	88	1356	0.11	PPBV #	8
55) METHYL METHACRYLATE	12.80	69	1891	0.10	PPBV #	86
56) HEPTANE	12.89	43	3919	0.10	PPBV	93

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:53 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

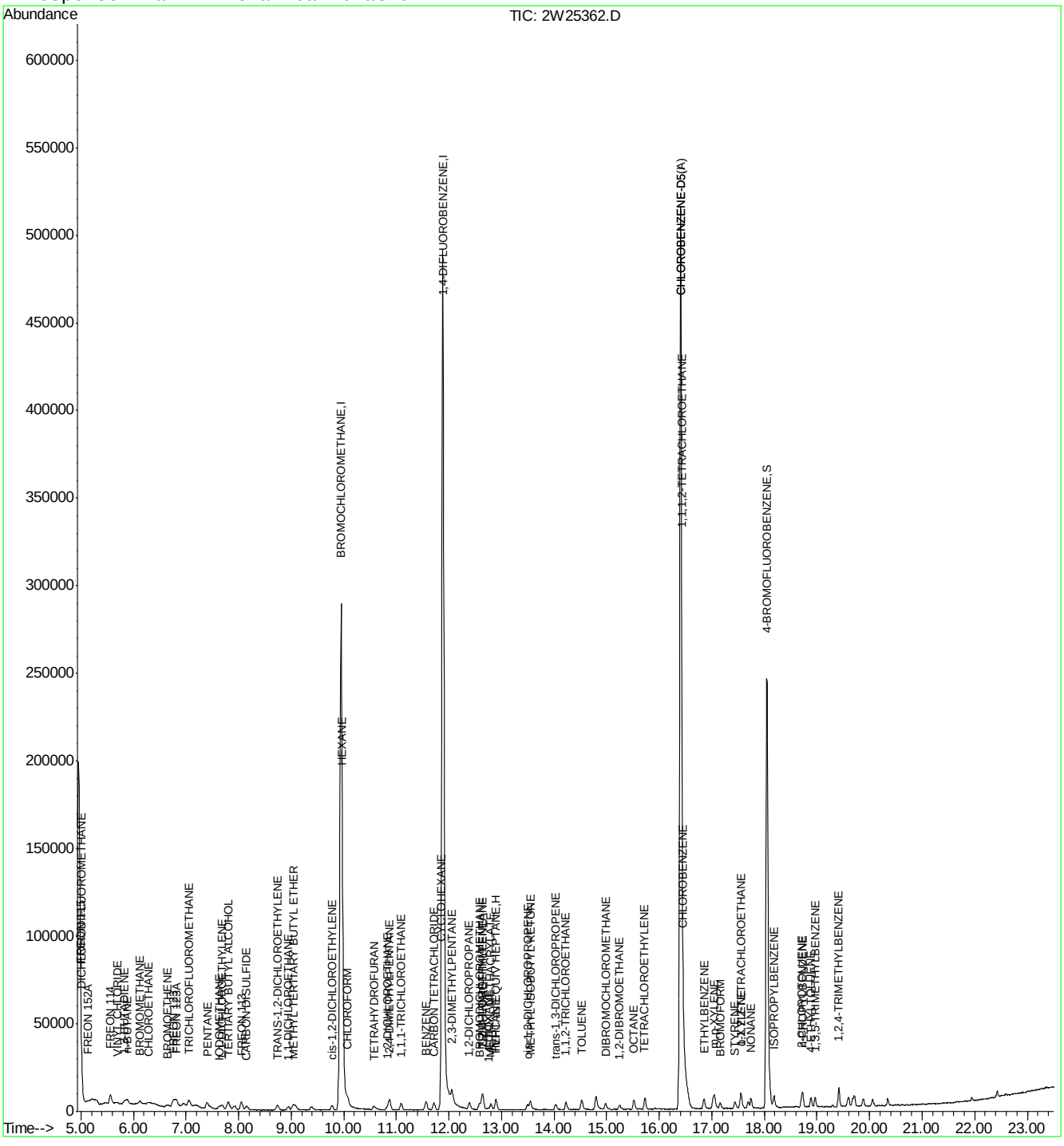
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
57)	TVHC as EQUIV HEPTANE	12.89	TIC	15316m	0.09	PPBV		
58)	METHYL ISOBUTYL KETONE	13.55	43	6095	0.13	PPBV	#	81
59)	cis-1,3-DICHLOROPROPENE	13.49	75	2961	0.09	PPBV	#	72
60)	TOLUENE	14.53	92	3950	0.10	PPBV	#	92
61)	trans-1,3-DICHLOROPROPENE	14.03	75	2833	0.09	PPBV	#	71
62)	1,1,2-TRICHLOROETHANE	14.22	83	1925	0.10	PPBV		98
65)	TETRACHLOROETHYLENE	15.73	164	2437	0.11	PPBV		99
66)	DIBROMOCHLOROMETHANE	14.99	129	3188	0.10	PPBV	#	83
67)	1,2-DIBROMOETHANE	15.24	107	3028	0.11	PPBV	#	94
68)	OCTANE	15.52	43	3811	0.09	PPBV		94
69)	1,1,1,2-TETRACHLOROETHANE	16.43	131	2059	0.10	PPBV	#	95
70)	CHLOROBENZENE	16.46	112	4446	0.11	PPBV		85
71)	ETHYLBENZENE	16.85	91	7173	0.11	PPBV	#	89
72)	m,p-XYLENE	17.05	106	5394	0.22	PPBV		97
73)	o-XYLENE	17.55	106	2312	0.10	PPBV	#	78
74)	STYRENE	17.44	104	2976	0.09	PPBV		93
75)	NONANE	17.74	43	3027	0.09	PPBV	#	58
76)	BROMOFORM	17.16	173	2418	0.10	PPBV	#	92
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	3166	0.12	PPBV	#	94
79)	ISOPROPYLBENZENE	18.18	105	6310	0.11	PPBV		98
80)	2-CHLOROTOLUENE	18.71	126	1382	0.10	PPBV	#	80
81)	n-PROPYLBENZENE	18.73	120	1399	0.10	PPBV		68
82)	4-ETHYLTOLUENE	18.89	105	4871	0.10	PPBV	#	96
83)	1,3,5-TRIMETHYLBENZENE	18.97	105	4109	0.11	PPBV	#	91
85)	1,2,4-TRIMETHYLBENZENE	19.41	105	3524	0.11	PPBV		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:55 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

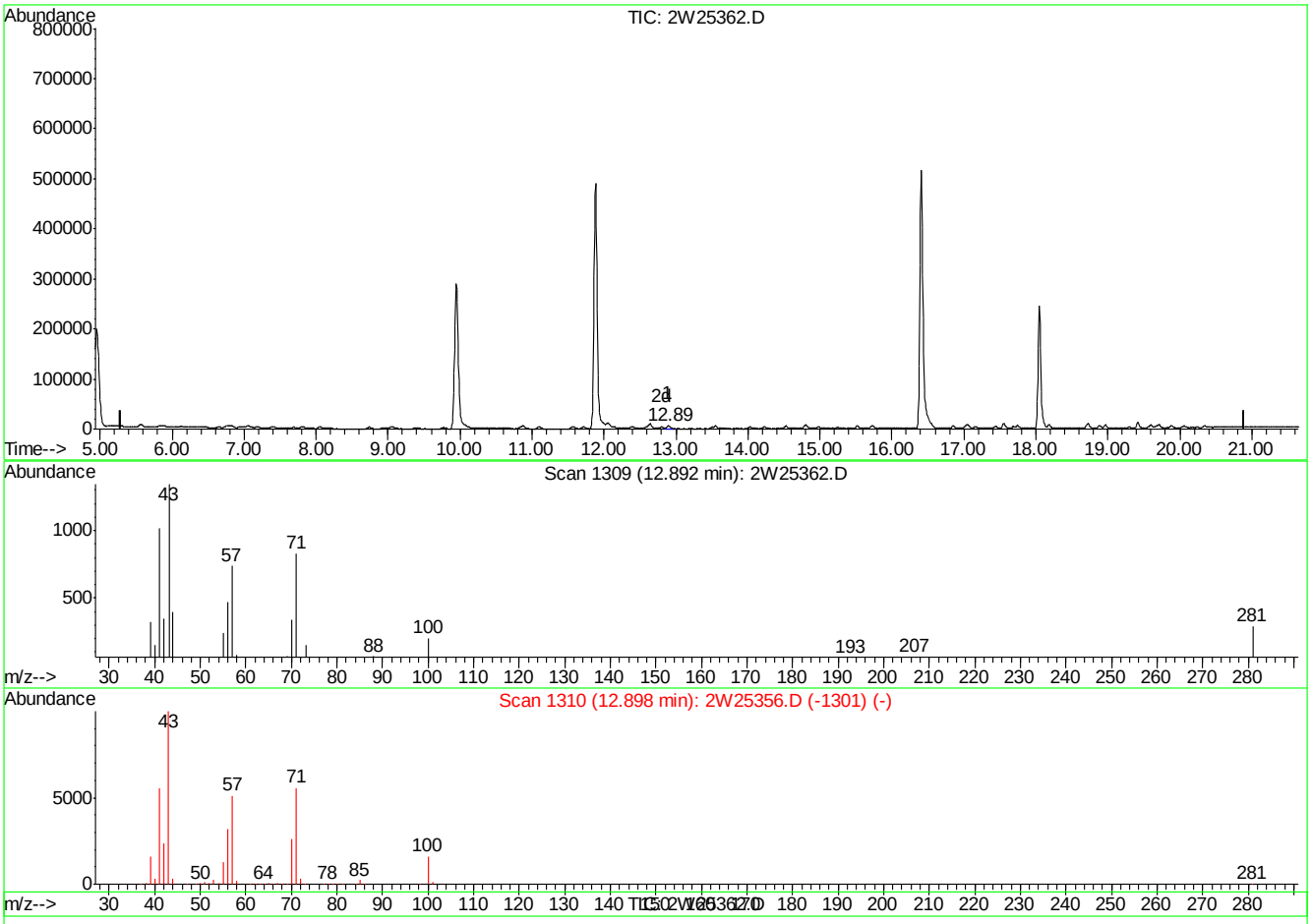


ACCUTEST Laboratories JA28237

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25362.D Vial: 4
Acq On : 5 Sep 2009 4:51 pm Operator: YOUMINH
Sample : IC1070-0.1 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:55 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

12.89min 0.09PPBV m

response 15316

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25362.D M2W1070.M Sun Sep 06 15:08:03 2009 MS2W

2W25363.D

Manual Integrations APPROVED (compounds with "m" flag)

Jessica Reitan-Chu 09/14/09 08:59

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1070\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:56 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

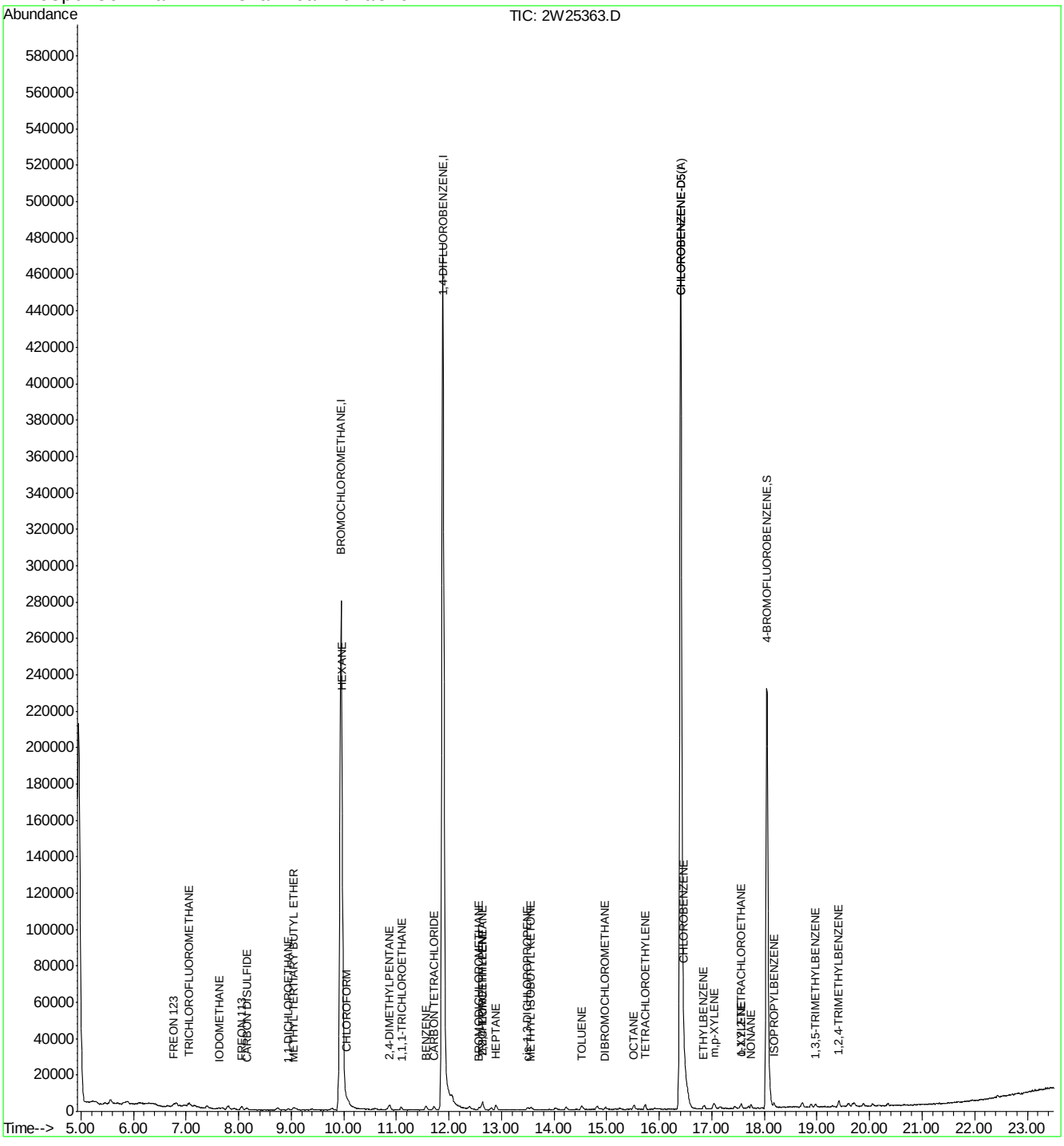
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	130925	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.88	114	619828	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	282724	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	282724	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.05	95	126044	4.37	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 87.40%			
Target Compounds						Qvalue
15) FREON 123	6.75	83	1620	0.04	PPBV #	74
17) TRICHLOROFLUOROMETHANE	7.06	101	2090	0.05	PPBV #	93
23) IODOMETHANE	7.64	142	1692	0.04	PPBV #	34
25) CARBON DISULFIDE	8.15	76	2647	0.04	PPBV #	69
30) FREON 113	8.06	151	1197	0.04	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	9.05	73	2017	0.04	PPBV #	50
35) HEXANE	9.97	57	1309	0.04	PPBV #	63
37) 1,1-DICHLOROETHANE	8.94	63	1573	0.04	PPBV #	50
41) CHLOROFORM	10.06	83	1516	0.04	PPBV #	26
42) 2,4-DIMETHYLPENTANE	10.87	57	1483	0.04	PPBV #	31
43) 1,1,1-TRICHLOROETHANE	11.09	97	1545	0.04	PPBV #	22
44) CARBON TETRACHLORIDE	11.71	117	1651	0.04	PPBV #	83
47) BENZENE	11.57	78	2861	0.04	PPBV #	55
50) TRICHLOROETHYLENE	12.62	95	933m	0.04	PPBV	
52) BROMODICHLOROMETHANE	12.58	83	1441	0.04	PPBV #	25
53) 2,2,4-TRIMETHYLPENTANE	12.64	57	3656	0.04	PPBV #	93
56) HEPTANE	12.90	43	1617	0.04	PPBV #	26
58) METHYL ISOBUTYL KETONE	13.56	43	1672	0.04	PPBV #	48
59) cis-1,3-DICHLOROPROPENE	13.50	75	1116	0.04	PPBV #	25
60) TOLUENE	14.53	92	1355	0.03	PPBV #	80
65) TETRACHLOROETHYLENE	15.73	164	919m	0.04	PPBV	
66) DIBROMOCHLOROMETHANE	14.98	129	1173	0.04	PPBV #	20
68) OCTANE	15.52	43	1508	0.04	PPBV #	35
70) CHLOROBENZENE	16.46	112	1679	0.04	PPBV #	26
71) ETHYLBENZENE	16.85	91	2578	0.04	PPBV #	50
72) m,p-XYLENE	17.04	106	1688	0.07	PPBV	92
73) o-XYLENE	17.55	106	841m	0.04	PPBV	
75) NONANE	17.75	43	1213	0.04	PPBV #	58
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	1073	0.04	PPBV #	25
79) ISOPROPYLBENZENE	18.19	105	2109	0.04	PPBV #	53
83) 1,3,5-TRIMETHYLBENZENE	18.97	105	1368	0.04	PPBV #	33
85) 1,2,4-TRIMETHYLBENZENE	19.42	105	1114	0.04	PPBV #	65

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1070\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 14 8:55 2009 Quant Results File: M2W1070.RES

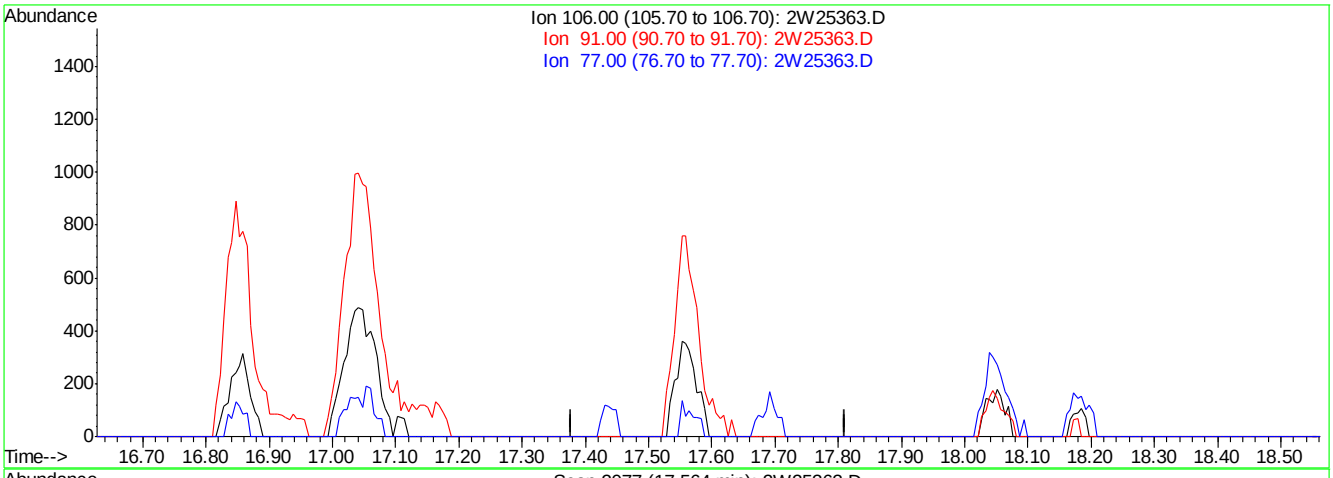
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

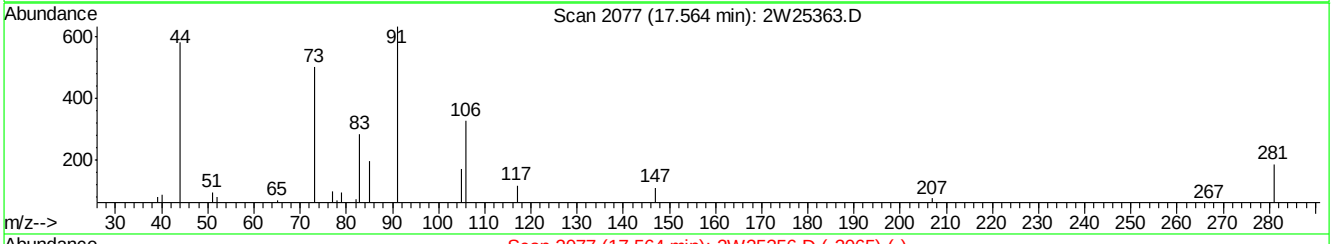


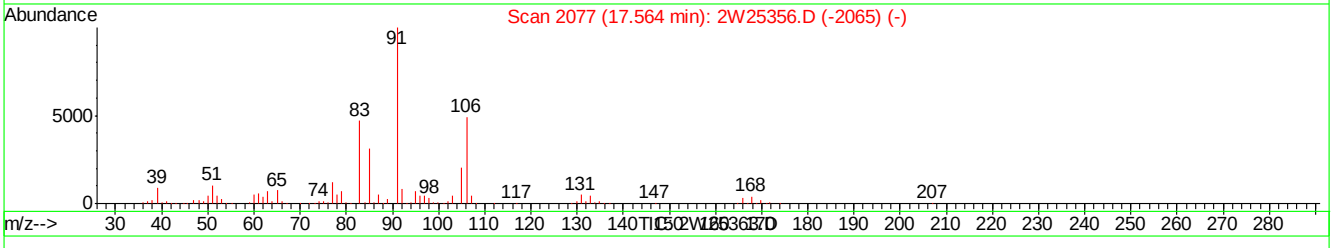
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(73) o-XYLENE

17.56min 0.00PPBV

response 0

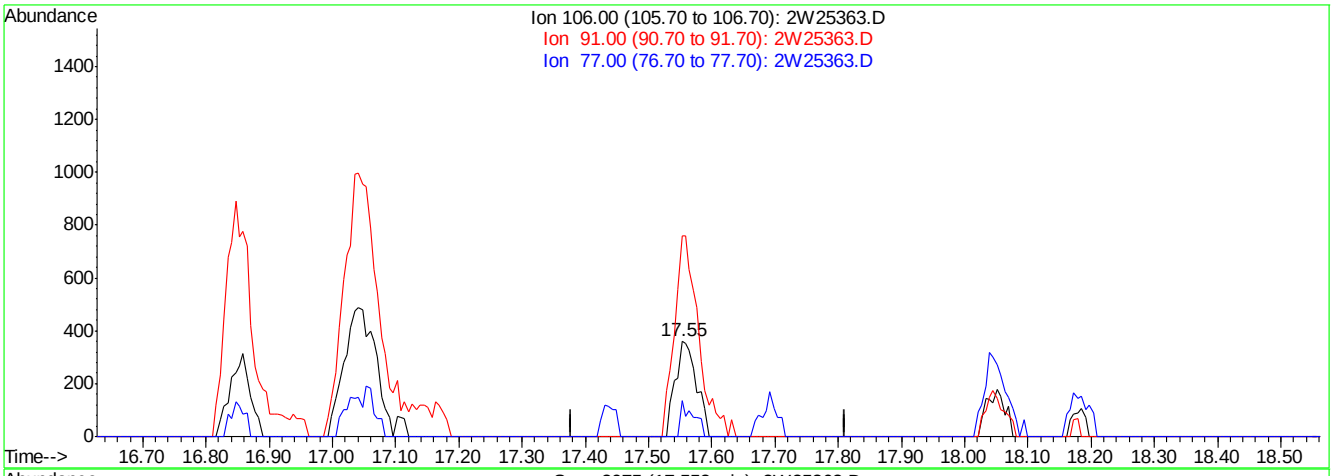
Ion	Exp%	Act%
106.00	100	0.00
91.00	208.60	0.00#
77.00	26.50	0.00#
0.00	0.00	0.00

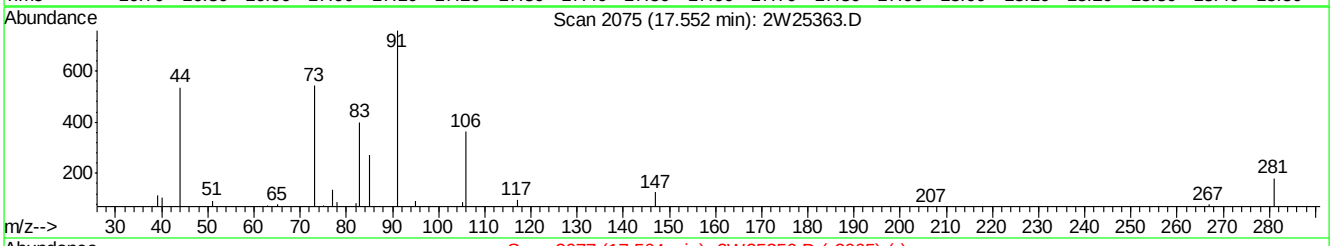
2W25363.D M2W1070.M Sun Sep 06 14:56:26 2009 MS2W

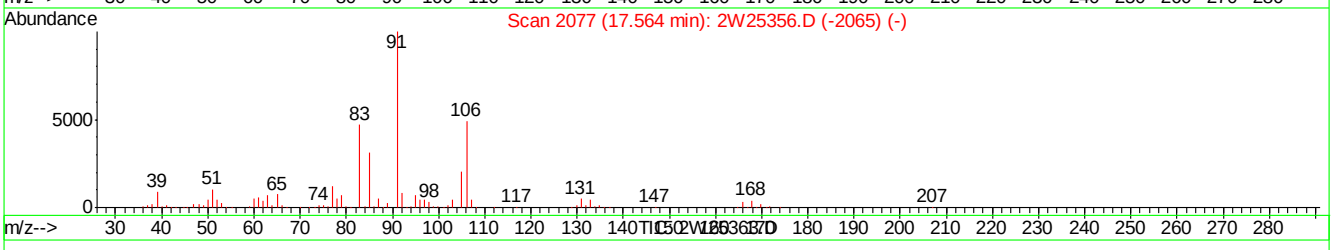
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(73) o-XYLENE

17.55min 0.04PPBV m

response 841

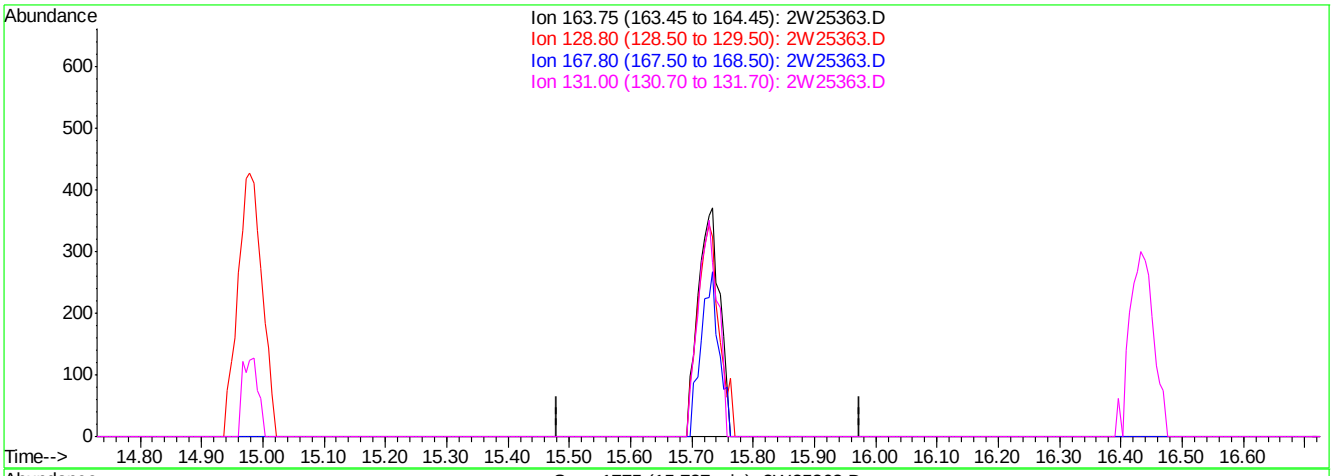
Ion	Exp%	Act%
106.00	100	100
91.00	208.60	0.00#
77.00	26.50	0.00#
0.00	0.00	0.00

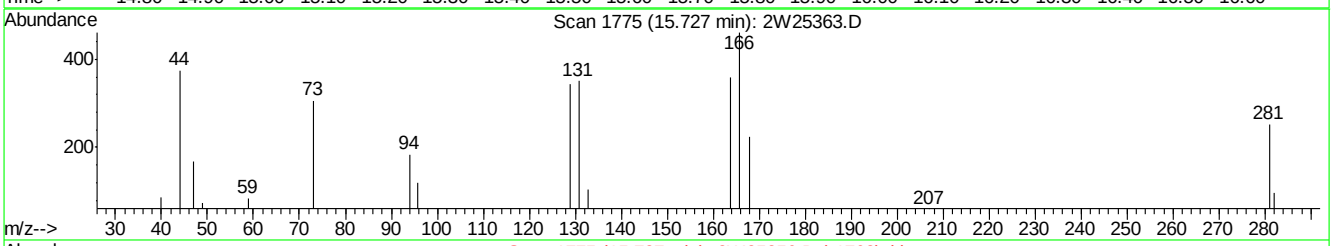
2W25363.D M2W1070.M Sun Sep 06 14:56:32 2009 MS2W

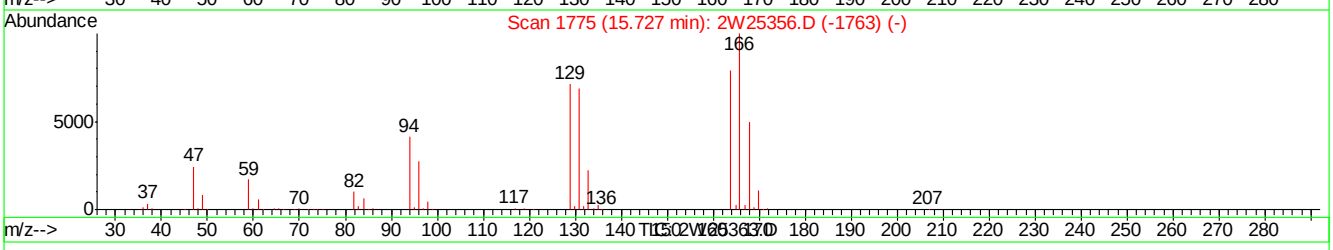
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(65) TETRACHLOROETHYLENE

15.73min 0.00PPBV

response 0

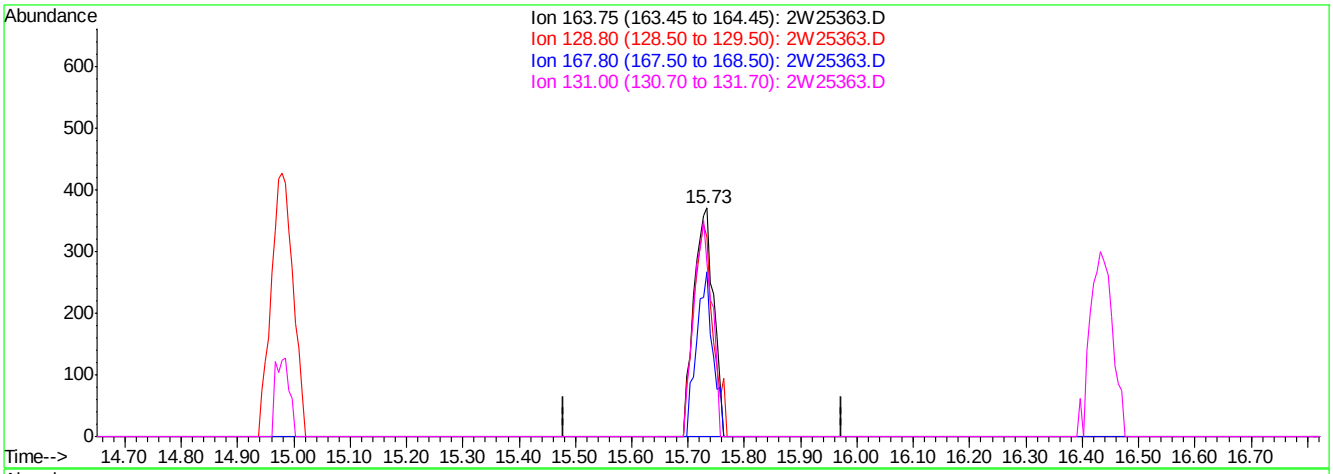
Ion	Exp%	Act%
163.75	100	0.00
128.80	90.30	0.00#
167.80	63.20	0.00#
131.00	87.70	0.00#

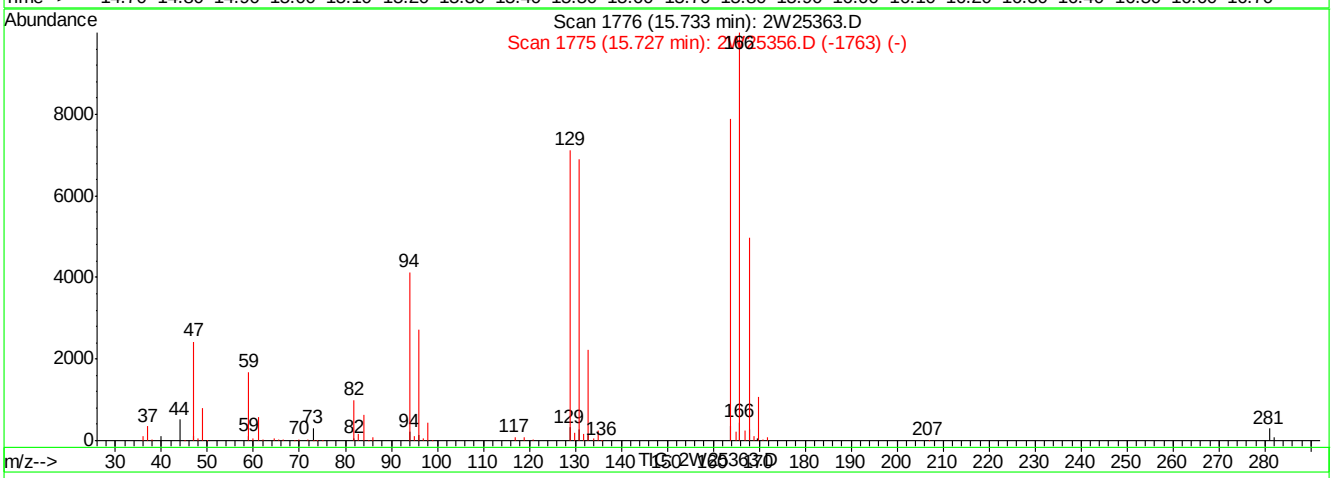
2W25363.D M2W1070.M Sun Sep 06 14:56:35 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(65) TETRACHLOROETHYLENE

15.73min 0.04PPBV m

response 919

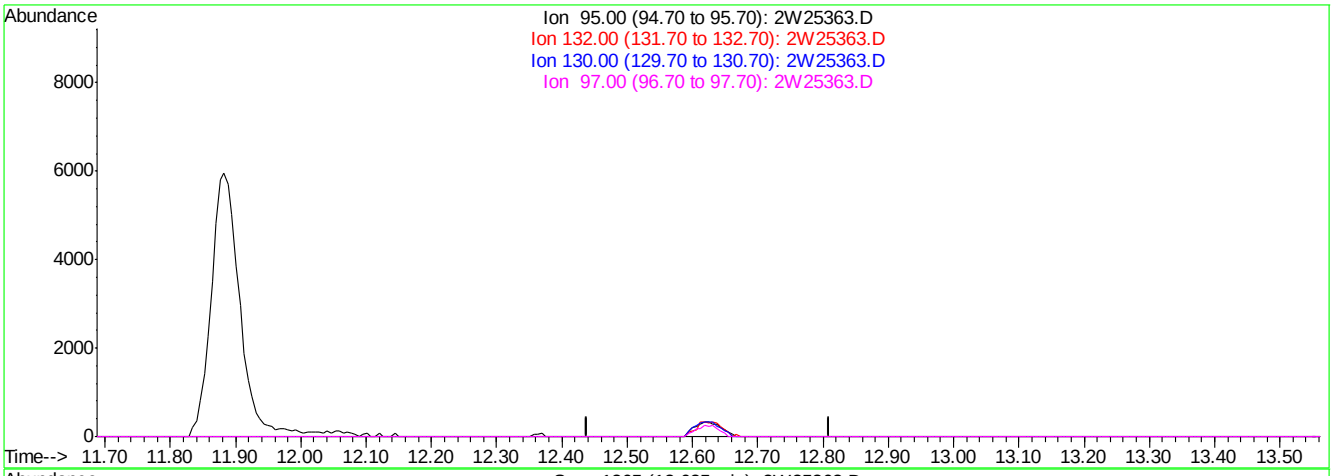
Ion	Exp%	Act%
163.75	100	100
128.80	90.30	0.00#
167.80	63.20	0.00#
131.00	87.70	0.00#

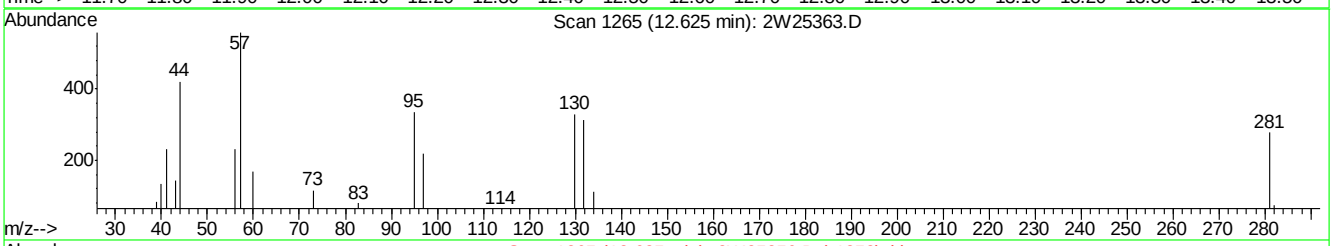
2W25363.D M2W1070.M Sun Sep 06 14:56:40 2009 MS2W

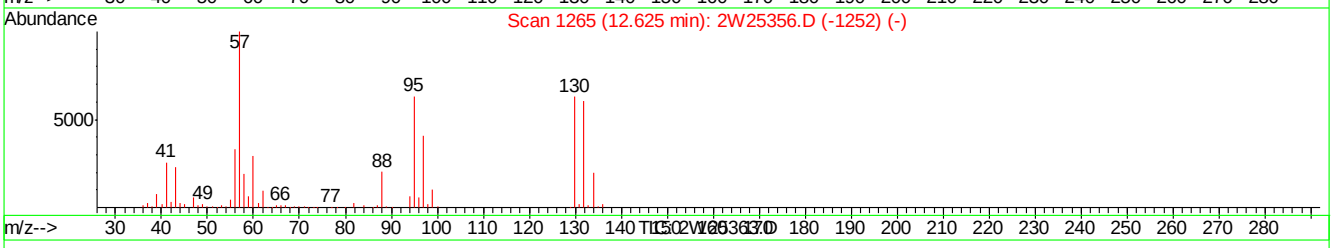
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration







(50) TRICHLOROETHYLENE

12.62min 0.00PPBV

response 0

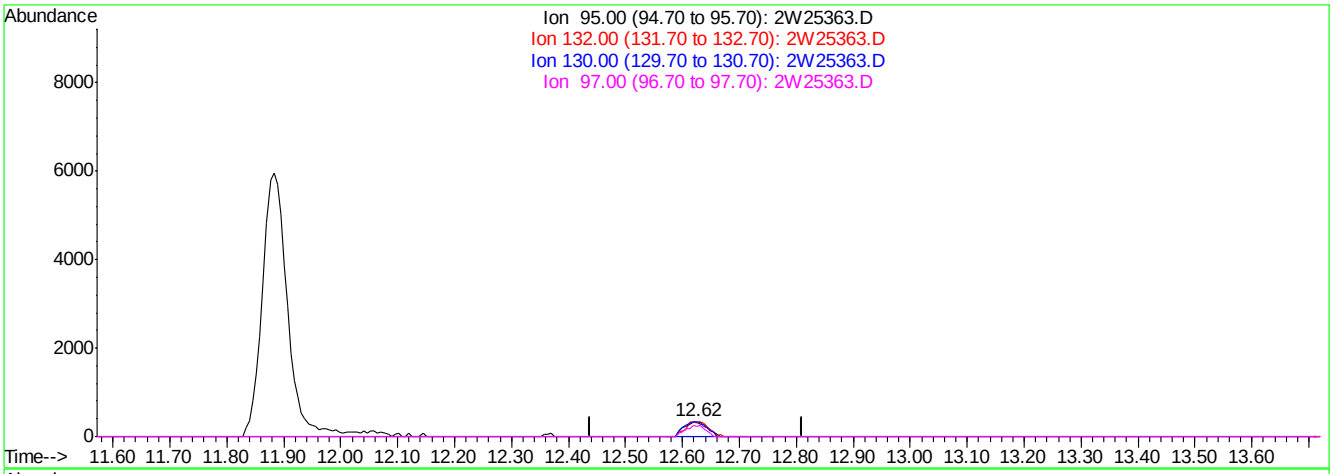
Ion	Exp%	Act%
95.00	100	0.00
132.00	96.70	0.00#
130.00	100.30	0.00#
97.00	65.20	0.00#

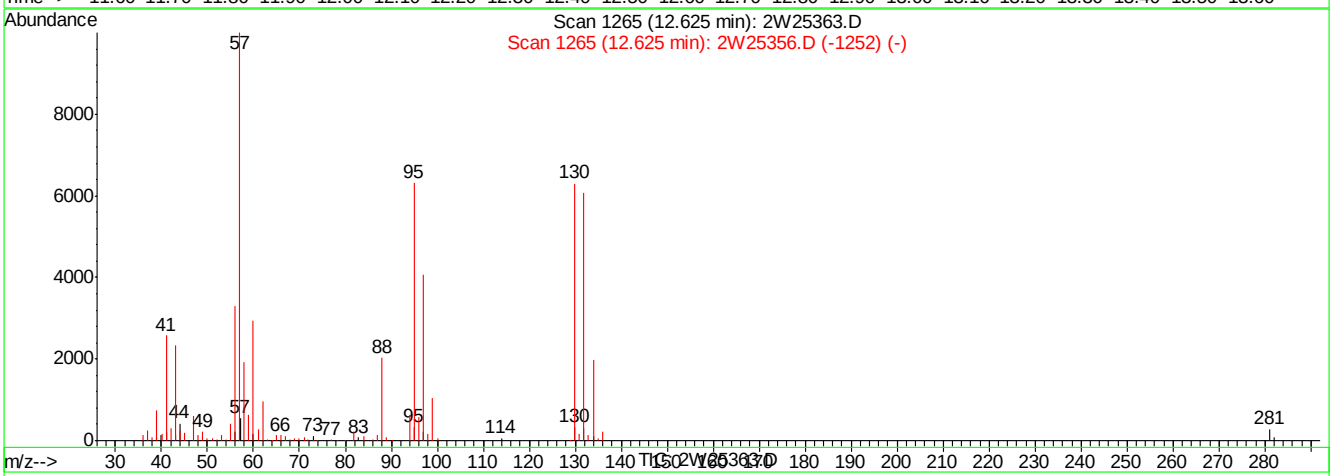
2W25363.D M2W1070.M Sun Sep 06 14:56:44 2009 MS2W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25363.D Vial: 4
Acq On : 5 Sep 2009 5:35 pm Operator: YOUMINH
Sample : IC1070-0.04 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:56 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Multiple Level Calibration





(50) TRICHLOROETHYLENE

12.62min 0.04PPBV m

response 933

Ion	Exp%	Act%
95.00	100	100
132.00	96.70	0.00#
130.00	100.30	0.00#
97.00	65.20	0.00#

2W25363.D M2W1070.M Sun Sep 06 14:56:49 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	108209	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	559053	10.00	PPBV	0.01
63) CHLOROBENZENE-D5	16.42	82	314927	10.00	PPBV	0.01
95) CHLOROBENZENE-D5(A)	16.42	82	314876	10.00	PPBV	0.01

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.06	95	184169	5.73	PPBV	0.01

Spiked Amount 5.000 Range 65 - 128 Recovery = 114.60%

Target Compounds						Qvalue
2) FREON 115	5.01	119	403538	36.23	PPBV	96
3) DICHLORODIFLUOROMETHANE	5.01	85	602451	35.83	PPBV	99
4) FREON 152A	5.12	65	428657	37.14	PPBV	98
5) CHLORODIFLUOROMETHANE	5.17	67	160279	35.57	PPBV	99
6) PROPYLENE	5.21	41	638709	33.75	PPBV	98
7) PROPANE	5.23	43	230506	31.25	PPBV #	100
8) FREON 114	5.55	85	1439797	31.90	PPBV	94
9) CHLOROMETHANE	5.46	52	234813	37.11	PPBV	93
10) VINYL CHLORIDE	5.68	62	741038	37.37	PPBV	99
11) 1,3-BUTADIENE	5.82	54	563053	37.07	PPBV	94
12) n-BUTANE	5.88	43	1078085	32.99	PPBV	97
13) BROMOMETHANE	6.11	94	583651	36.74	PPBV	99
14) CHLOROETHANE	6.28	64	415724	39.63	PPBV	99
15) FREON 123	6.75	83	1201161	35.05	PPBV #	96
16) FREON 123A	6.81	117	695244	37.28	PPBV	89
17) TRICHLOROFLUOROMETHANE	7.05	101	1309828	34.84	PPBV	97
18) ISOPROPYL ALCOHOL	7.10	45	943884	34.10	PPBV	100
19) ACETONE	6.85	58	294854	37.64	PPBV #	89
20) PENTANE	7.39	42	717870	31.18	PPBV	99
21) TVHC as EQUIV PENTANE	7.39	TIC	4496116m	35.62	PPBV	
22) ETHYL ETHER	7.38	74	308686	40.95	PPBV	94
23) IODOMETHANE	7.62	142	1396358	37.75	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.68	96	538217	36.24	PPBV	92
25) CARBON DISULFIDE	8.15	76	1741606	34.36	PPBV	98
26) ETHANOL	6.38	45	233827	36.16	PPBV	100
27) BROMOETHENE	6.64	106	558420	38.25	PPBV	99
28) METHYLENE CHLORIDE	7.79	84	518568	34.79	PPBV	97
29) 3-CHLOROPROPENE	7.92	76	298689	39.77	PPBV #	89
30) FREON 113	8.05	151	851830	36.37	PPBV	95
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	645748	36.76	PPBV	95
32) TERTIARY BUTYL ALCOHOL	7.72	59	374746	11.96	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	8.97	73	1516943	36.62	PPBV	99
34) TETRAHYDROFURAN	10.48	42	849696	39.96	PPBV	95
35) HEXANE	9.98	57	888921	33.77	PPBV	96
36) VINYL ACETATE	9.05	86	153004	44.22	PPBV #	70
37) 1,1-DICHLOROETHANE	8.94	63	1141427	34.58	PPBV	97
38) METHYL ETHYL KETONE	9.32	72	331329	41.70	PPBV #	83
39) cis-1,2-DICHLOROETHYLENE	9.78	96	649341	37.76	PPBV	95
40) ETHYL ACETATE	9.95	61	180564	36.05	PPBV #	61
41) CHLOROFORM	10.08	83	1148591	36.57	PPBV	98

(#) = qualifier out of range (m) = manual integration

ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.88	57	1089645	35.29	PPBV		97
43) 1,1,1-TRICHLOROETHANE	11.10	97	1151547	35.81	PPBV		98
44) CARBON TETRACHLORIDE	11.72	117	1182635	35.41	PPBV		98
45) 1,2-DICHLOROETHANE	10.83	62	827068	36.68	PPBV		98
47) BENZENE	11.57	78	1853356	32.12	PPBV		98
48) CYCLOHEXANE	11.85	84	857013	33.12	PPBV		91
49) 2,3-DIMETHYLPENTANE	12.06	71	447513	37.24	PPBV		88
50) TRICHLOROETHYLENE	12.63	95	638703	30.40	PPBV		93
51) 1,2-DICHLOROPROPANE	12.40	63	762120	35.48	PPBV		98
52) BROMODICHLOROMETHANE	12.59	83	1121669	32.72	PPBV		97
53) 2,2,4-TRIMETHYLPENTANE	12.66	57	2075472	26.18	PPBV		95
54) 1,4-DIOXANE	12.62	88	331928	31.57	PPBV	#	76
55) METHYL METHACRYLATE	12.79	69	660652	39.46	PPBV		93
56) HEPTANE	12.90	43	1076158	30.81	PPBV		91
57) TVHC as EQUIV HEPTANE	12.90	TIC	4758036m	33.59	PPBV		
58) METHYL ISOBUTYL KETONE	13.53	43	1240268	30.76	PPBV		93
59) cis-1,3-DICHLOROPROPENE	13.50	75	1019572	36.47	PPBV		96
60) TOLUENE	14.53	92	1240792	35.41	PPBV		93
61) trans-1,3-DICHLOROPROPENE	14.04	75	1024176	38.82	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.24	83	610424	35.76	PPBV		98
64) 2-HEXANONE	14.78	58	691821	31.00	PPBV		93
65) TETRACHLOROETHYLENE	15.74	164	766484	31.07	PPBV		99
66) DIBROMOCHLOROMETHANE	15.00	129	1179869	34.18	PPBV		99
67) 1,2-DIBROMOETHANE	15.26	107	1015513	33.64	PPBV		98
68) OCTANE	15.53	43	1278014	28.82	PPBV	#	88
69) 1,1,1,2-TETRACHLOROETHANE	16.45	131	776267	33.50	PPBV	#	99
70) CHLOROBENZENE	16.48	112	1276559	29.69	PPBV		97
71) ETHYLBENZENE	16.86	91	2167504	29.99	PPBV		92
72) m,p-XYLENE	17.06	106	1656286	63.42	PPBV		81
73) o-XYLENE	17.58	106	792317	32.29	PPBV	#	87
74) STYRENE	17.45	104	1309501	37.56	PPBV		98
75) NONANE	17.76	43	1084530	29.90	PPBV		90
76) BROMOFORM	17.19	173	1007242	37.57	PPBV		96
78) 1,1,2,2-TETRACHLOROETHANE	17.57	83	883827	30.06	PPBV		97
79) ISOPROPYLBENZENE	18.20	105	2015286	31.54	PPBV		92
80) 2-CHLOROTOLUENE	18.72	126	530674	36.69	PPBV	#	56
81) n-PROPYLBENZENE	18.74	120	587075	38.27	PPBV	#	52
82) 4-ETHYLTOLUENE	18.90	105	1716278	34.56	PPBV		90
83) 1,3,5-TRIMETHYLBENZENE	18.98	105	1435876	34.58	PPBV		93
84) TERT-BUTYLBENZENE	19.43	134	389447	37.41	PPBV		77
85) 1,2,4-TRIMETHYLBENZENE	19.43	105	1162187	33.38	PPBV		98
86) m-DICHLOROBENZENE	19.61	146	809767	39.15	PPBV		97
87) BENZYL CHLORIDE	19.59	91	871496	40.07	PPBV		96
88) p-DICHLOROBENZENE	19.69	146	744511	38.89	PPBV		97
89) SEC-BUTYLBENZENE	19.72	134	445335	40.45	PPBV		70
90) p-ISOPROPYLTOLUENE	19.89	134	436965	42.70	PPBV		84
91) o-DICHLOROBENZENE	20.06	146	685984	40.09	PPBV		98
92) n-BUTYLBENZENE	20.35	134	311579	45.40	PPBV		81
93) HEXACHLOROBUTADIENE	22.43	225	154707	25.67	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 14:44:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sat Sep 05 18:56:54 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

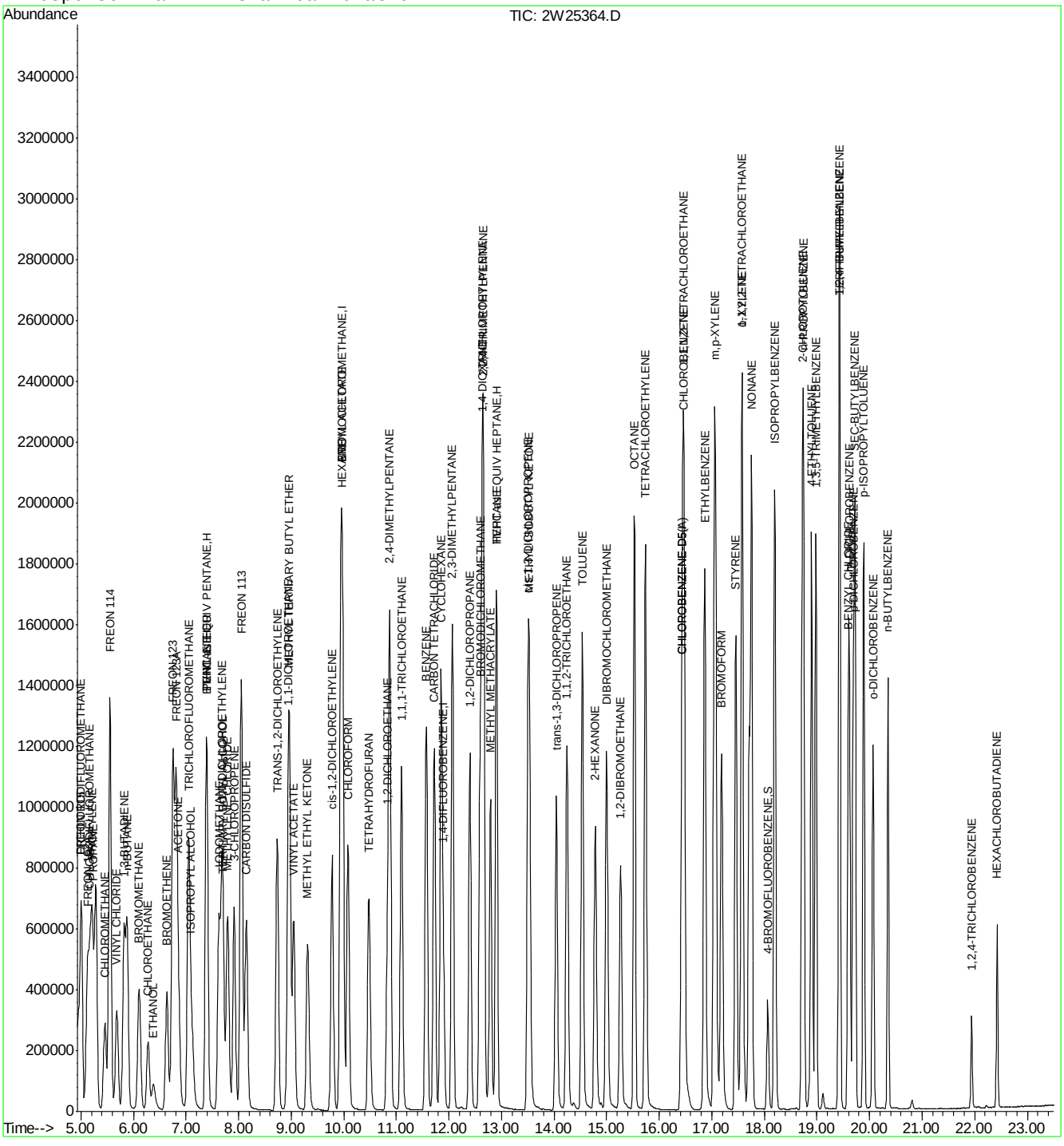
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	129171	33.29	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:57 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

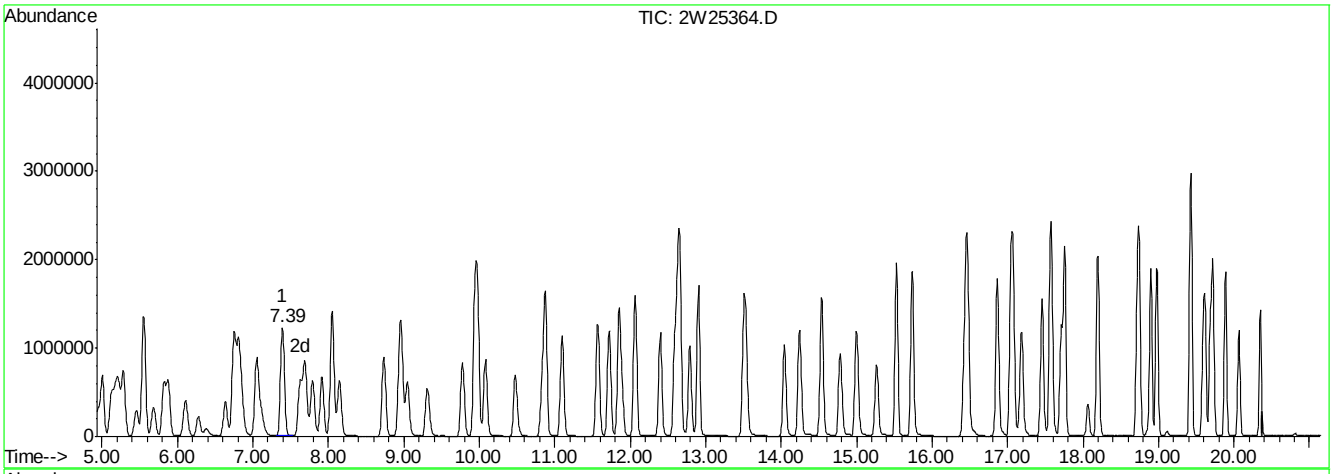


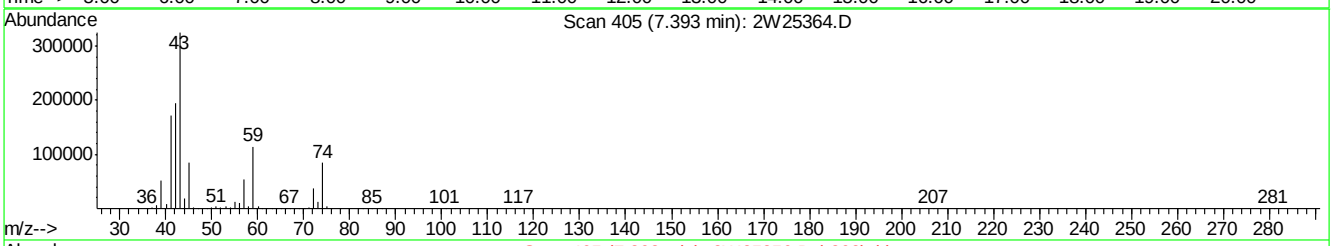
ACCUTEST Laboratories JA28237

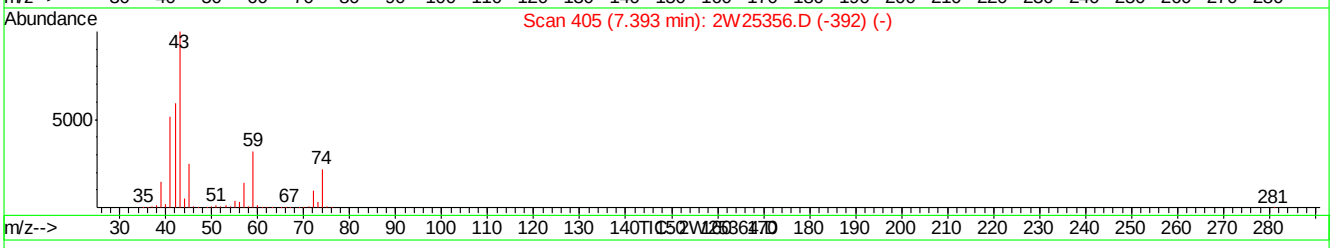
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:57 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.39min 35.62PPBV m

response 4496116

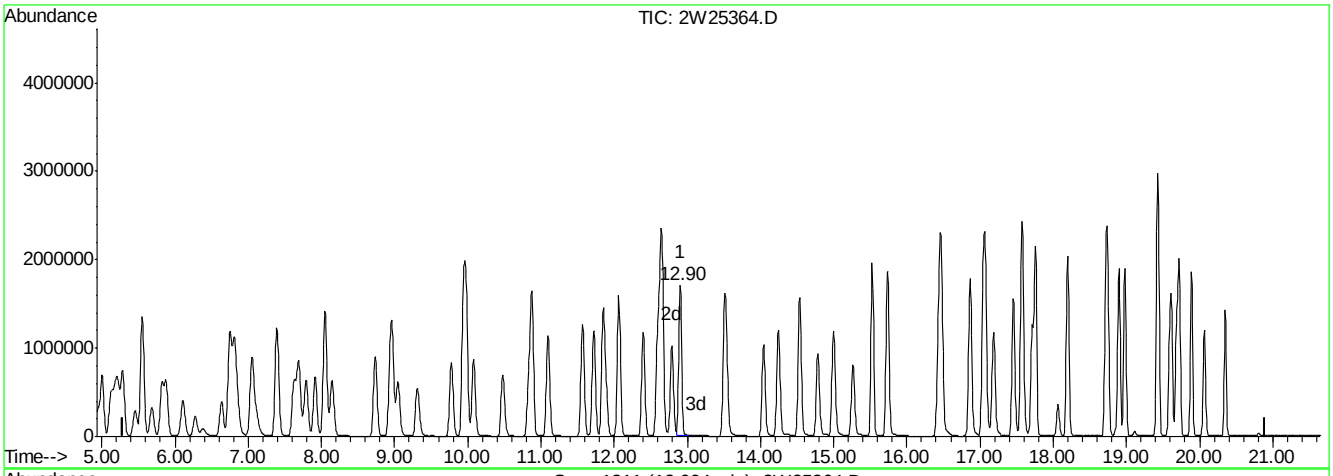
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

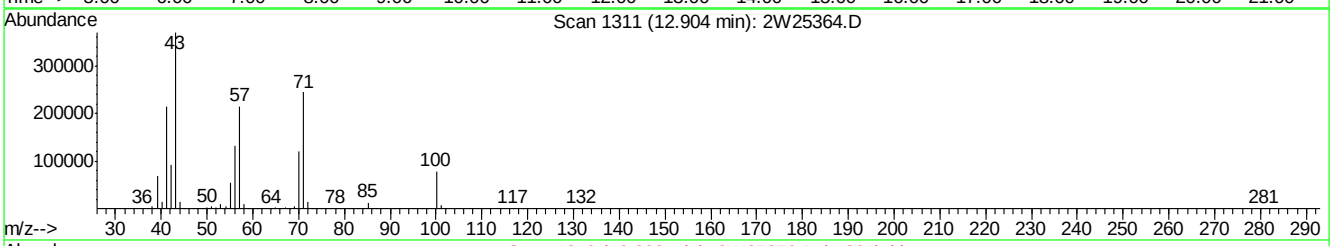
2W25364.D M2W1070.M Sun Sep 06 15:08:13 2009 MS2W

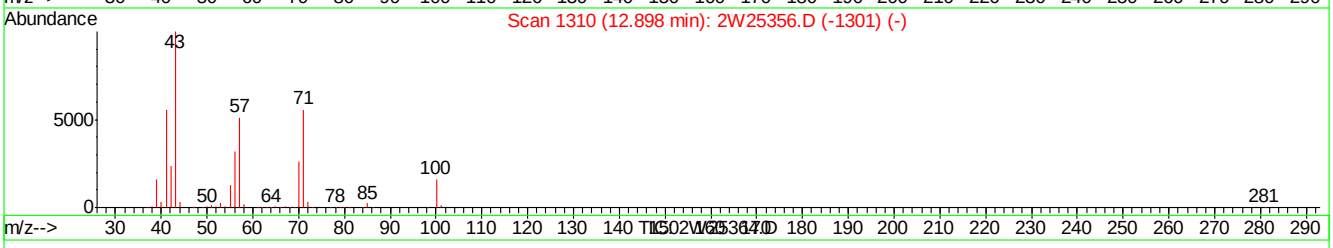
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25364.D Vial: 2
Acq On : 5 Sep 2009 6:19 pm Operator: YOUMINH
Sample : IC1070-40 Inst : MS2W
Misc : MS49009,V2W1070,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 14:57 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 33.59PPBV m

response 4758036

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25364.D M2W1070.M Sun Sep 06 15:08:16 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 15:01:33 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	130248	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	647576	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	337628	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	337502	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	192103	5.58	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 111.60%

Target Compounds						Qvalue
2) FREON 115	5.01	119	122988	9.17	PPBV	95
3) DICHLORODIFLUOROMETHANE	5.02	85	183708	9.08	PPBV	99
4) FREON 152A	5.14	65	132889	9.57	PPBV	97
5) CHLORODIFLUOROMETHANE	5.18	67	50225	9.26	PPBV	99
6) PROPYLENE	5.23	41	204754	8.97	PPBV	98
7) PROPANE	5.25	43	72909	8.21	PPBV #	100
8) FREON 114	5.56	85	520986	9.76	PPBV	97
9) CHLOROMETHANE	5.47	52	70038	9.16	PPBV	93
10) VINYL CHLORIDE	5.70	62	235426	9.86	PPBV	99
11) 1,3-BUTADIENE	5.84	54	177858	9.73	PPBV	96
12) n-BUTANE	5.89	43	358027	9.10	PPBV	98
13) BROMOMETHANE	6.12	94	194174	10.15	PPBV	100
14) CHLOROETHANE	6.29	64	128511	10.18	PPBV	98
15) FREON 123	6.76	83	413447	10.02	PPBV #	99
16) FREON 123A	6.81	117	223781	9.93	PPBV	92
17) TRICHLOROFLUOROMETHANE	7.06	101	437377	9.67	PPBV	100
18) ISOPROPYL ALCOHOL	7.09	45	327274	9.82	PPBV	99
19) ACETONE	6.87	58	89141	9.40	PPBV	93
20) PENTANE	7.40	42	239964	9.06	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1451094m	9.55	PPBV	
22) ETHYL ETHER	7.40	74	91662	10.10	PPBV	96
23) IODOMETHANE	7.64	142	464567	10.44	PPBV	98
24) 1,1-DICHLOROETHYLENE	7.70	96	172441	9.65	PPBV	93
25) CARBON DISULFIDE	8.15	76	590432	9.68	PPBV	98
26) ETHANOL	6.40	45	70947	9.12	PPBV	98
27) BROMOETHENE	6.64	106	185572	10.56	PPBV	100
28) METHYLENE CHLORIDE	7.79	84	160659	8.95	PPBV	94
29) 3-CHLOROPROPENE	7.92	76	89336	9.88	PPBV #	89
30) FREON 113	8.06	151	275660	9.78	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	207601	9.82	PPBV	96
32) TERTIARY BUTYL ALCOHOL	7.70	59	380251	10.08	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	8.97	73	498245	9.99	PPBV	98
34) TETRAHYDROFURAN	10.48	42	254664	9.95	PPBV	96
35) HEXANE	9.98	57	306356	9.67	PPBV	98
36) VINYL ACETATE	9.04	86	43162	10.36	PPBV #	86
37) 1,1-DICHLOROETHANE	8.94	63	377357	9.50	PPBV	99
38) METHYL ETHYL KETONE	9.31	72	99053	10.36	PPBV #	91
39) cis-1,2-DICHLOROETHYLENE	9.78	96	204284	9.87	PPBV	95
40) ETHYL ACETATE	9.95	61	59805	9.92	PPBV #	88
41) CHLOROFORM	10.08	83	370402	9.80	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 15:01:33 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	2,4-DIMETHYLPENTANE	10.87	57	363971	9.79	PPBV		99
43)	1,1,1-TRICHLOROETHANE	11.10	97	377638	9.76	PPBV		99
44)	CARBON TETRACHLORIDE	11.72	117	396570	9.86	PPBV		100
45)	1,2-DICHLOROETHANE	10.83	62	259531	9.56	PPBV		99
47)	BENZENE	11.57	78	616836	9.23	PPBV		99
48)	CYCLOHEXANE	11.85	84	272875	9.11	PPBV		96
49)	2,3-DIMETHYLPENTANE	12.07	71	136616	9.82	PPBV		97
50)	TRICHLOROETHYLENE	12.62	95	229502	9.43	PPBV		98
51)	1,2-DICHLOROPROPANE	12.39	63	239659	9.63	PPBV		100
52)	BROMODICHLOROMETHANE	12.58	83	389844	9.82	PPBV		100
53)	2,2,4-TRIMETHYLPENTANE	12.65	57	841599	9.17	PPBV		99
54)	1,4-DIOXANE	12.62	88	121134	9.95	PPBV	#	65
55)	METHYL METHACRYLATE	12.78	69	198199	10.22	PPBV		95
56)	HEPTANE	12.90	43	368894	9.12	PPBV		97
57)	TVHC as EQUIV HEPTANE	12.90	TIC	1550652m	9.52	PPBV		
58)	METHYL ISOBUTYL KETONE	13.52	43	445932	9.55	PPBV		98
59)	cis-1,3-DICHLOROPROPENE	13.49	75	330517	10.21	PPBV		98
60)	TOLUENE	14.53	92	407225	10.03	PPBV		100
61)	trans-1,3-DICHLOROPROPENE	14.03	75	316242	10.35	PPBV		98
62)	1,1,2-TRICHLOROETHANE	14.23	83	194131	9.82	PPBV		98
64)	2-HEXANONE	14.77	58	227690	9.53	PPBV		97
65)	TETRACHLOROETHYLENE	15.73	164	251535	9.48	PPBV		100
66)	DIBROMOCHLOROMETHANE	14.99	129	376496	10.18	PPBV		100
67)	1,2-DIBROMOETHANE	15.25	107	321963	9.96	PPBV		100
68)	OCTANE	15.52	43	458677	9.66	PPBV		97
69)	1,1,1,2-TETRACHLOROETHANE	16.44	131	249811	10.07	PPBV	#	99
70)	CHLOROBENZENE	16.46	112	434383	9.43	PPBV		98
71)	ETHYLBENZENE	16.85	91	766325	9.90	PPBV		99
72)	m,p-XYLENE	17.05	106	564933	20.20	PPBV		98
73)	o-XYLENE	17.56	106	266882	10.22	PPBV		98
74)	STYRENE	17.44	104	418149	11.20	PPBV		99
75)	NONANE	17.75	43	403607	10.39	PPBV		98
76)	BROMOFORM	17.17	173	315435	10.99	PPBV		99
78)	1,1,2,2-TETRACHLOROETHANE	17.55	83	328299	10.43	PPBV		100
79)	ISOPROPYLBENZENE	18.19	105	722793	10.56	PPBV		100
80)	2-CHLOROTOLUENE	18.71	126	167425	10.81	PPBV		95
81)	n-PROPYLBENZENE	18.73	120	183569	11.18	PPBV		94
82)	4-ETHYLTOLUENE	18.89	105	610150	11.50	PPBV		99
83)	1,3,5-TRIMETHYLBENZENE	18.97	105	498071	11.20	PPBV		99
84)	TERT-BUTYLBENZENE	19.42	134	124314	11.16	PPBV		98
85)	1,2,4-TRIMETHYLBENZENE	19.42	105	437120	11.73	PPBV		98
86)	m-DICHLOROBENZENE	19.61	146	257396	11.59	PPBV		99
87)	BENZYL CHLORIDE	19.58	91	280520	12.05	PPBV		99
88)	p-DICHLOROBENZENE	19.68	146	233063	11.37	PPBV		100
89)	SEC-BUTYLBENZENE	19.72	134	135685	11.51	PPBV		98
90)	p-ISOPROPYLTOLUENE	19.88	134	134757	12.30	PPBV		98
91)	o-DICHLOROBENZENE	20.06	146	216007	11.79	PPBV		100
92)	n-BUTYLBENZENE	20.34	134	92526	12.60	PPBV		96
93)	HEXACHLOROBUTADIENE	22.43	225	67628	10.48	PPBV		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 06 15:01:33 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

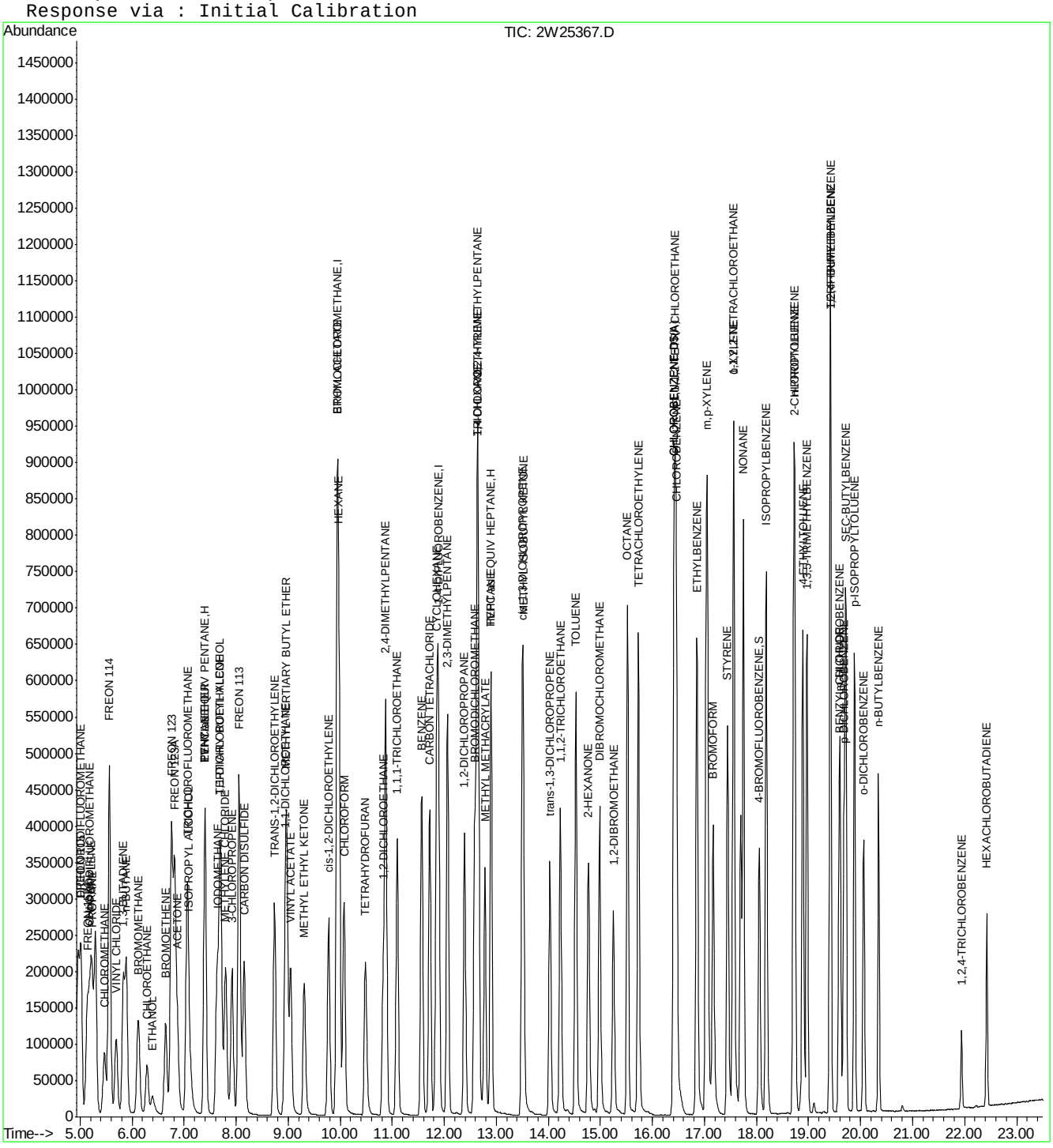
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	46686	11.23	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 15:01 2009 Quant Results File: M2W1070.RES

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

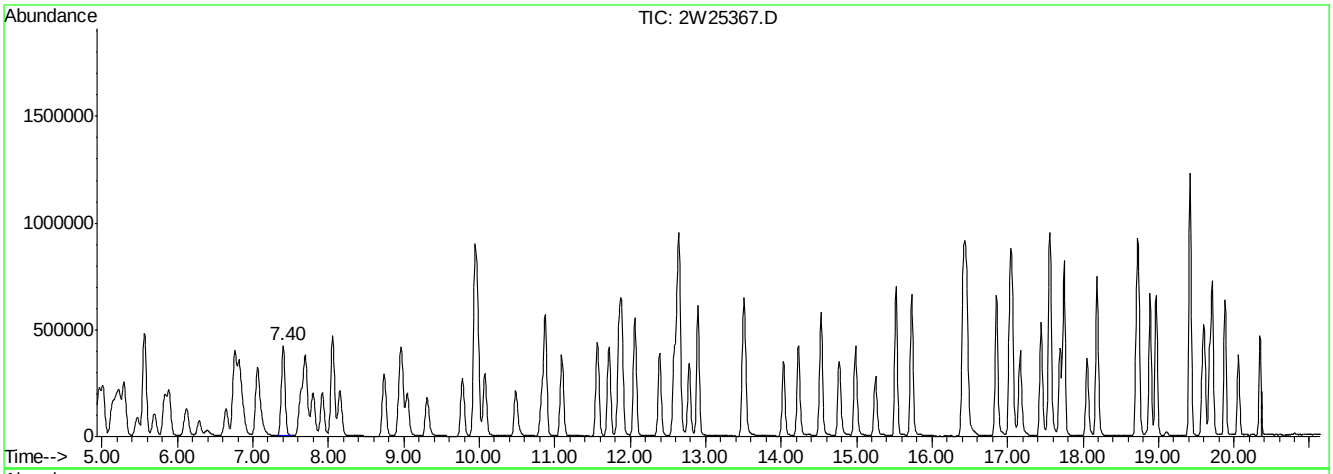


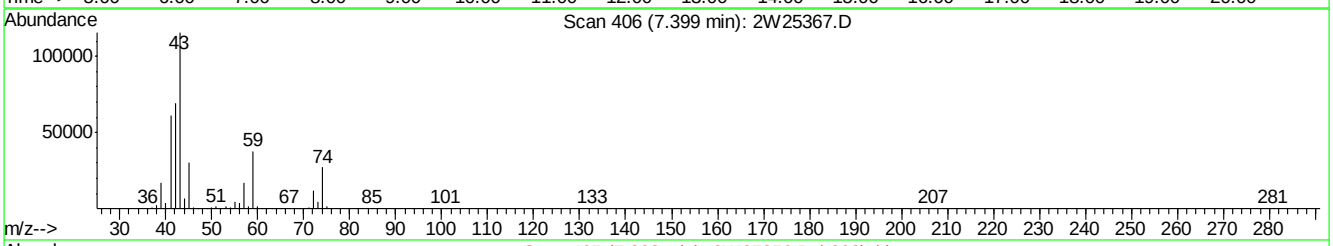
ACCUTEST Laboratories JA28237

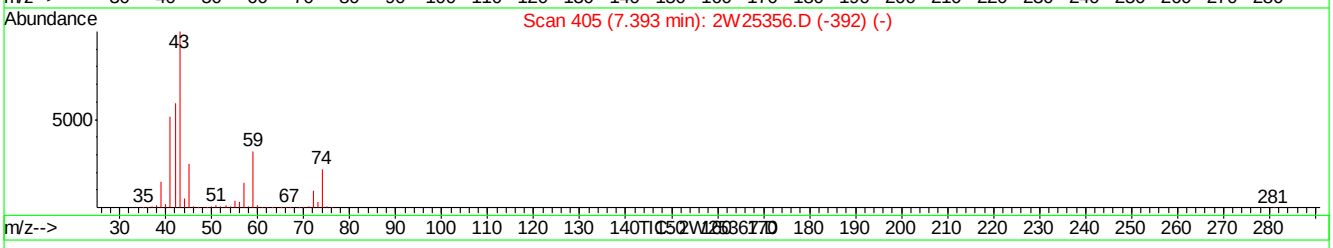
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 15:01 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 9.55PPBV m

response 1451094

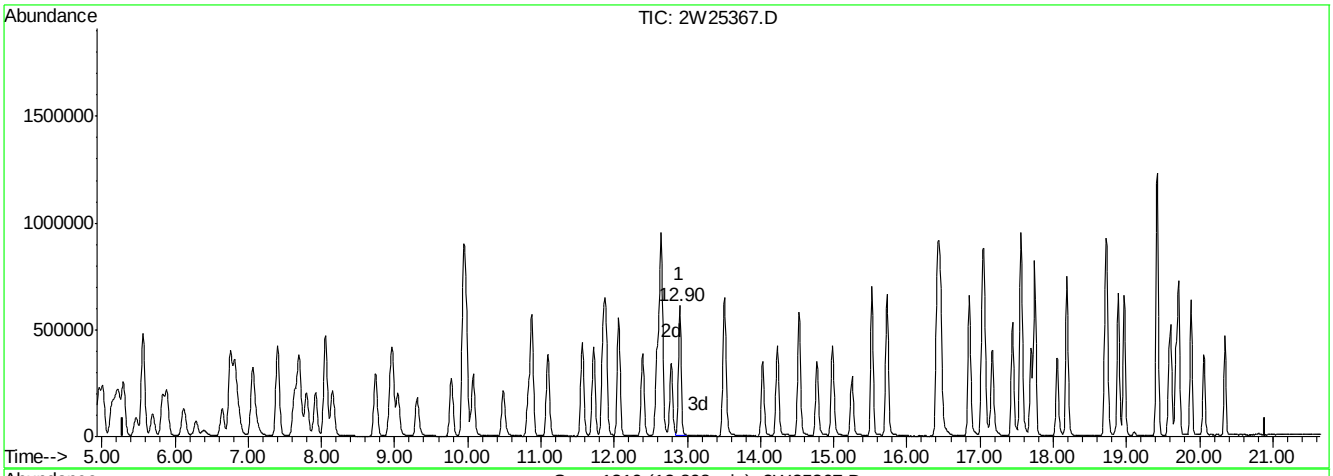
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

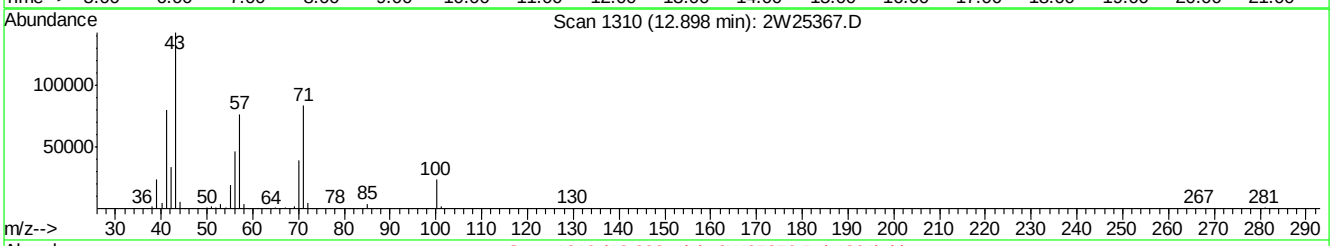
2W25367.D M2W1070.M Mon Sep 14 09:03:49 2009 MS2W

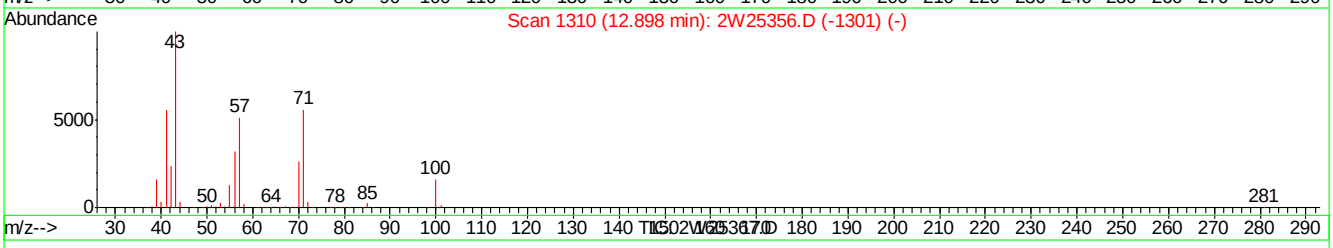
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\OLD_2W\V2W1071\2W25367.D Vial: 3
Acq On : 6 Sep 2009 12:22 pm Operator: YOUMINH
Sample : ICV1070-10 Inst : MS2W
Misc : MS49009,V2W1071,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 6 15:01 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.90min 9.52PPBV m

response 1550652

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25367.D M2W1070.M Mon Sep 14 09:03:53 2009 MS2W

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) BROMOCHLOROMETHANE	9.948	128	151545	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.883	114	751574	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.409	82	388121	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.409	82	388121	10.00	PPBV	0.00
System Monitoring Compounds						
77) 4-BROMOFLUOROBENZENE	18.051	95	224639	5.68	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery	=	113.60%	
Target Compounds						Qvalue
2) FREON 115	5.020	119	146576	9.40	PPBV	97
3) DICHLORODIFLUOROMETHANE	5.020	85	220886	9.38	PPBV	99
4) FREON 152A	5.136	65	142913	8.84	PPBV	96
5) CHLORODIFLUOROMETHANE	5.184	67	55671	8.82	PPBV	99
6) PROPYLENE	5.227	41	225995	8.51	PPBV	99
7) PROPANE	5.245	43	80219	7.77	PPBV #	100
8) FREON 114	5.562	85	569723	9.18	PPBV	96
9) CHLOROMETHANE	5.470	52	77174	8.68	PPBV	94
10) VINYL CHLORIDE	5.696	62	263663	9.49	PPBV	99
11) 1,3-BUTADIENE	5.829	54	197411	9.28	PPBV	95
12) n-BUTANE	5.890	43	396828	8.67	PPBV	98
13) BROMOMETHANE	6.121	94	220061	9.89	PPBV	99
14) CHLOROETHANE	6.286	64	142199	9.68	PPBV	98
15) FREON 123	6.760	83	452379	9.43	PPBV #	99
16) FREON 123A	6.815	117	245411	9.36	PPBV	92
17) TRICHLOROFLUOROMETHANE	7.058	101	492453	9.35	PPBV	100
18) ISOPROPYL ALCOHOL	7.095	45	370261	9.55	PPBV	98
19) ACETONE	6.864	58	101172	9.17	PPBV	91
20) PENTANE	7.399	42	265124	8.60	PPBV	99
21) TVHC as EQUIV PENTANE	7.399	TIC	1643085m	9.29	PPBV	
22) ETHYL ETHER	7.399	74	102414	9.70	PPBV	96
23) IODOMETHANE	7.630	142	521611	10.07	PPBV	99
24) 1,1-DICHLOROETHYLENE	7.697	96	193167	9.29	PPBV	93
25) CARBON DISULFIDE	8.153	76	664580	9.36	PPBV	98
26) ETHANOL	6.389	45	79406	8.77	PPBV	100
27) BROMOETHENE	6.645	106	208504	10.20	PPBV	99
28) METHYLENE CHLORIDE	7.794	84	179761	8.60	PPBV	94
29) 3-CHLOROPROPENE	7.916	76	98410	9.36	PPBV #	88
30) FREON 113	8.056	151	309540	9.44	PPBV	98
31) TRANS-1,2-DICHLOROETHY...	8.737	96	230694	9.38	PPBV	95
32) TERTIARY BUTYL ALCOHOL	7.691	59	431995	9.84	PPBV	99
33) METHYL TERTIARY BUTYL ...	8.975	73	559824	9.65	PPBV	98
34) TETRAHYDROFURAN	10.483	42	282505	9.49	PPBV	94
35) HEXANE	9.978	57	335776	9.11	PPBV	98
36) VINYL ACETATE	9.041	86	48351	9.98	PPBV #	78
37) 1,1-DICHLOROETHANE	8.938	63	414193	8.96	PPBV	99
38) METHYL ETHYL KETONE	9.303	72	112932	10.15	PPBV #	88
39) cis-1,2-DICHLOROETHYLENE	9.771	96	223555	9.28	PPBV	96
40) ETHYL ACETATE	9.948	61	65991	9.41	PPBV #	87

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units		Dev(Min)
41) CHLOROFORM	10.070	83	412361	9.38	PPBV		99
42) 2,4-DIMETHYLPENTANE	10.873	57	399968	9.25	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.092	97	417493	9.27	PPBV		99
44) CARBON TETRACHLORIDE	11.718	117	442077	9.45	PPBV		100
45) 1,2-DICHLOROETHANE	10.824	62	286653	9.08	PPBV		99
47) BENZENE	11.560	78	671794	8.66	PPBV		99
48) CYCLOHEXANE	11.846	84	301537	8.67	PPBV		96
49) 2,3-DIMETHYLPENTANE	12.059	71	150202	9.30	PPBV		96
50) TRICHLOROETHYLENE	12.625	95	249739	8.84	PPBV		98
51) 1,2-DICHLOROPROPANE	12.387	63	259866	9.00	PPBV		100
52) BROMODICHLOROMETHANE	12.582	83	427634	9.28	PPBV		99
53) 2,2,4-TRIMETHYLPENTANE	12.649	57	907777	8.52	PPBV		100
54) 1,4-DIOXANE	12.625	88	136811	9.68	PPBV	#	49
55) METHYL METHACRYLATE	12.777	69	224377	9.97	PPBV		93
56) HEPTANE	12.892	43	397181	8.46	PPBV		96
57) TVHC as EQUIV HEPTANE	12.892	TIC	1691411m	8.95	PPBV		
58) METHYL ISOBUTYL KETONE	13.513	43	497222	9.18	PPBV		97
59) cis-1,3-DICHLOROPROPENE	13.495	75	356855	9.50	PPBV		98
60) TOLUENE	14.523	92	443955	9.42	PPBV		99
61) trans-1,3-DICHLOROPROPENE	14.024	75	342095	9.65	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.225	83	211671	9.22	PPBV		98
64) 2-HEXANONE	14.766	58	255783	9.31	PPBV		95
65) TETRACHLOROETHYLENE	15.727	164	274374	8.99	PPBV		100
66) DIBROMOCHLOROMETHANE	14.979	129	411640	9.69	PPBV		100
67) 1,2-DIBROMOETHANE	15.247	107	347912	9.37	PPBV		99
68) OCTANE	15.520	43	488266	8.95	PPBV		96
69) 1,1,1,2-TETRACHLOROETHANE	16.433	131	269778	9.46	PPBV	#	99
70) CHLOROBENZENE	16.457	112	469034	8.86	PPBV		99
71) ETHYLBENZENE	16.853	91	829566	9.32	PPBV		99
72) m,p-XYLENE	17.041	106	611897	19.03	PPBV		98
73) o-XYLENE	17.558	106	288917	9.62	PPBV		99
74) STYRENE	17.443	104	452200	10.54	PPBV		99
75) NONANE	17.747	43	428886	9.61	PPBV		97
76) BROMOFORM	17.163	173	346327	10.50	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.552	83	361931	10.00	PPBV		99
79) ISOPROPYLBENZENE	18.185	105	782066	9.94	PPBV		99
80) 2-CHLOROTOLUENE	18.708	126	180970	10.17	PPBV		95
81) n-PROPYLBENZENE	18.733	120	200228	10.61	PPBV		92
82) 4-ETHYLTOLUENE	18.885	105	653483	10.72	PPBV		98
83) 1,3,5-TRIMETHYLBENZENE	18.964	105	551919	10.80	PPBV		100
84) TERT-BUTYLBENZENE	19.414	134	136140	10.63	PPBV		97
85) 1,2,4-TRIMETHYLBENZENE	19.420	105	478055	11.16	PPBV		98
86) m-DICHLOROBENZENE	19.603	146	280304	10.98	PPBV		99
87) BENZYL CHLORIDE	19.578	91	307058	11.47	PPBV		99
88) p-DICHLOROBENZENE	19.676	146	247840	10.52	PPBV		99
89) SEC-BUTYLBENZENE	19.712	134	149921	11.07	PPBV		96
90) p-ISOPROPYLTOLUENE	19.882	134	147937	11.75	PPBV		99
91) o-DICHLOROBENZENE	20.059	146	237812	11.30	PPBV		100
92) n-BUTYLBENZENE	20.345	134	102739	12.17	PPBV		96
93) HEXACHLOROBUTADIENE	22.425	225	75210	10.14	PPBV		100

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

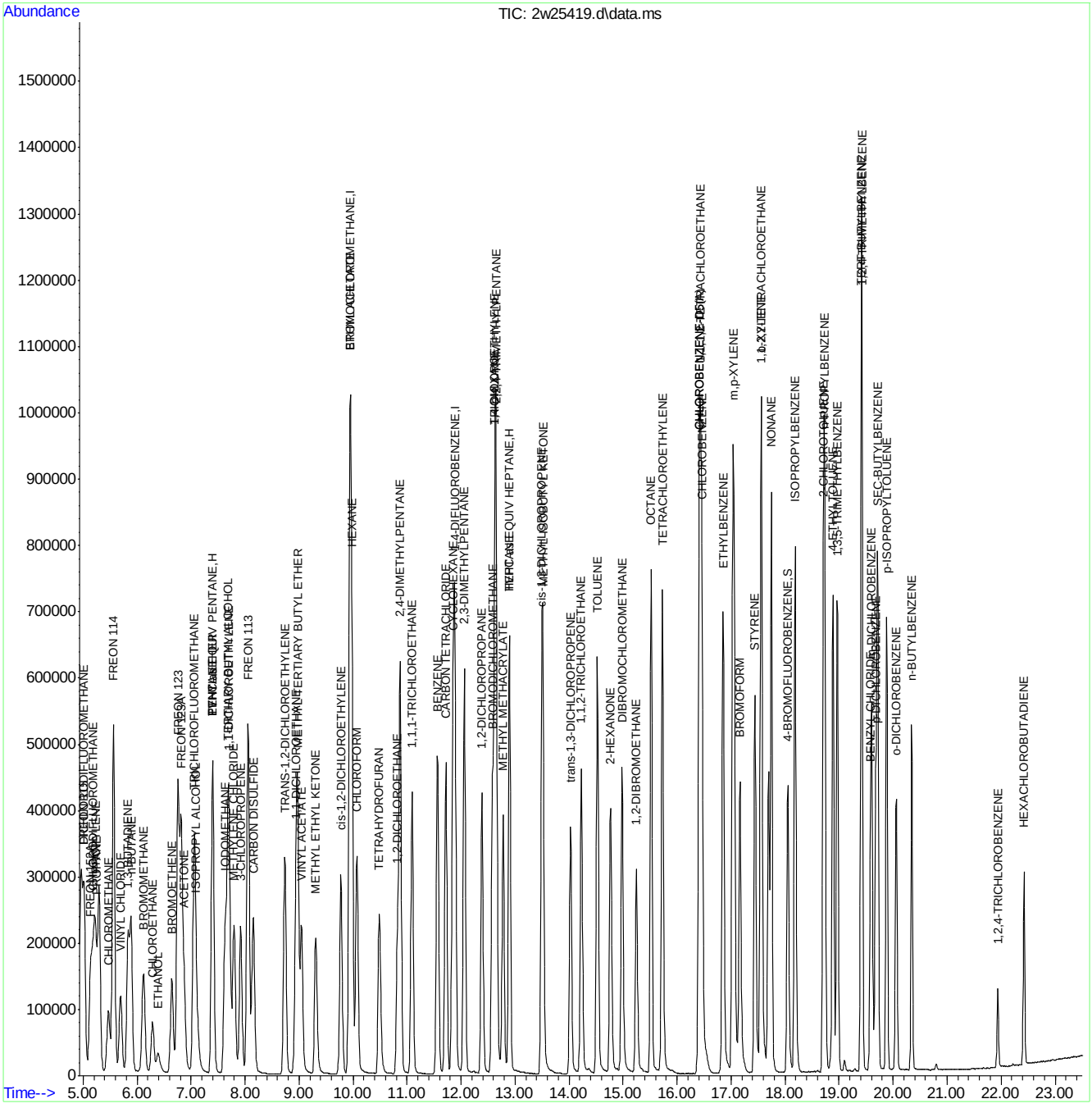
Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
94) 1,2,4-TRICHLOROBENZENE	21.939	180	50287	10.52 PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:12:35 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration



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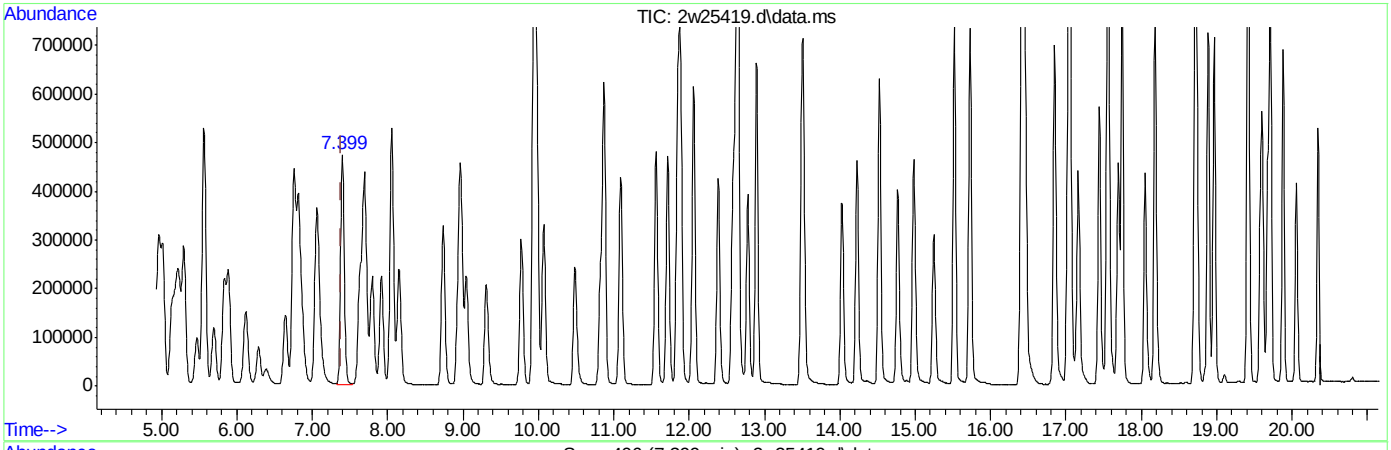
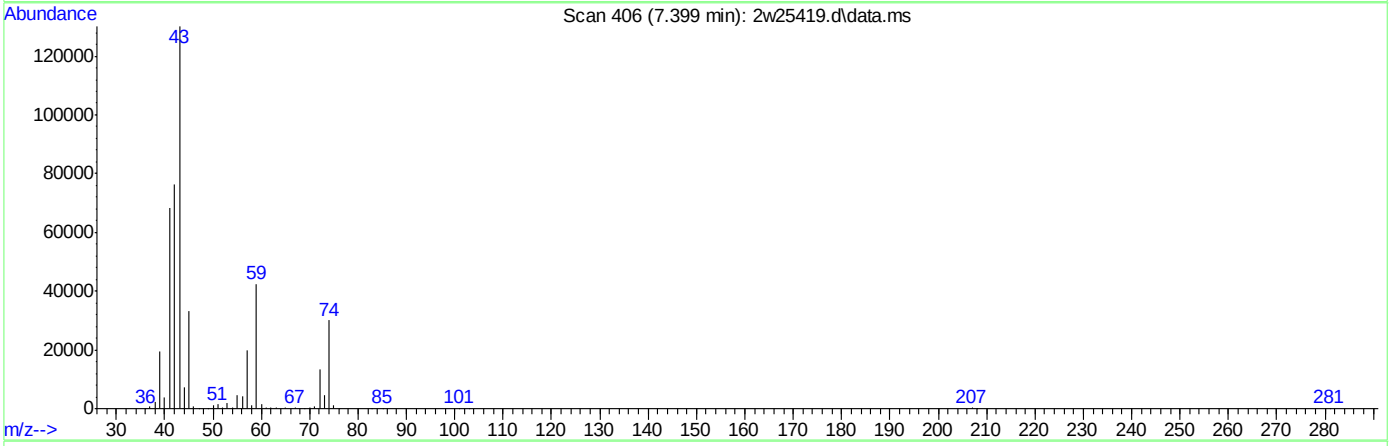
Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:11:30 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25419.d\data.ms

(21) TVHC as EQUIV PENTANE (H)

7.399min (+0.006) 9.29PPBV m

response 1643085

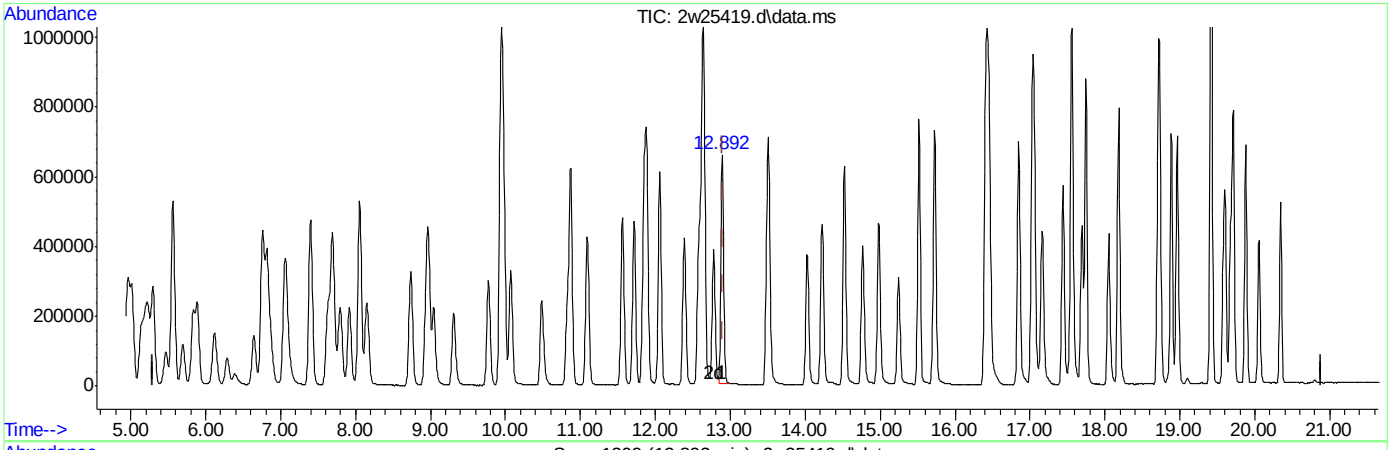
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

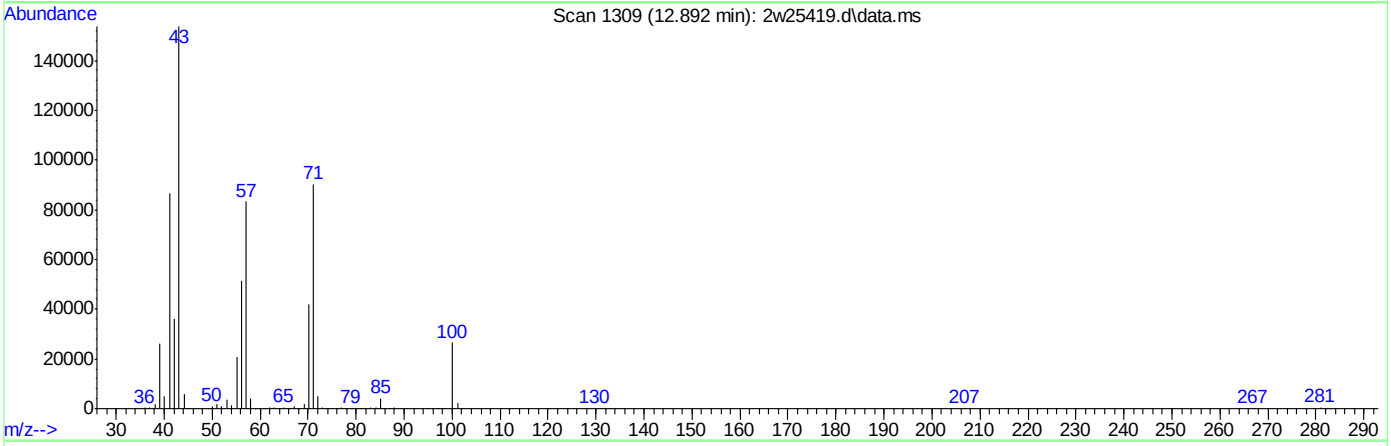
ACCUTEST Laboratories JA28237

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\DATA\2W CORE\v2w1073\
Data File : 2w25419.d
Acq On : 9 Sep 2009 10:34 am
Operator : YOUMINH
Sample : CC1070-10
Misc : MS49009,V2W1073,,,,,1
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Sep 10 09:11:30 2009
Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M
Quant Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
QLast Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration





TIC: 2w25419.d\data.ms

(57) TVHC as EQUIV HEPTANE (H)

12.892min (-0.006) 8.95PPBV m

response 1691411

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

ACCUTEST Laboratories JA28237

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:25:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	9.95	128	113525	10.00	PPBV	0.00
46) 1,4-DIFLUOROBENZENE	11.89	114	535099	10.00	PPBV	0.00
63) CHLOROBENZENE-D5	16.41	82	289967	10.00	PPBV	0.00
95) CHLOROBENZENE-D5(A)	16.41	82	289967	10.00	PPBV	0.00

System Monitoring Compounds

77) 4-BROMOFLUOROBENZENE	18.05	95	160477	5.43	PPBV	0.00

Spiked Amount 5.000 Range 65 - 128 Recovery = 108.60%

Target Compounds						Qvalue
2) FREON 115	5.01	119	98398	8.42	PPBV	98
3) DICHLORODIFLUOROMETHANE	5.02	85	155761	8.83	PPBV	99
4) FREON 152A	5.13	65	120128	9.92	PPBV	98
5) CHLORODIFLUOROMETHANE	5.18	67	46735	9.89	PPBV	98
6) PROPYLENE	5.22	41	193640	9.73	PPBV	99
7) PROPANE	5.24	43	69858	9.03	PPBV #	100
8) FREON 114	5.56	85	473647	10.18	PPBV	99
9) CHLOROMETHANE	5.46	52	67238	10.09	PPBV	95
10) VINYL CHLORIDE	5.70	62	214593	10.31	PPBV	99
11) 1,3-BUTADIENE	5.84	54	163990	10.29	PPBV	97
12) n-BUTANE	5.89	43	342100	9.98	PPBV	99
13) BROMOMETHANE	6.12	94	169674	10.18	PPBV	99
14) CHLOROETHANE	6.29	64	117617	10.69	PPBV	100
15) FREON 123	6.76	83	378238	10.52	PPBV #	100
16) FREON 123A	6.82	117	194335	9.90	PPBV	98
17) TRICHLOROFLUOROMETHANE	7.06	101	403057	10.22	PPBV	100
18) ISOPROPYL ALCOHOL	7.10	45	277392	9.55	PPBV	99
19) ACETONE	6.88	58	81406	9.85	PPBV	94
20) PENTANE	7.40	42	226813	9.82	PPBV	99
21) TVHC as EQUIV PENTANE	7.40	TIC	1366828m	10.32	PPBV	
22) ETHYL ETHER	7.40	74	80646	10.20	PPBV	100
23) IODOMETHANE	7.64	142	386696	9.97	PPBV	96
24) 1,1-DICHLOROETHYLENE	7.70	96	151726	9.74	PPBV	99
25) CARBON DISULFIDE	8.15	76	537219	10.10	PPBV	99
26) ETHANOL	6.40	45	64514	9.51	PPBV	99
27) BROMOETHENE	6.65	106	155534	10.15	PPBV	99
28) METHYLENE CHLORIDE	7.80	84	147881	9.45	PPBV	97
29) 3-CHLOROPROPENE	7.92	76	80305	10.19	PPBV	94
30) FREON 113	8.06	151	235551	9.59	PPBV	97
31) TRANS-1,2-DICHLOROETHYLENE	8.74	96	184255	10.00	PPBV	98
32) TERTIARY BUTYL ALCOHOL	7.70	59	300313	9.13	PPBV	97
33) METHYL TERTIARY BUTYL ETHE	8.98	73	425550	9.79	PPBV	100
34) TETRAHYDROFURAN	10.50	42	218613	9.80	PPBV	97
35) HEXANE	9.98	57	282314	10.22	PPBV	98
36) VINYL ACETATE	9.05	86	38230	10.53	PPBV #	90
37) 1,1-DICHLOROETHANE	8.94	63	360105	10.40	PPBV	100
38) METHYL ETHYL KETONE	9.32	72	81578	9.79	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	9.78	96	183702	10.18	PPBV	98
40) ETHYL ACETATE	9.95	61	49566	9.43	PPBV	97
41) CHLOROFORM	10.08	83	347711	10.55	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:25:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42) 2,4-DIMETHYLPENTANE	10.87	57	336776	10.40	PPBV		99
43) 1,1,1-TRICHLOROETHANE	11.09	97	357955	10.61	PPBV		99
44) CARBON TETRACHLORIDE	11.72	117	367087	10.48	PPBV		100
45) 1,2-DICHLOROETHANE	10.83	62	248221	10.49	PPBV		100
47) BENZENE	11.57	78	572889	10.37	PPBV		100
48) CYCLOHEXANE	11.85	84	243662	9.84	PPBV		99
49) 2,3-DIMETHYLPENTANE	12.06	71	124323	10.81	PPBV		99
50) TRICHLOROETHYLENE	12.62	95	209265	10.41	PPBV		99
51) 1,2-DICHLOROPROPANE	12.39	63	224224	10.91	PPBV		99
52) BROMODICHLOROMETHANE	12.58	83	368777	11.24	PPBV		100
53) 2,2,4-TRIMETHYLPENTANE	12.65	57	794408	10.47	PPBV		100
54) 1,4-DIOXANE	12.64	88	95658	9.51	PPBV	#	1
55) METHYL METHACRYLATE	12.78	69	164405	10.26	PPBV		96
56) HEPTANE	12.89	43	348688	10.43	PPBV		98
57) TVHC as EQUIV HEPTANE	12.89	TIC	1461125m	10.86	PPBV		
58) METHYL ISOBUTYL KETONE	13.52	43	370551	9.60	PPBV		99
59) cis-1,3-DICHLOROPROPENE	13.49	75	300170	11.22	PPBV		98
60) TOLUENE	14.52	92	370724	11.05	PPBV		100
61) trans-1,3-DICHLOROPROPENE	14.03	75	277449	10.99	PPBV		98
62) 1,1,2-TRICHLOROETHANE	14.22	83	180718	11.06	PPBV		100
64) 2-HEXANONE	14.77	58	172162	8.39	PPBV		97
65) TETRACHLOROETHYLENE	15.73	164	221867	9.73	PPBV		99
66) DIBROMOCHLOROMETHANE	14.98	129	344698	10.86	PPBV		100
67) 1,2-DIBROMOETHANE	15.25	107	284786	10.26	PPBV		100
68) OCTANE	15.52	43	436001	10.70	PPBV		98
69) 1,1,1,2-TETRACHLOROETHANE	16.43	131	228802	10.74	PPBV	#	100
70) CHLOROBENZENE	16.46	112	389098	9.84	PPBV		99
71) ETHYLBENZENE	16.85	91	698829	10.51	PPBV		100
72) m,p-XYLENE	17.04	106	509490	21.21	PPBV		98
73) o-XYLENE	17.56	106	243500	10.85	PPBV		100
74) STYRENE	17.44	104	368008	11.48	PPBV		100
75) NONANE	17.75	43	385435	11.55	PPBV		99
76) BROMOFORM	17.16	173	279560	11.34	PPBV		99
78) 1,1,2,2-TETRACHLOROETHANE	17.55	83	303504	11.23	PPBV		99
79) ISOPROPYLBENZENE	18.18	105	669575	11.39	PPBV		99
80) 2-CHLOROTOLUENE	18.71	126	150844	11.34	PPBV		98
81) n-PROPYLBENZENE	18.73	120	162535	11.53	PPBV		96
82) 4-ETHYLTOLUENE	18.88	105	535399	11.75	PPBV		100
83) 1,3,5-TRIMETHYLBENZENE	18.96	105	451937	11.83	PPBV		98
84) TERT-BUTYLBENZENE	19.41	134	109968	11.49	PPBV		97
85) 1,2,4-TRIMETHYLBENZENE	19.41	105	387272	12.10	PPBV		99
86) m-DICHLOROBENZENE	19.60	146	214042	11.22	PPBV		99
87) BENZYL CHLORIDE	19.58	91	212758	10.64	PPBV		100
88) p-DICHLOROBENZENE	19.68	146	188724	10.72	PPBV		100
89) SEC-BUTYLBENZENE	19.71	134	117301	11.59	PPBV		96
90) p-ISOPROPYLTOLUENE	19.88	134	108871	11.57	PPBV		97
91) o-DICHLOROBENZENE	20.06	146	178693	11.36	PPBV		99
92) n-BUTYLBENZENE	20.34	134	69879	11.08	PPBV		95
93) HEXACHLOROBUTADIENE	22.43	225	50365	9.09	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 10:25:58 2009 Quant Results File: M2W1070.RES

Quant Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration
DataAcq Meth : TO152W

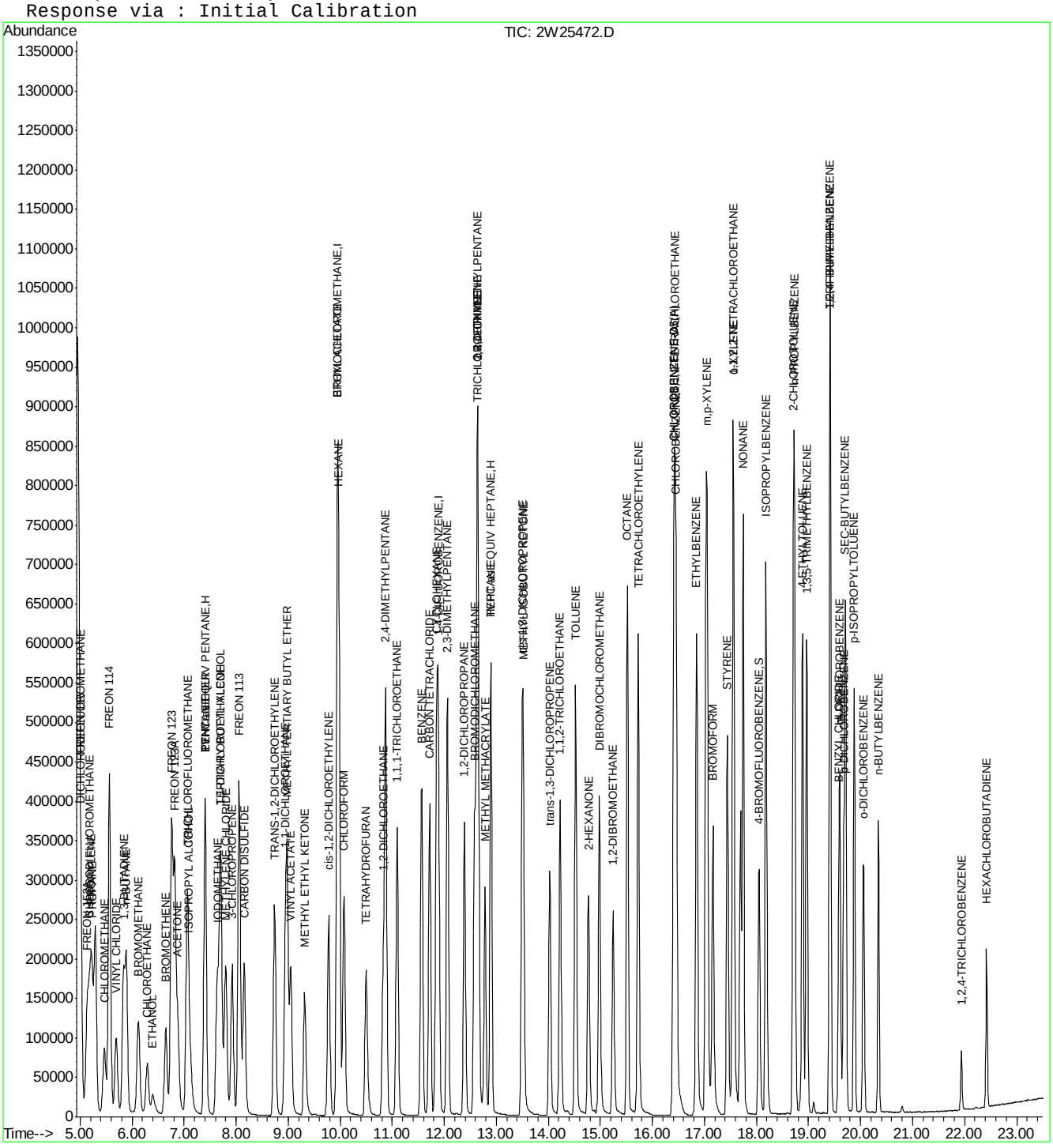
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) 1,2,4-TRICHLOROBENZENE	21.94	180	30540	8.55	PPBV	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: M2W1070.RES

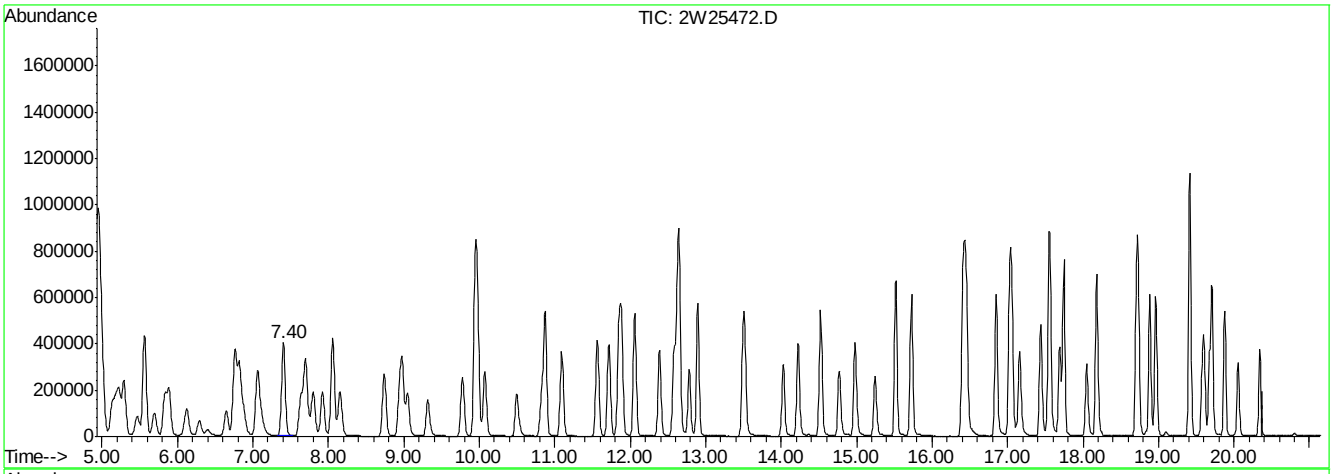
Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Initial Calibration

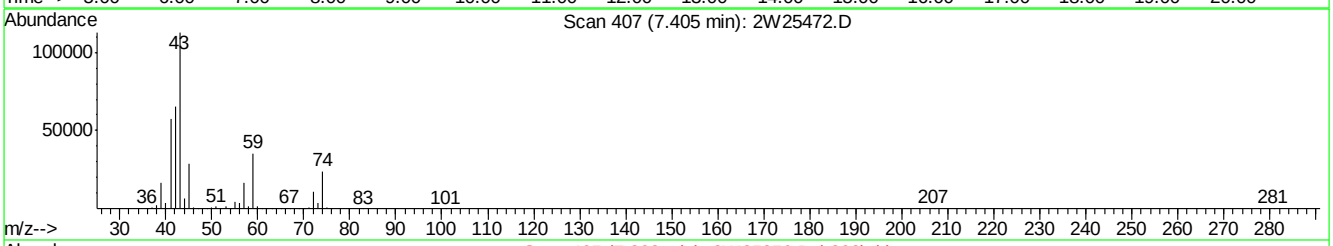


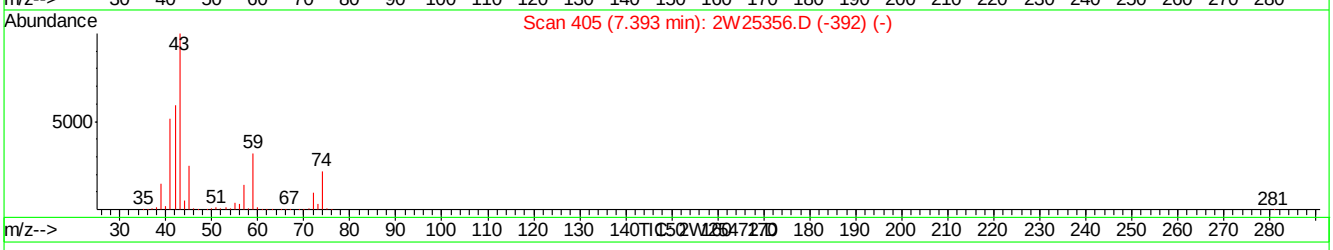
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

7.40min 10.32PPBV m

response 1366828

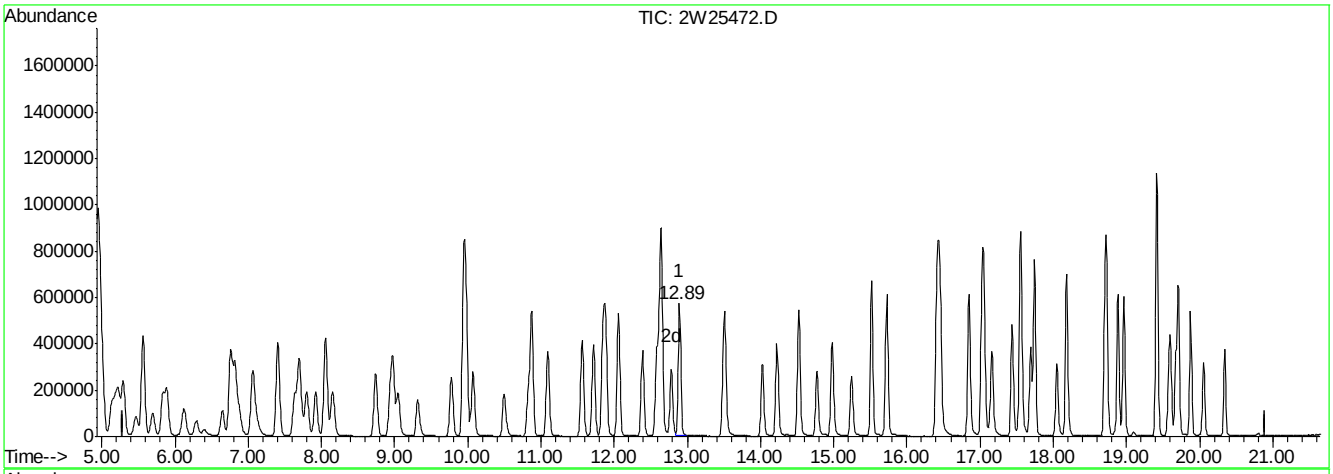
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

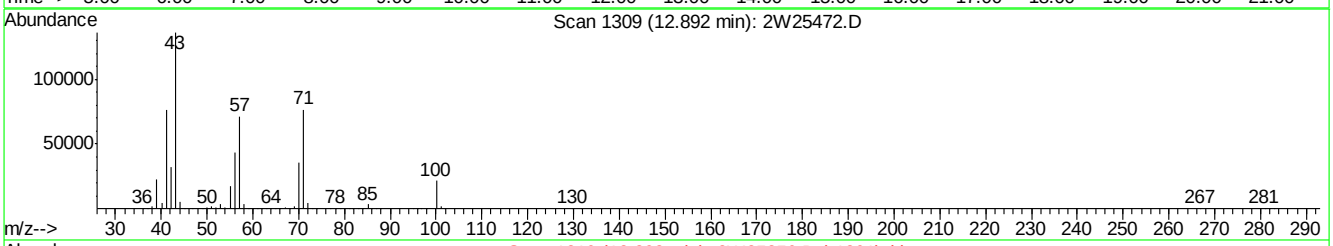
2W25472.D M2W1070.M Sun Sep 13 11:35:08 2009 MS2W

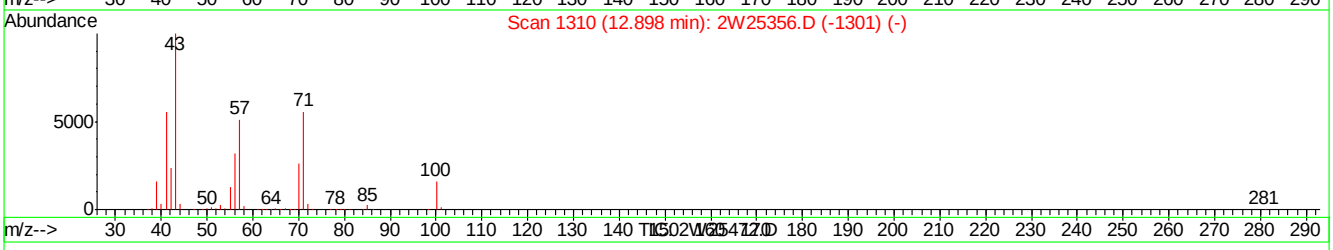
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\2W25472.D Vial: 2
Acq On : 11 Sep 2009 7:19 am Operator: YOUMINH
Sample : CC1070-10 Inst : MS2W
Misc : MS49009,V2W1075,,,,,1 Multiplr: 1.00
MS Integration Params: RTEINT4.P
Quant Time: Sep 13 11:11 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M2W1070.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1 60m X 0.32mm ID X 1.0 um
Last Update : Sun Sep 06 15:01:25 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

12.89min 10.86PPBV m

response 1461125

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

2W25472.D M2W1070.M Sun Sep 13 11:35:12 2009 MS2W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:36:22 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	76719	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.47	114	347493	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.72	82	164995	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.72	82	164995	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.36	95	95007	5.00	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 100.00%			
Target Compounds						Qvalue
2) FREON 115	4.07	85	221329	10.00	PPBV	100
3) FREON 152A	4.16	65	69900	10.00	PPBV	100
4) CHLORODIFLUOROMETHANE	4.19	67	33525	10.00	PPBV	100
5) DICHLORODIFLUOROMETHANE	4.26	85	313198	10.00	PPBV	100
6) PROPANE	4.22	43	37635	10.00	PPBV	100
7) PROPYLENE	4.21	41	106452	10.00	PPBV	100
8) FREON 114	4.44	85	318558	10.00	PPBV	100
9) CHLOROMETHANE	4.38	50	96771	10.00	PPBV	100
10) VINYL CHLORIDE	4.53	62	111173	10.00	PPBV	100
11) 1,3-BUTADIENE	4.62	54	78969	10.00	PPBV	100
12) n-BUTANE	4.64	43	159995	10.00	PPBV	100
13) BROMOMETHANE	4.82	94	107995	10.00	PPBV	100
14) CHLOROETHANE	4.93	64	57401	10.00	PPBV	100
15) FREON 123	5.26	83	241893	10.00	PPBV	100
16) FREON 123A	5.30	117	153846	10.00	PPBV	100
17) TRICHLOROFLUOROMETHANE	5.46	101	304227	10.00	PPBV	100
18) ISOPROPYL ALCOHOL	5.53	45	136533	10.00	PPBV	100
19) ACETONE	5.35	58	41175	10.00	PPBV	100
20) PENTANE	5.67	42	97687	10.00	PPBV	100
21) TVHC as EQUIV PENTANE	5.67	TIC	642427m	10.00	PPBV	
22) ETHYL ETHER	5.70	74	42038	10.00	PPBV	100
23) IODOMETHANE	5.88	142	298912	10.00	PPBV	100
24) 1,1-DICHLOROETHYLENE	5.93	96	94529	10.00	PPBV	100
25) CARBON DISULFIDE	6.26	76	283040	10.00	PPBV	100
26) ETHANOL	5.04	45	28200	10.00	PPBV	100
27) BROMOETHENE	5.18	106	106089	10.00	PPBV	100
28) METHYLENE CHLORIDE	6.04	84	84296	10.00	PPBV	100
29) 3-CHLOROPROPENE	6.10	76	42196	10.00	PPBV	100
30) FREON 113	6.19	151	184152	10.00	PPBV	100
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	101383	10.00	PPBV	100
32) TERTIARY BUTYL ALCOHOL	5.95	59	186242	10.00	PPBV	100
33) METHYL TERTIARY BUTYL ETHE	6.89	73	253976	10.00	PPBV	100
34) TETRAHYDROFURAN	8.20	72	38927	10.00	PPBV	100
35) HEXANE	7.67	57	136915	10.00	PPBV	100
36) VINYL ACETATE	7.00	86	19286	10.00	PPBV	100
37) 1,1-DICHLOROETHANE	6.90	63	177896	10.00	PPBV	100
38) METHYL ETHYL KETONE	7.21	72	37773	10.00	PPBV	100
39) cis-1,2-DICHLOROETHYLENE	7.63	96	100455	10.00	PPBV	100
40) DIISOPROPYL ETHER	7.68	45	245083	10.00	PPBV	100
41) ETHYL ACETATE	7.76	61	22393	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:36:22 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.86	83	214724	10.00	PPBV	100
43)	2,4-DIMETHYLPENTANE	8.43	57	155660	10.00	PPBV	100
44)	1,1,1-TRICHLOROETHANE	8.71	97	235001	10.00	PPBV	100
45)	CARBON TETRACHLORIDE	9.28	117	256555	10.00	PPBV	100
46)	1,2-DICHLOROETHANE	8.49	62	146111	10.00	PPBV	100
48)	BENZENE	9.15	78	283054	10.00	PPBV	100
49)	CYCLOHEXANE	9.32	56	138412	10.00	PPBV	100
50)	2,3-DIMETHYLPENTANE	9.50	71	60113	10.00	PPBV	100
51)	TRICHLOROETHYLENE	10.11	95	134954	10.00	PPBV	100
52)	1,2-DICHLOROPROPANE	9.87	63	98832	10.00	PPBV	100
53)	BROMODICHLOROMETHANE	10.09	83	224942	10.00	PPBV	100
54)	2,2,4-TRIMETHYLPENTANE	10.03	57	413418	10.00	PPBV	100
55)	1,4-DIOXANE	10.14	88	56590	10.00	PPBV	100
56)	HEPTANE	10.28	43	158088	10.00	PPBV	100
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1097372m	10.00	PPBV	
58)	METHYL METHACRYLATE	10.30	69	80698	10.00	PPBV	100
59)	METHYL ISOBUTYL KETONE	10.92	43	164035	10.00	PPBV	100
60)	cis-1,3-DICHLOROPROPENE	10.95	75	158867	10.00	PPBV	100
61)	TOLUENE	11.89	92	203732	10.00	PPBV	100
62)	trans-1,3-DICHLOROPROPENE	11.46	75	153283	10.00	PPBV	100
63)	1,1,2-TRICHLOROETHANE	11.63	83	95463	10.00	PPBV	100
65)	2-HEXANONE	12.12	43	154088	10.00	PPBV	100
66)	TETRACHLOROETHYLENE	13.03	164	171454	10.00	PPBV	100
67)	DIBROMOCHLOROMETHANE	12.35	129	233092	10.00	PPBV	100
68)	1,2-DIBROMOETHANE	12.55	107	175864	10.00	PPBV	100
69)	OCTANE	12.79	43	208351	10.00	PPBV	100
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	167703	10.00	PPBV	100
71)	CHLOROBENZENE	13.76	112	268602	10.00	PPBV	100
72)	ETHYLBENZENE	14.12	91	420348	10.00	PPBV	100
73)	m,p-XYLENE	14.31	106	325015	20.00	PPBV	100
74)	o-XYLENE	14.83	106	156757	10.00	PPBV	100
75)	STYRENE	14.72	104	217290	10.00	PPBV	100
76)	NONANE	14.99	43	201568	10.00	PPBV	100
77)	BROMOFORM	14.44	173	216646	10.00	PPBV	100
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	185005	10.00	PPBV	100
80)	1,2,3-TRICHLOROPROPANE	14.98	75	147889	10.00	PPBV	100
81)	ISOPROPYLBENZENE	15.47	105	450720	10.00	PPBV	100
82)	2-CHLOROTOLUENE	16.04	126	106326	10.00	PPBV	100
83)	n-PROPYLBENZENE	16.06	120	116361	10.00	PPBV	100
84)	4-ETHYLTOLUENE	16.23	105	385204	10.00	PPBV	100
85)	1,3,5-TRIMETHYLBENZENE	16.32	105	323630	10.00	PPBV	100
86)	tert-BUTYLBENZENE	16.79	134	83684	10.00	PPBV	100
87)	1,2,4-TRIMETHYLBENZENE	16.81	105	296168	10.00	PPBV	100
88)	m-DICHLOROBENZENE	17.01	146	190133	10.00	PPBV	100
89)	BENZYL CHLORIDE	17.01	91	182480	10.00	PPBV	100
90)	p-DICHLOROBENZENE	17.10	146	175162	10.00	PPBV	100
91)	sec-BUTYLBENZENE	17.11	134	96470	10.00	PPBV	100
92)	p-ISOPROPYLTOLUENE	17.30	134	93213	10.00	PPBV	100
93)	o-DICHLOROBENZENE	17.51	146	164781	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:36:22 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

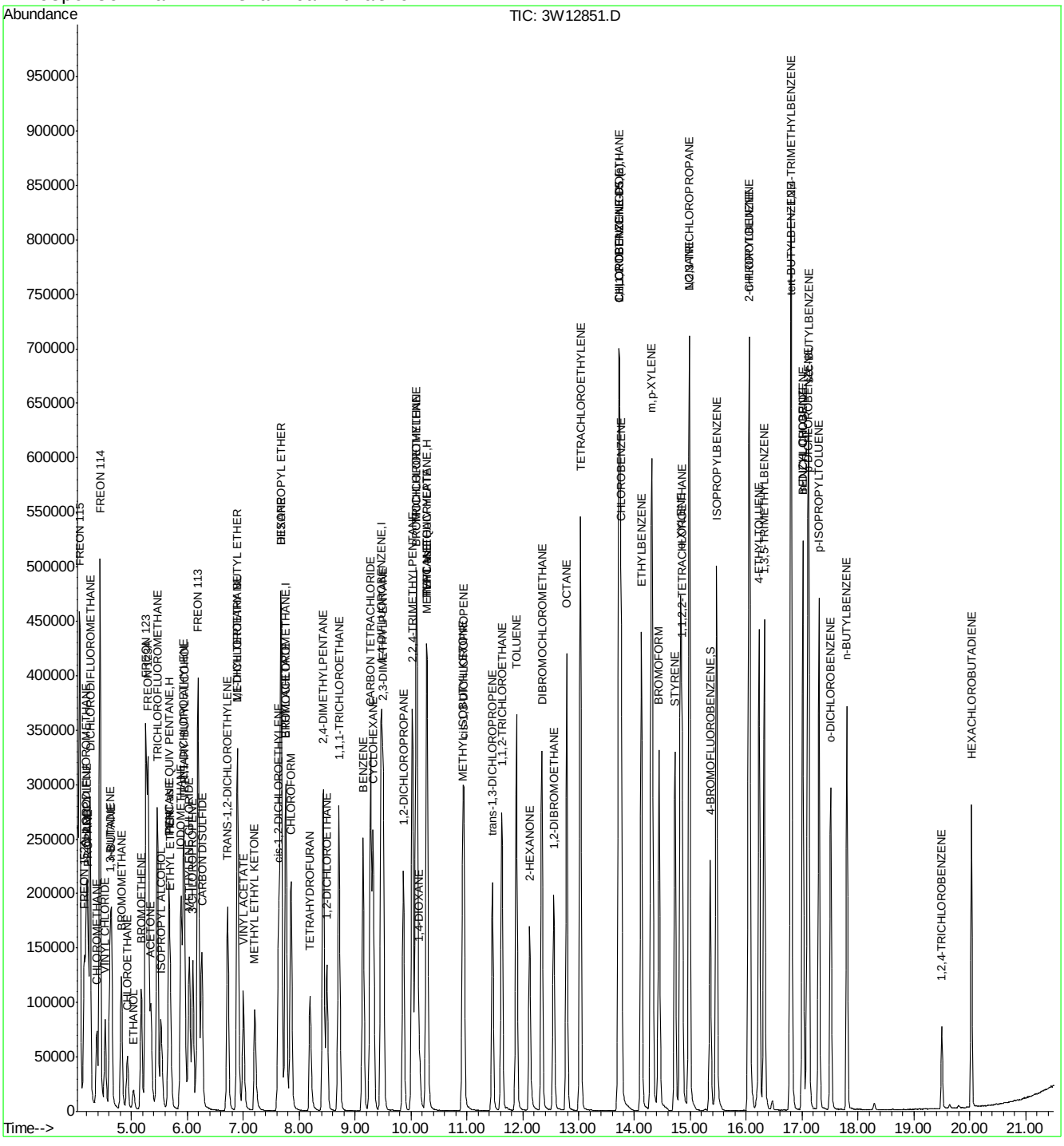
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	68833	10.00	PPBV	100
95)	HEXACHLOROBUTADIENE	20.03	225	61835	10.00	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.50	180	29859	10.00	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:36 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

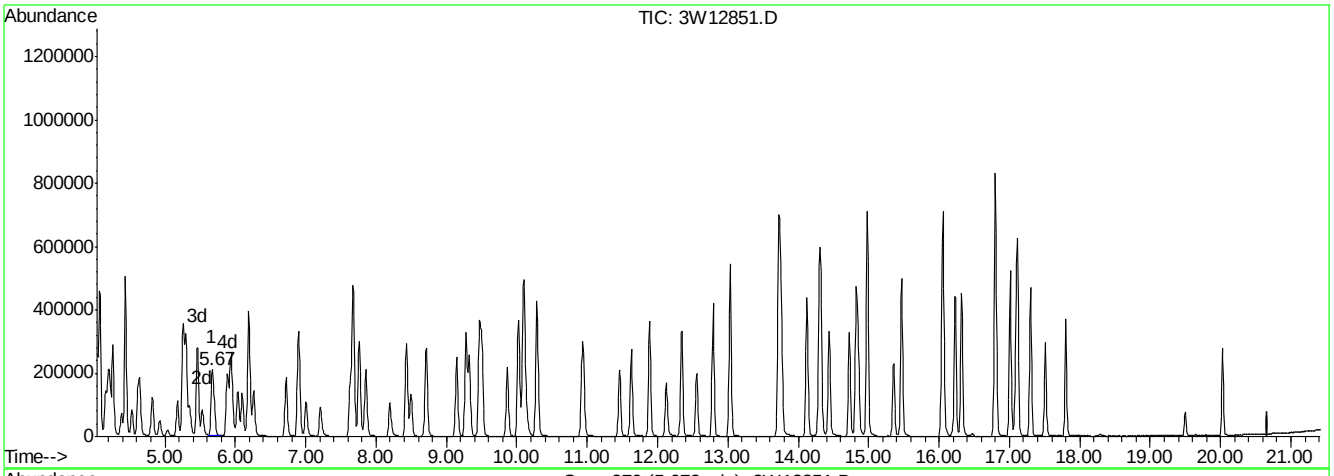


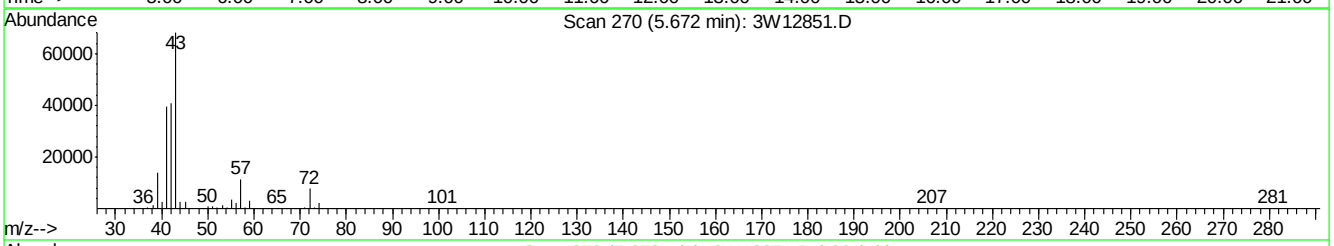
ACCUTEST Laboratories JA28237

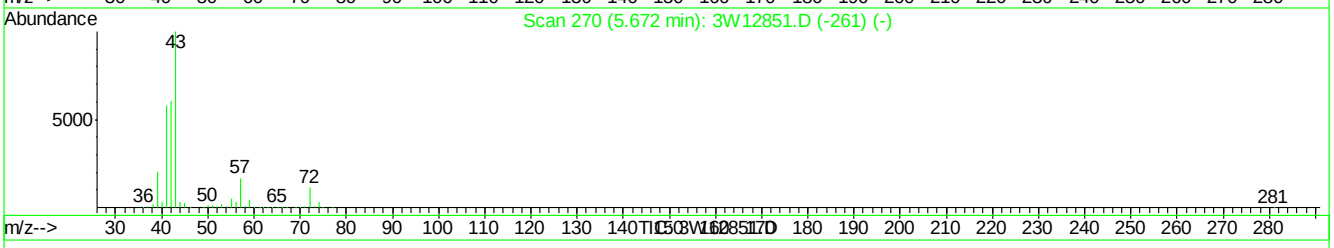
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:36 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 10.00PPBV m

response 642427

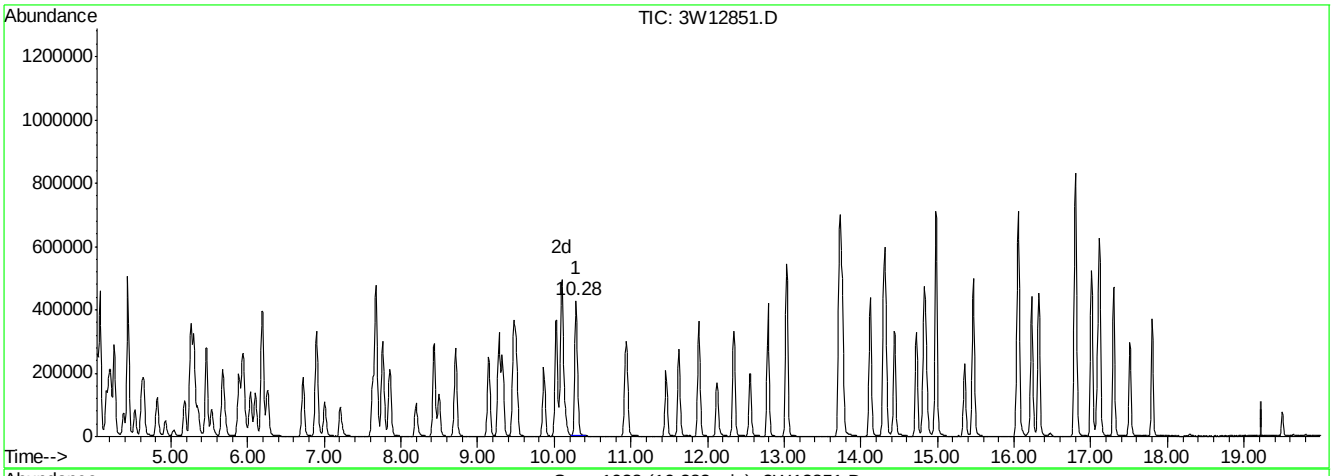
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.06#
0.00	0.00	0.05#
0.00	0.00	0.00

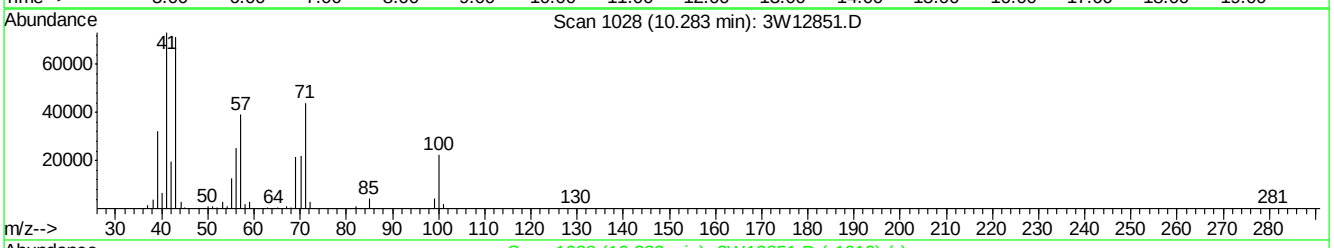
3W12851.D M3W523.M Tue Oct 06 12:25:32 2009 MS3W

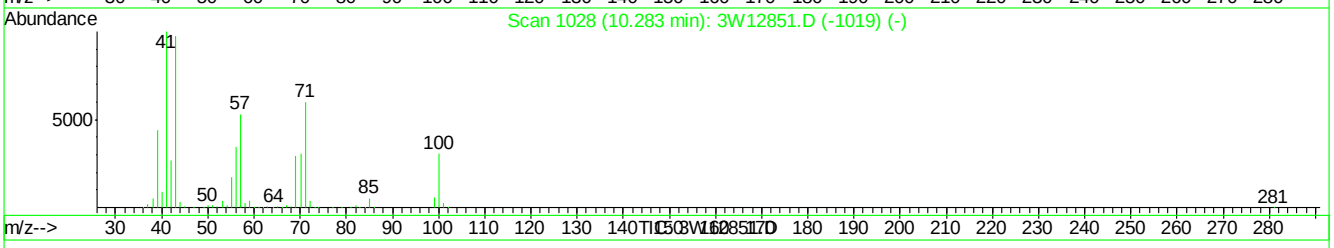
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12851.D Vial: 2
Acq On : 2 Oct 2009 7:46 pm Operator: YOUMINH
Sample : ICC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:36 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.28min 10.00PPBV m

response 1097372

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.03#
0.00	0.00	0.03#
0.00	0.00	0.00

3W12851.D M3W523.M Tue Oct 06 12:25:35 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:30 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	78237	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	349998	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	141719	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	141719	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	72931	4.47	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 89.40%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	11295	0.50	PPBV	99
3) FREON 152A	4.16	65	3556	0.50	PPBV	93
4) CHLORODIFLUOROMETHANE	4.19	67	1740	0.51	PPBV	98
5) DICHLORODIFLUOROMETHANE	4.26	85	15497	0.49	PPBV	96
6) PROPANE	4.22	43	1960	0.51	PPBV	100
7) PROPYLENE	4.21	41	5507	0.51	PPBV	93
8) FREON 114	4.44	85	16759	0.52	PPBV	99
9) CHLOROMETHANE	4.38	50	5111	0.52	PPBV	90
10) VINYL CHLORIDE	4.53	62	5732	0.51	PPBV	98
11) 1,3-BUTADIENE	4.62	54	4050	0.50	PPBV	96
12) n-BUTANE	4.64	43	9330	0.57	PPBV	98
13) BROMOMETHANE	4.82	94	5734	0.52	PPBV	96
14) CHLOROETHANE	4.92	64	3009	0.51	PPBV	97
15) FREON 123	5.25	83	13336	0.54	PPBV	99
16) FREON 123A	5.29	117	8455	0.54	PPBV	100
17) TRICHLOROFLUOROMETHANE	5.46	101	15856	0.51	PPBV	99
18) ISOPROPYL ALCOHOL	5.54	45	7488	0.54	PPBV	96
19) ACETONE	5.36	58	2251	0.54	PPBV	100
20) PENTANE	5.67	42	5447	0.55	PPBV	98
21) TVHC as EQUIV PENTANE	5.67	TIC	25570m	0.39	PPBV	
22) ETHYL ETHER	5.71	74	2285	0.53	PPBV	100
23) IODOMETHANE	5.88	142	14851	0.49	PPBV	98
24) 1,1-DICHLOROETHYLENE	5.93	96	5109	0.53	PPBV	93
25) CARBON DISULFIDE	6.25	76	14845	0.51	PPBV	98
26) ETHANOL	5.04	45	2083	0.72	PPBV	97
27) BROMOETHENE	5.17	106	5809	0.54	PPBV	98
28) METHYLENE CHLORIDE	6.02	84	4830	0.56	PPBV	96
29) 3-CHLOROPROPENE	6.08	76	2144	0.50	PPBV	96
30) FREON 113	6.19	151	9374	0.50	PPBV	98
31) TRANS-1,2-DICHLOROETHYLENE	6.71	96	5087	0.49	PPBV	100
32) TERTIARY BUTYL ALCOHOL	5.96	59	9795	0.52	PPBV	96
33) METHYL TERTIARY BUTYL ETHE	6.90	73	12963	0.50	PPBV	96
34) TETRAHYDROFURAN	8.23	72	1848	0.47	PPBV	98
35) HEXANE	7.66	57	6771	0.48	PPBV	95
36) VINYL ACETATE	7.00	86	823	0.42	PPBV #	96
37) 1,1-DICHLOROETHANE	6.89	63	9165	0.51	PPBV	100
38) METHYL ETHYL KETONE	7.23	72	1778	0.46	PPBV #	84
39) cis-1,2-DICHLOROETHYLENE	7.62	96	4873	0.48	PPBV	98
40) DIISOPROPYL ETHER	7.67	45	12783	0.51	PPBV	97
41) ETHYL ACETATE	7.77	61	1199	0.53	PPBV #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:30 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.84	83	10559	0.48	PPBV		98
43)	2,4-DIMETHYLPENTANE	8.43	57	7761	0.49	PPBV		96
44)	1,1,1-TRICHLOROETHANE	8.70	97	11405	0.48	PPBV		99
45)	CARBON TETRACHLORIDE	9.27	117	11733	0.45	PPBV		99
46)	1,2-DICHLOROETHANE	8.48	62	6992	0.47	PPBV		100
48)	BENZENE	9.13	78	14593	0.51	PPBV		99
49)	CYCLOHEXANE	9.32	56	6910	0.50	PPBV		98
50)	2,3-DIMETHYLPENTANE	9.50	71	3340	0.55	PPBV	#	64
51)	TRICHLOROETHYLENE	10.10	95	6307	0.46	PPBV		98
52)	1,2-DICHLOROPROPANE	9.86	63	5071	0.51	PPBV		97
53)	BROMODICHLOROMETHANE	10.08	83	9965	0.44	PPBV		97
54)	2,2,4-TRIMETHYLPENTANE	10.01	57	21288	0.51	PPBV		100
55)	1,4-DIOXANE	10.19	88	2705	0.47	PPBV		96
56)	HEPTANE	10.28	43	7942	0.50	PPBV		98
57)	TVHC as EQUIV HEPTANE	10.28	TIC	50813m	0.46	PPBV		
58)	METHYL METHACRYLATE	10.30	69	3046	0.37	PPBV	#	71
59)	METHYL ISOBUTYL KETONE	10.93	43	6951	0.42	PPBV		95
60)	cis-1,3-DICHLOROPROPENE	10.94	75	6508	0.41	PPBV		95
61)	TOLUENE	11.88	92	9515	0.46	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	5851	0.38	PPBV		97
63)	1,1,2-TRICHLOROETHANE	11.62	83	4622	0.48	PPBV		98
65)	2-HEXANONE	12.14	43	5854	0.44	PPBV		95
66)	TETRACHLOROETHYLENE	13.03	164	7748	0.53	PPBV		99
67)	DIBROMOCHLOROMETHANE	12.33	129	8421	0.42	PPBV		98
68)	1,2-DIBROMOETHANE	12.55	107	6493	0.43	PPBV		97
69)	OCTANE	12.78	43	10464	0.58	PPBV		96
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	8284	0.58	PPBV		98
71)	CHLOROBENZENE	13.76	112	11798	0.51	PPBV		97
72)	ETHYLBENZENE	14.12	91	19276	0.53	PPBV		100
73)	m,p-XYLENE	14.31	106	14658	1.05	PPBV		96
74)	o-XYLENE	14.82	106	7365	0.55	PPBV		97
75)	STYRENE	14.72	104	6138	0.33	PPBV		98
76)	NONANE	14.97	43	11359	0.66	PPBV		96
77)	BROMOFORM	14.43	173	7038	0.38	PPBV		96
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	10251	0.65	PPBV		99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	7882	0.62	PPBV		97
81)	ISOPROPYLBENZENE	15.46	105	23741	0.61	PPBV		97
82)	2-CHLOROTOLUENE	16.04	126	4963	0.54	PPBV		97
83)	n-PROPYLBENZENE	16.06	120	5208	0.52	PPBV		97
84)	4-ETHYLTOLUENE	16.23	105	17438	0.53	PPBV		98
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	17318	0.62	PPBV		99
86)	tert-BUTYLBENZENE	16.79	134	4773	0.66	PPBV		97
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	14991	0.59	PPBV		92
88)	m-DICHLOROBENZENE	17.00	146	8270	0.51	PPBV		98
89)	BENZYL CHLORIDE	17.00	91	7113	0.45	PPBV		99
90)	p-DICHLOROBENZENE	17.08	146	7652	0.51	PPBV		98
91)	sec-BUTYLBENZENE	17.11	134	5172	0.62	PPBV	#	90
92)	p-ISOPROPYLTOLUENE	17.30	134	4865	0.61	PPBV		99
93)	o-DICHLOROBENZENE	17.51	146	8103	0.57	PPBV		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:30 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

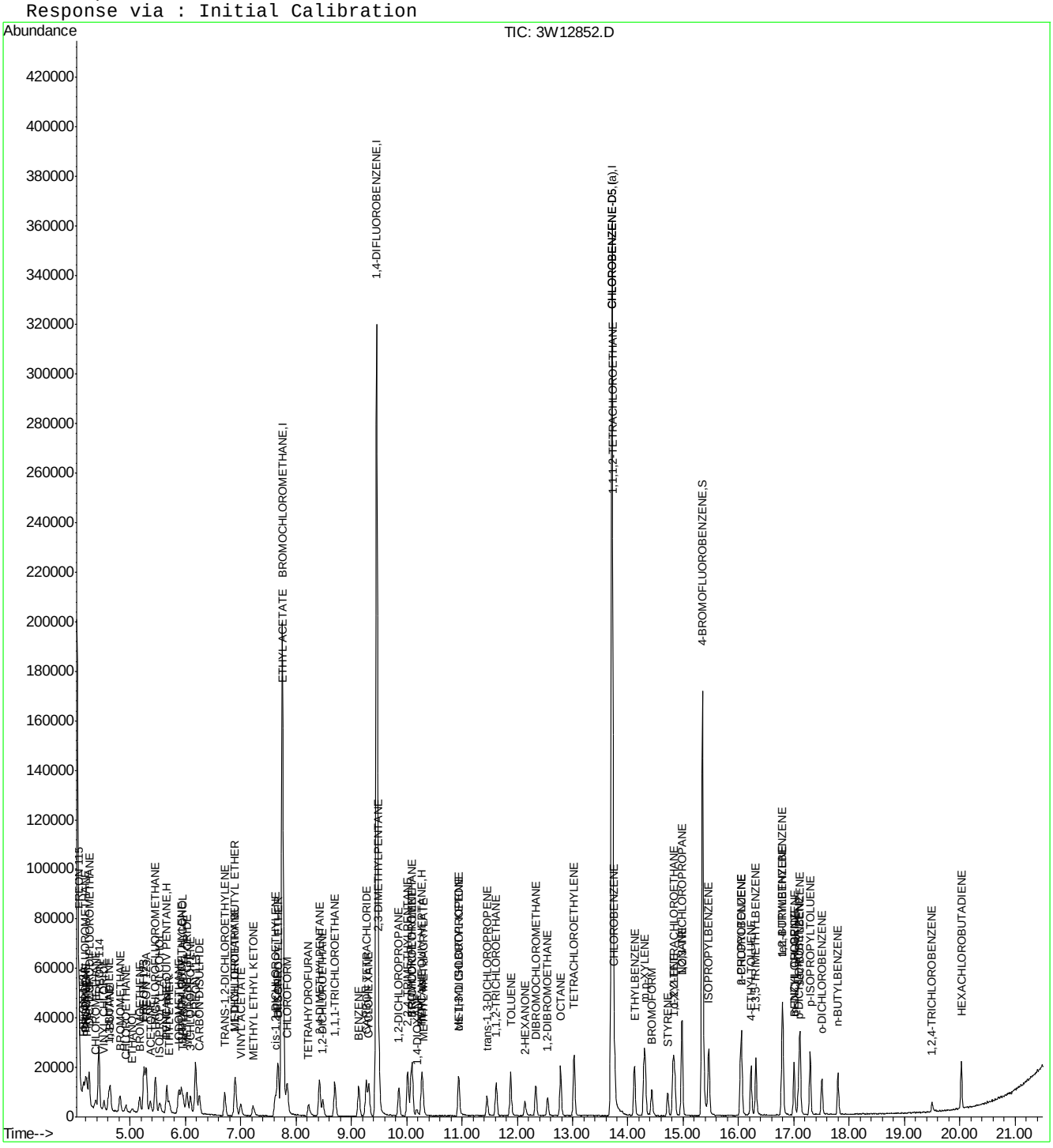
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	3141	0.53	PPBV	94
95)	HEXACHLOROBUTADIENE	20.03	225	4289	0.81	PPBV	98
96)	1,2,4-TRICHLOROBENZENE	19.50	180	1770	0.69	PPBV	94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:37 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

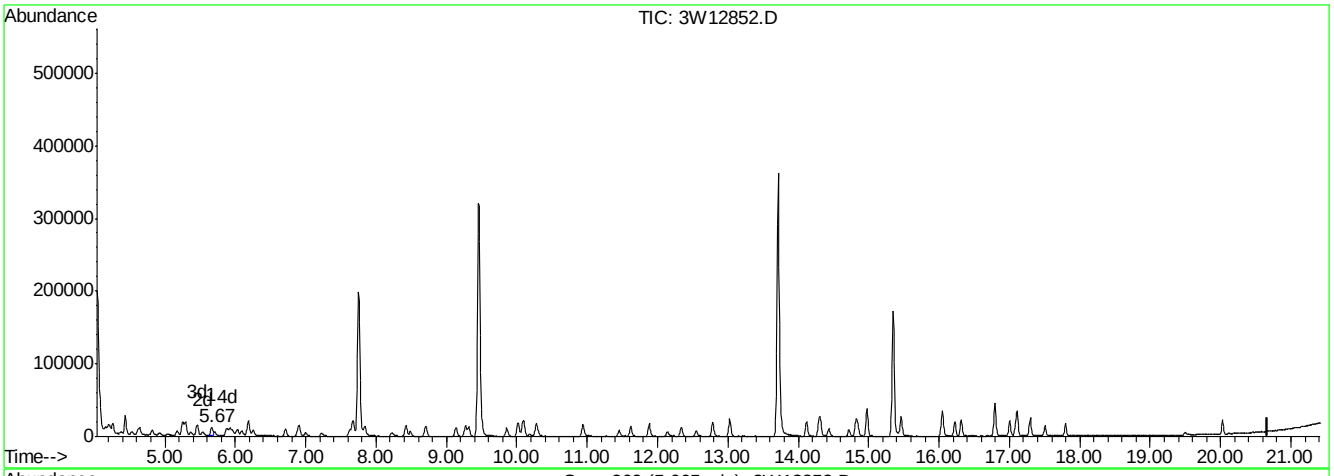


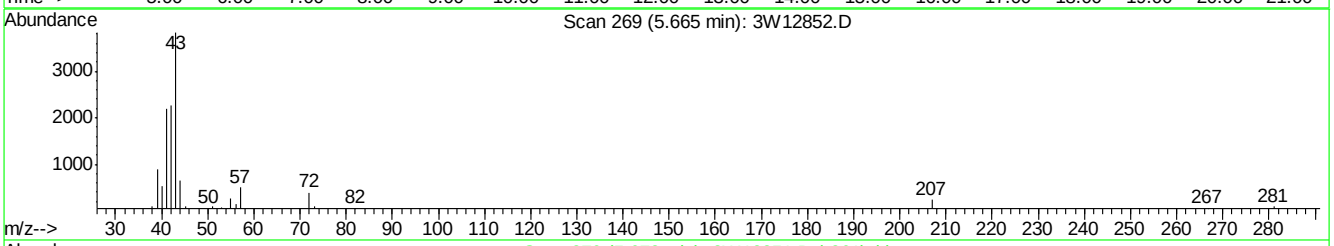
ACCUTEST Laboratories JA28237

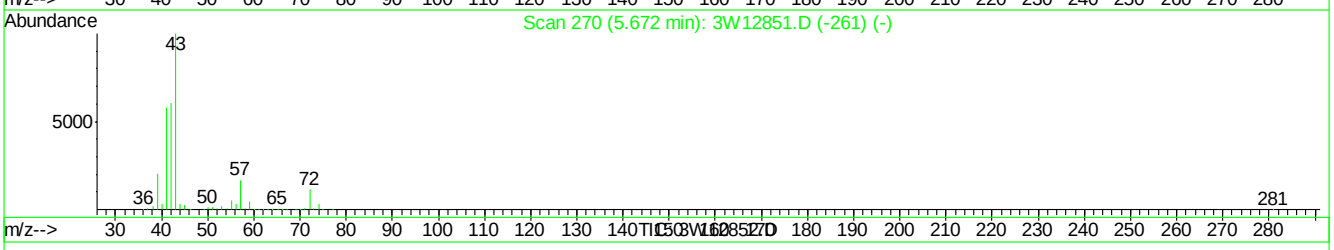
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:37 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 0.39PPBV m

response 25570

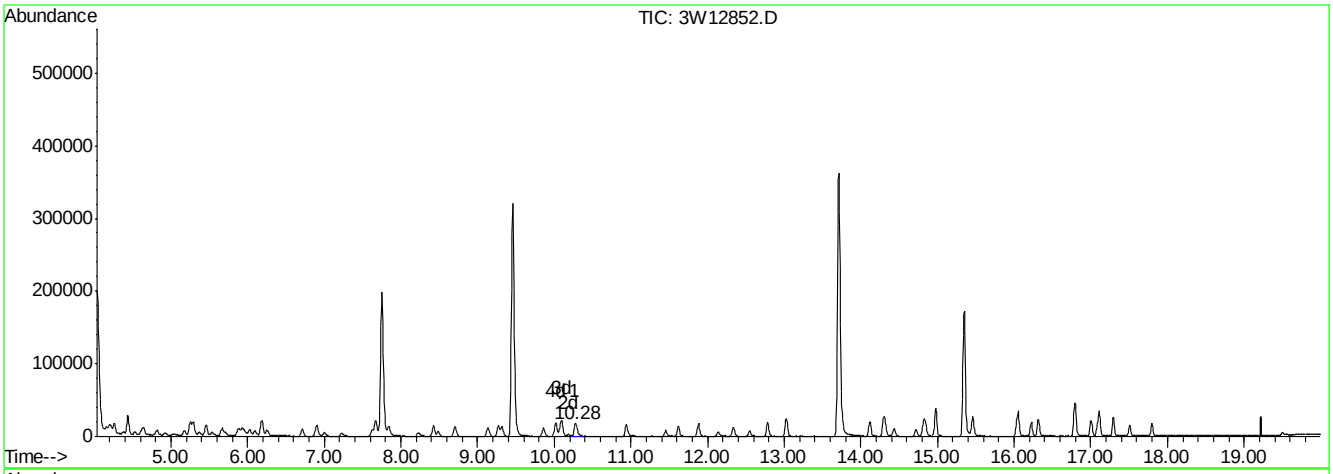
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

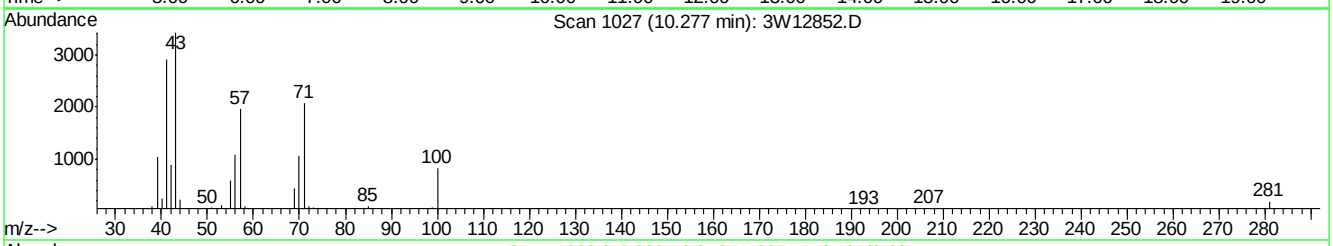
3W12852.D M3W523.M Tue Oct 06 12:25:44 2009 MS3W

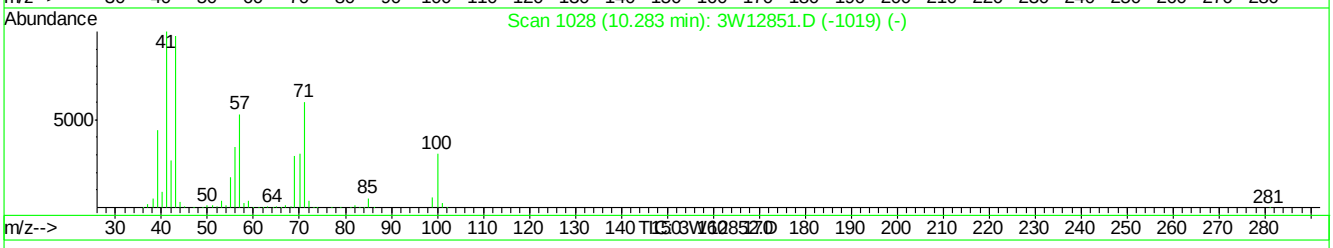
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12852.D Vial: 1
Acq On : 2 Oct 2009 8:26 pm Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:37 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.28min 0.46PPBV m

response 50813

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12852.D M3W523.M Tue Oct 06 12:25:46 2009 MS3W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 10/12/09 11:21

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:33 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	85709	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	366776	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	141020	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	141269	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	69199	4.26	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 85.20%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	4964	0.20	PPBV	99
3) FREON 152A	4.15	65	1448	0.19	PPBV	85
4) CHLORODIFLUOROMETHANE	4.19	67	767	0.20	PPBV	94
5) DICHLORODIFLUOROMETHANE	4.26	85	6655	0.19	PPBV	99
6) PROPANE	4.23	43	871m	0.21	PPBV	
7) PROPYLENE	4.21	41	2510	0.21	PPBV	91
8) FREON 114	4.44	85	7279	0.20	PPBV	97
9) CHLOROMETHANE	4.38	50	2413	0.22	PPBV	97
10) VINYL CHLORIDE	4.53	62	2451	0.20	PPBV	99
11) 1,3-BUTADIENE	4.61	54	1693	0.19	PPBV	91
12) n-BUTANE	4.64	43	4274	0.24	PPBV	93
13) BROMOMETHANE	4.82	94	2356	0.20	PPBV	89
14) CHLOROETHANE	4.92	64	1332	0.21	PPBV	96
15) FREON 123	5.25	83	5290	0.20	PPBV #	76
16) FREON 123A	5.30	117	3261	0.19	PPBV	92
17) TRICHLOROFLUOROMETHANE	5.46	101	6502	0.19	PPBV	99
18) ISOPROPYL ALCOHOL	5.56	45	2895	0.19	PPBV	97
19) ACETONE	5.39	58	836	0.18	PPBV #	79
20) PENTANE	5.67	42	2653	0.24	PPBV	88
21) TVHC as EQUIV PENTANE	5.67	TIC	10857m	0.15	PPBV	
22) ETHYL ETHER	5.73	74	776	0.17	PPBV	95
23) IODOMETHANE	5.88	142	6165	0.18	PPBV	98
24) 1,1-DICHLOROETHYLENE	5.93	96	2269	0.21	PPBV #	86
25) CARBON DISULFIDE	6.26	76	6523	0.21	PPBV	97
26) ETHANOL	5.06	45	1047	0.33	PPBV	85
27) BROMOETHENE	5.17	106	2327	0.20	PPBV	100
28) METHYLENE CHLORIDE	6.03	84	2452	0.26	PPBV	92
29) 3-CHLOROPROPENE	6.10	76	929	0.20	PPBV #	87
30) FREON 113	6.19	151	3853	0.19	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	2189	0.19	PPBV	99
32) TERTIARY BUTYL ALCOHOL	5.98	59	3357	0.16	PPBV	82
33) METHYL TERTIARY BUTYL ETHE	6.92	73	4696	0.17	PPBV	93
34) TETRAHYDROFURAN	8.24	72	553	0.13	PPBV #	72
35) HEXANE	7.67	57	2916	0.19	PPBV	96
36) VINYL ACETATE	7.02	86	207	0.10	PPBV #	1
37) 1,1-DICHLOROETHANE	6.89	63	3799	0.19	PPBV	99
38) METHYL ETHYL KETONE	7.25	72	457	0.11	PPBV #	71
39) cis-1,2-DICHLOROETHYLENE	7.62	96	2134	0.19	PPBV	98
40) DIISOPROPYL ETHER	7.69	45	4349	0.16	PPBV	94
41) ETHYL ACETATE	7.79	61	429	0.17	PPBV #	71

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:33 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.84	83	4529	0.19	PPBV		97
43)	2,4-DIMETHYLPENTANE	8.43	57	3354	0.19	PPBV		98
44)	1,1,1-TRICHLOROETHANE	8.71	97	4774	0.18	PPBV		99
45)	CARBON TETRACHLORIDE	9.27	117	4802	0.17	PPBV		95
46)	1,2-DICHLOROETHANE	8.49	62	2738	0.17	PPBV		96
48)	BENZENE	9.14	78	5940	0.20	PPBV		96
49)	CYCLOHEXANE	9.32	56	3022	0.21	PPBV		85
50)	2,3-DIMETHYLPENTANE	9.50	71	1702	0.27	PPBV	#	1
51)	TRICHLOROETHYLENE	10.10	95	2712	0.19	PPBV		97
52)	1,2-DICHLOROPROPANE	9.86	63	2104	0.20	PPBV		90
53)	BROMODICHLOROMETHANE	10.09	83	3798	0.16	PPBV		97
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	9029	0.21	PPBV		99
55)	1,4-DIOXANE	10.22	88	1084	0.18	PPBV		86
56)	HEPTANE	10.28	43	3462	0.21	PPBV		94
57)	TVHC as EQUIV HEPTANE	10.28	TIC	19841m	0.17	PPBV		
58)	METHYL METHACRYLATE	10.31	69	897	0.11	PPBV	#	1
59)	METHYL ISOBUTYL KETONE	10.96	43	2269	0.13	PPBV		87
60)	cis-1,3-DICHLOROPROPENE	10.94	75	2680	0.16	PPBV		95
61)	TOLUENE	11.88	92	3573	0.17	PPBV		96
62)	trans-1,3-DICHLOROPROPENE	11.46	75	2266	0.14	PPBV		94
63)	1,1,2-TRICHLOROETHANE	11.62	83	1697	0.17	PPBV		97
65)	2-HEXANONE	12.16	43	1932	0.15	PPBV		90
66)	TETRACHLOROETHYLENE	13.03	164	3433	0.23	PPBV		98
67)	DIBROMOCHLOROMETHANE	12.34	129	3065	0.15	PPBV		99
68)	1,2-DIBROMOETHANE	12.56	107	2477	0.16	PPBV	#	98
69)	OCTANE	12.79	43	4138	0.23	PPBV		96
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	3023	0.21	PPBV		97
71)	CHLOROBENZENE	13.76	112	4564	0.20	PPBV		96
72)	ETHYLBENZENE	14.12	91	6823	0.19	PPBV		99
73)	m,p-XYLENE	14.31	106	5121	0.37	PPBV		90
74)	o-XYLENE	14.82	106	2391	0.18	PPBV		97
75)	STYRENE	14.72	104	1916	0.10	PPBV		98
76)	NONANE	14.98	43	3862	0.22	PPBV		97
77)	BROMOFORM	14.44	173	2370	0.13	PPBV		98
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	3477	0.22	PPBV		98
80)	1,2,3-TRICHLOROPROPANE	14.97	75	2670	0.21	PPBV		91
81)	ISOPROPYLBENZENE	15.47	105	7431	0.19	PPBV		98
82)	2-CHLOROTOLUENE	16.04	126	1669	0.18	PPBV		95
83)	n-PROPYLBENZENE	16.05	120	1609	0.16	PPBV		99
84)	4-ETHYLTOLUENE	16.23	105	5190	0.16	PPBV		97
85)	1,3,5-TRIMETHYLBENZENE	16.32	105	5145	0.19	PPBV		99
86)	tert-BUTYLBENZENE	16.79	134	1406	0.20	PPBV		100
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	4514	0.18	PPBV		91
88)	m-DICHLOROBENZENE	17.01	146	2972	0.18	PPBV		99
89)	BENZYL CHLORIDE	17.01	91	2663	0.17	PPBV		95
90)	p-DICHLOROBENZENE	17.09	146	3154	0.21	PPBV		95
91)	sec-BUTYLBENZENE	17.11	134	1556	0.19	PPBV		93
92)	p-ISOPROPYLTOLUENE	17.30	134	1402	0.18	PPBV		98
93)	o-DICHLOROBENZENE	17.51	146	2898	0.21	PPBV		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:33 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

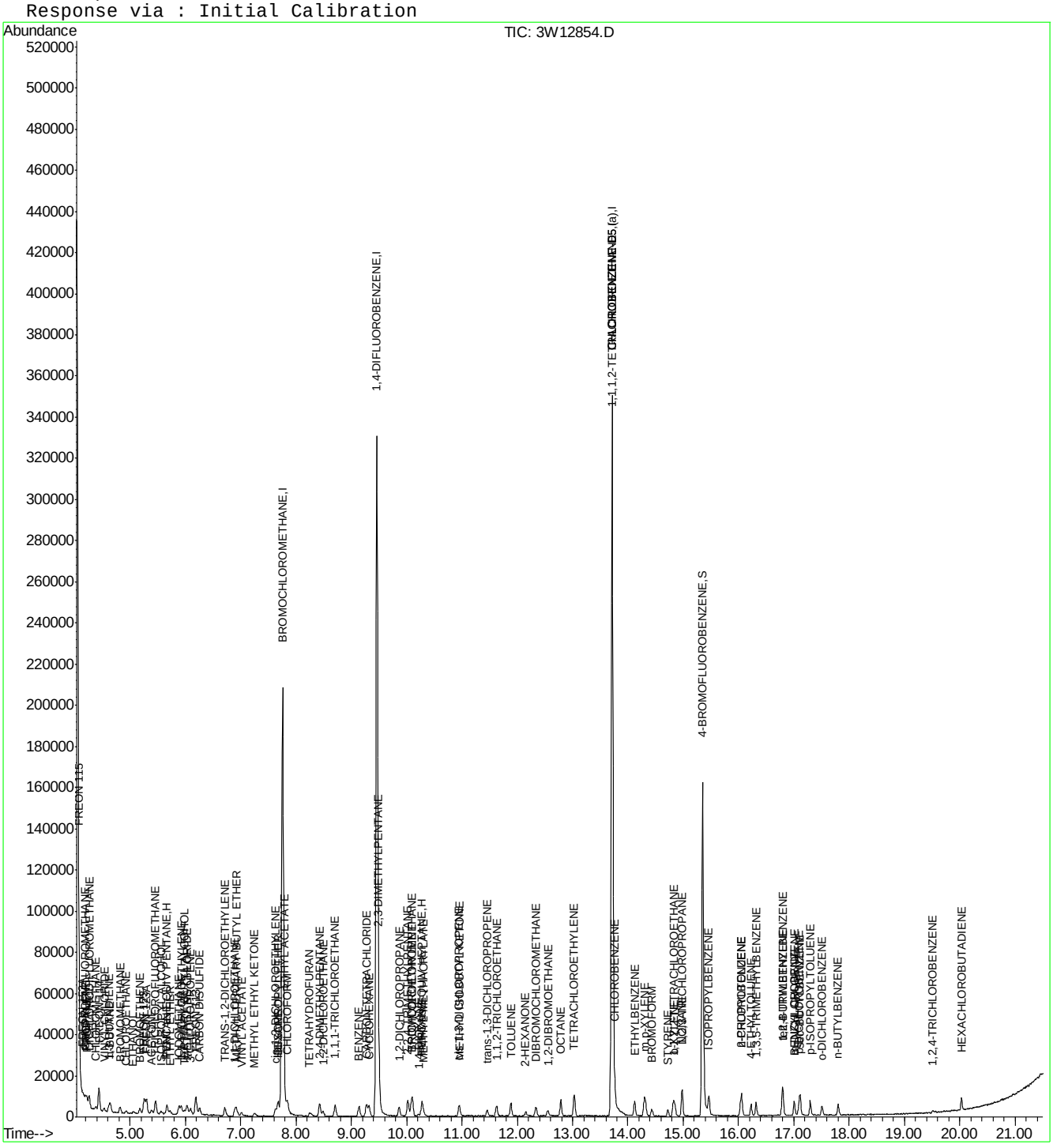
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
94)	n-BUTYLBENZENE	17.80	134	934	0.16	PPBV	#	82
95)	HEXACHLOROBUTADIENE	20.03	225	1461	0.28	PPBV		93
96)	1,2,4-TRICHLOROBENZENE	19.51	180	499	0.20	PPBV		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

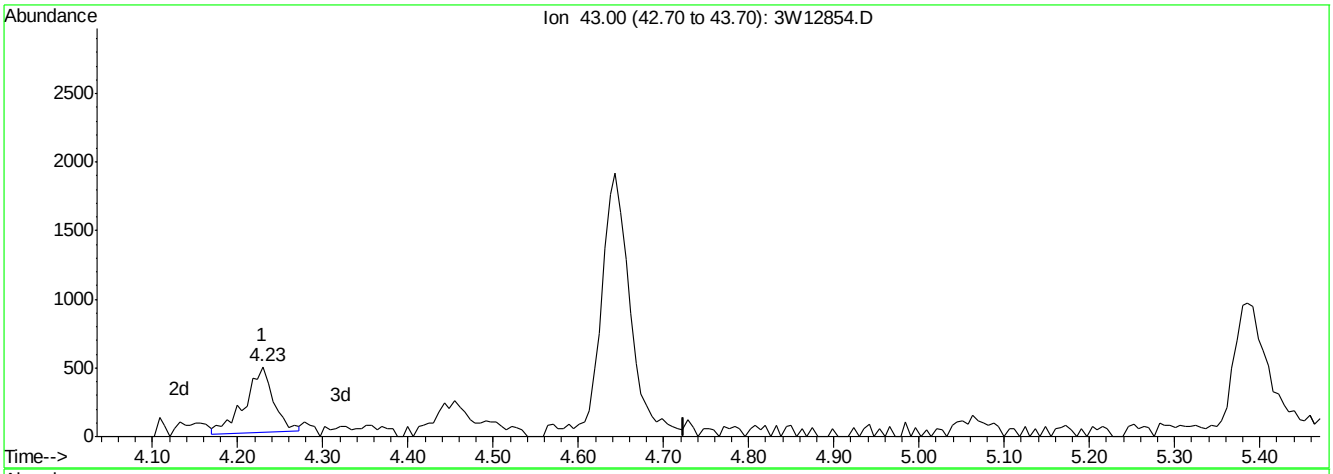


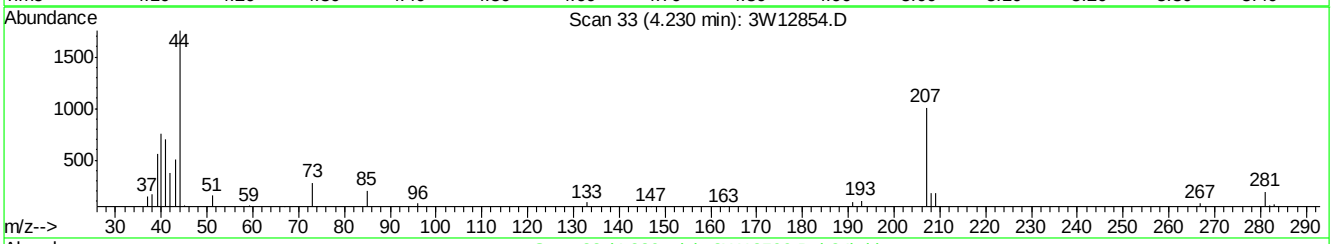
ACCUTEST Laboratories JA28237

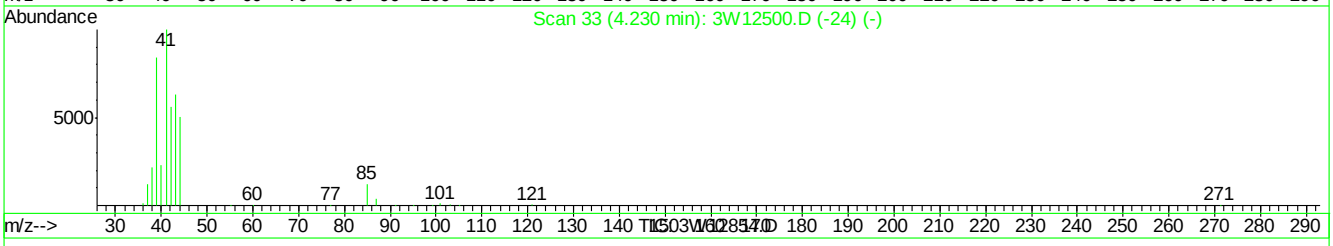
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:35 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Multiple Level Calibration







(6) PROPANE

4.23min 0.27PPBV

response 1129

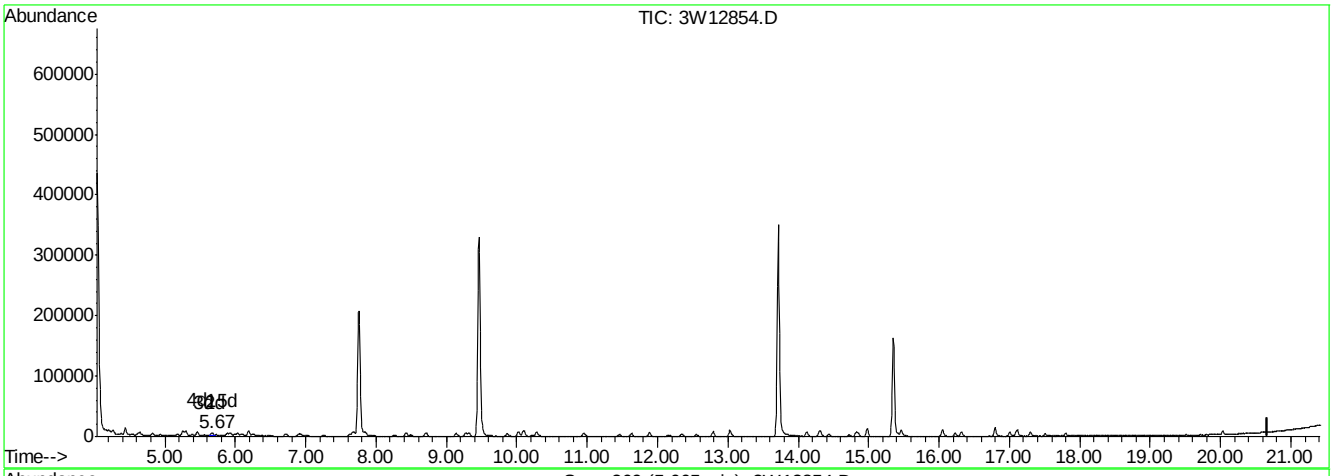
Ion	Exp%	Act%
43.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

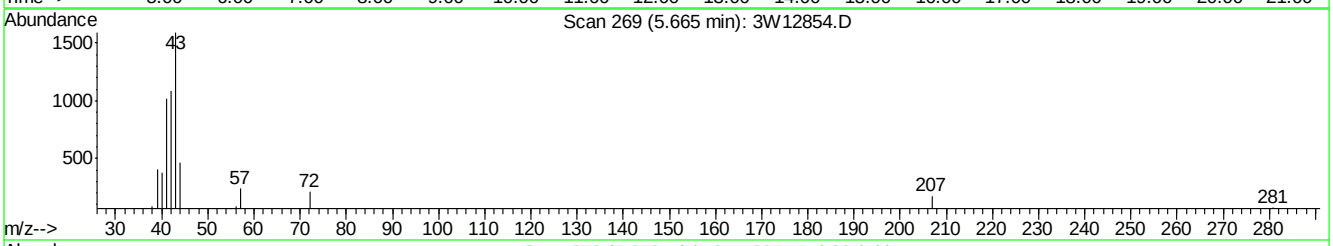
3W12854.D M3W523.M Mon Oct 05 08:38:37 2009 MS3W

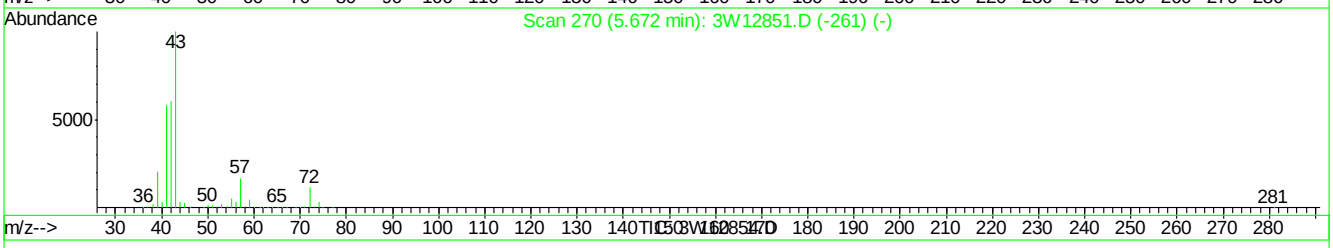
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 0.15PPBV m

response 10857

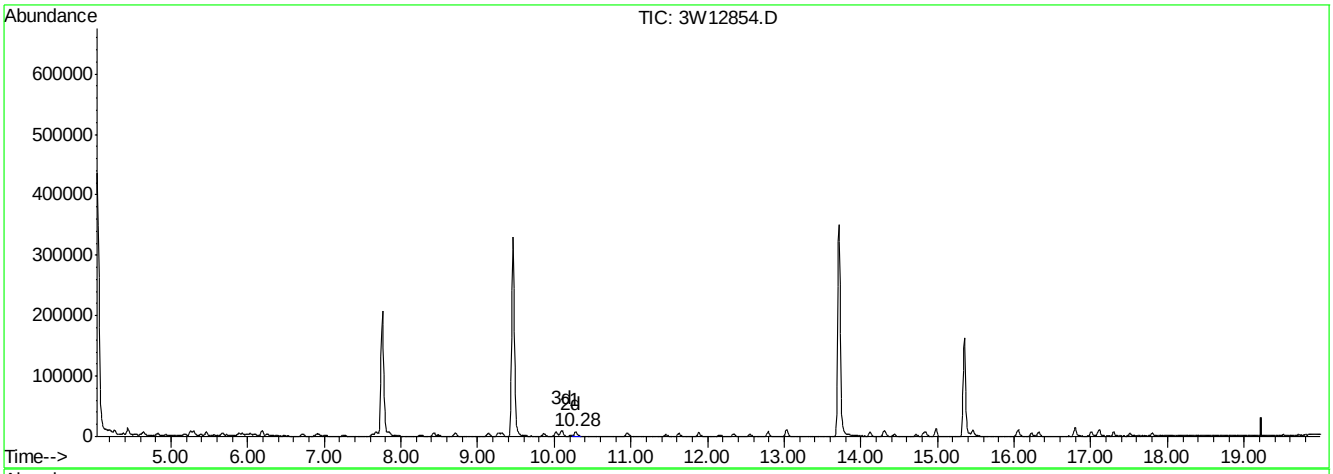
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

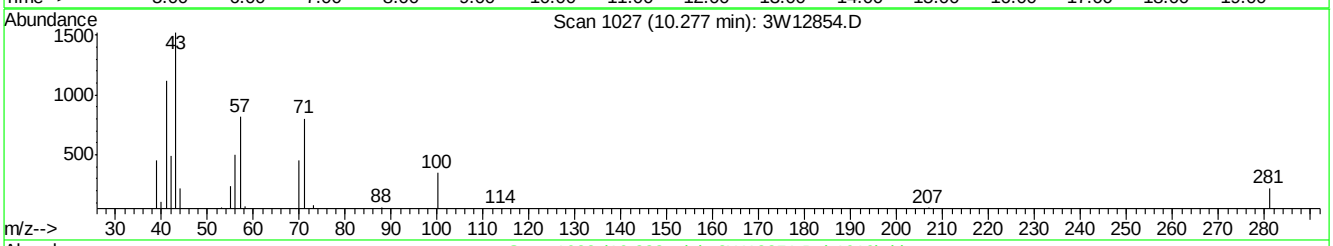
3W12854.D M3W523.M Tue Oct 06 12:28:00 2009 MS3W

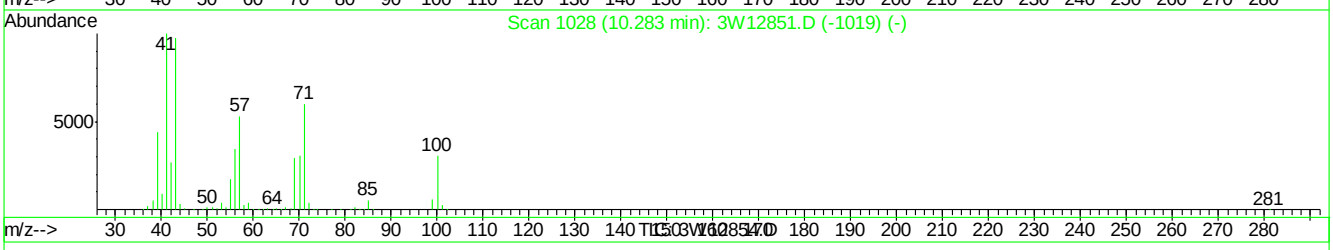
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.28min 0.17PPBV m

response 19841

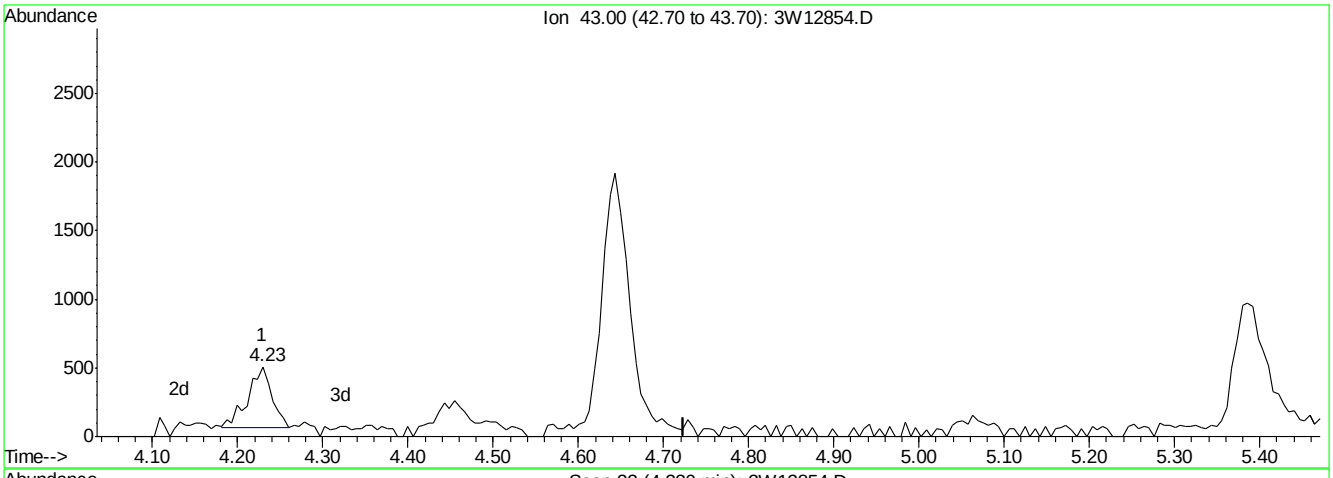
Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

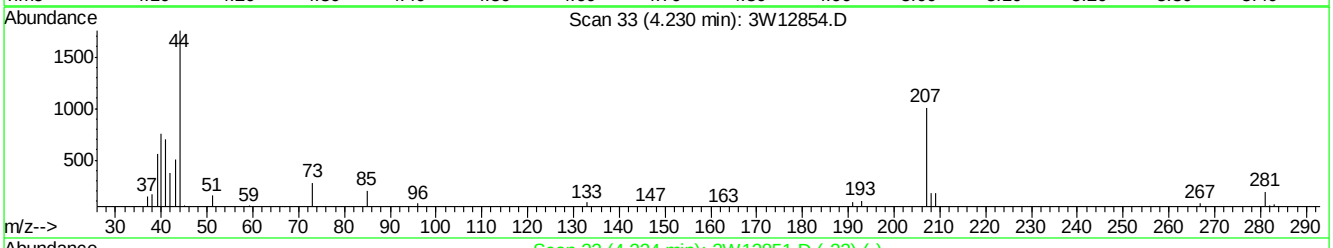
3W12854.D M3W523.M Tue Oct 06 12:28:05 2009 MS3W

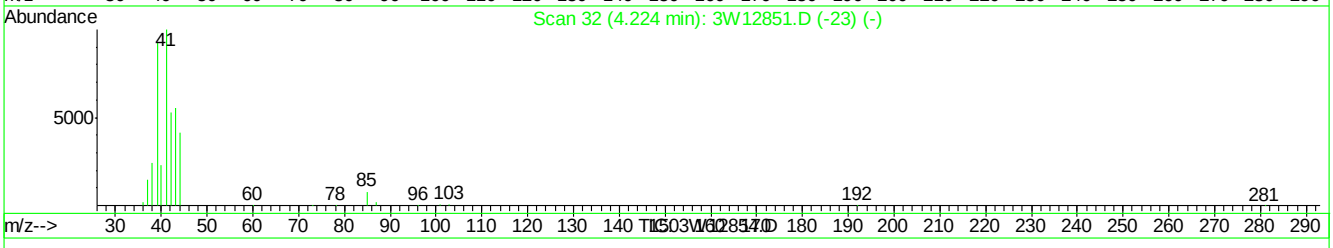
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12854.D Vial: 1
Acq On : 2 Oct 2009 10:24 pm Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:39 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(6) PROPANE

4.23min 0.21PPBV m

response 871

Ion	Exp%	Act%
43.00	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12854.D M3W523.M Tue Oct 06 14:34:22 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:36 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	80158	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.47	114	369628	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.72	82	186452	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.72	82	186452	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.36	95	104310	4.86	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 97.20%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	466442	20.17	PPBV	99
3) FREON 152A	4.16	65	150035	20.54	PPBV	100
4) CHLORODIFLUOROMETHANE	4.19	67	70252	20.06	PPBV	99
5) DICHLORODIFLUOROMETHANE	4.26	85	652332	19.93	PPBV	100
6) PROPANE	4.22	43	79206	20.14	PPBV	100
7) PROPYLENE	4.21	41	231736	20.84	PPBV	99
8) FREON 114	4.44	85	687189	20.65	PPBV	100
9) CHLOROMETHANE	4.38	50	213651	21.13	PPBV	98
10) VINYL CHLORIDE	4.53	62	242864	20.91	PPBV	100
11) 1,3-BUTADIENE	4.62	54	174651	21.17	PPBV	99
12) n-BUTANE	4.64	43	348057	20.82	PPBV	100
13) BROMOMETHANE	4.82	94	234597	20.79	PPBV	100
14) CHLOROETHANE	4.93	64	128021	21.35	PPBV	99
15) FREON 123	5.26	83	523980	20.73	PPBV	99
16) FREON 123A	5.30	117	333236	20.73	PPBV	100
17) TRICHLOROFLUOROMETHANE	5.46	101	653131	20.55	PPBV	100
18) ISOPROPYL ALCOHOL	5.53	45	323509	22.68	PPBV	99
19) ACETONE	5.34	58	96268	22.38	PPBV	100
20) PENTANE	5.67	42	221957	21.75	PPBV	100
21) TVHC as EQUIV PENTANE	5.67	TIC	1467294m	21.86	PPBV	
22) ETHYL ETHER	5.70	74	97592	22.22	PPBV	97
23) IODOMETHANE	5.88	142	661859	21.19	PPBV	98
24) 1,1-DICHLOROETHYLENE	5.93	96	209982	21.26	PPBV	99
25) CARBON DISULFIDE	6.26	76	629973	21.30	PPBV	100
26) ETHANOL	5.03	45	66207	22.47	PPBV	98
27) BROMOETHENE	5.18	106	232384	20.96	PPBV	100
28) METHYLENE CHLORIDE	6.04	84	188395	21.39	PPBV	99
29) 3-CHLOROPROPENE	6.10	76	95017	21.55	PPBV	98
30) FREON 113	6.19	151	404533	21.02	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	224669	21.21	PPBV	98
32) TERTIARY BUTYL ALCOHOL	5.95	59	420010	21.58	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	593548	22.37	PPBV	100
34) TETRAHYDROFURAN	8.19	72	95537	23.49	PPBV	99
35) HEXANE	7.67	57	304766	21.30	PPBV	100
36) VINYL ACETATE	7.00	86	45499	22.58	PPBV #	93
37) 1,1-DICHLOROETHANE	6.90	63	393322	21.16	PPBV	100
38) METHYL ETHYL KETONE	7.20	72	92426	23.42	PPBV	95
39) cis-1,2-DICHLOROETHYLENE	7.63	96	225631	21.50	PPBV	99
40) DIISOPROPYL ETHER	7.67	45	580473	22.67	PPBV	100
41) ETHYL ACETATE	7.75	61	56330	24.08	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:36 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.86	83	469986	20.95	PPBV	99
43)	2,4-DIMETHYLPENTANE	8.43	57	352269	21.66	PPBV	100
44)	1,1,1-TRICHLOROETHANE	8.71	97	510368	20.79	PPBV	99
45)	CARBON TETRACHLORIDE	9.28	117	561838	20.96	PPBV	100
46)	1,2-DICHLOROETHANE	8.49	62	324941	21.29	PPBV	100
48)	BENZENE	9.15	78	638119	21.19	PPBV	100
49)	CYCLOHEXANE	9.33	56	314655	21.37	PPBV	99
50)	2,3-DIMETHYLPENTANE	9.50	71	136222	21.30	PPBV	97
51)	TRICHLOROETHYLENE	10.11	95	298302	20.78	PPBV	99
52)	1,2-DICHLOROPROPANE	9.86	63	226807	21.57	PPBV	98
53)	BROMODICHLOROMETHANE	10.09	83	484801	20.26	PPBV	98
54)	2,2,4-TRIMETHYLPENTANE	10.03	57	924146	21.02	PPBV	100
55)	1,4-DIOXANE	10.14	88	130397	21.66	PPBV	97
56)	HEPTANE	10.28	43	349201	20.77	PPBV	99
57)	TVHC as EQUIV HEPTANE	10.28	TIC	2552393m	21.87	PPBV	
58)	METHYL METHACRYLATE	10.29	69	203618	23.72	PPBV	91
59)	METHYL ISOBUTYL KETONE	10.92	43	385202	22.08	PPBV	100
60)	cis-1,3-DICHLOROPROPENE	10.95	75	361838	21.41	PPBV	99
61)	TOLUENE	11.89	92	467569	21.58	PPBV	98
62)	trans-1,3-DICHLOROPROPENE	11.46	75	357111	21.90	PPBV	100
63)	1,1,2-TRICHLOROETHANE	11.63	83	218919	21.56	PPBV	100
65)	2-HEXANONE	12.13	43	365977	21.02	PPBV	100
66)	TETRACHLOROETHYLENE	13.03	164	380441	19.64	PPBV	100
67)	DIBROMOCHLOROMETHANE	12.35	129	529665	20.11	PPBV	100
68)	1,2-DIBROMOETHANE	12.56	107	409596	20.61	PPBV	100
69)	OCTANE	12.79	43	462196	19.63	PPBV	99
70)	1,1,1,2-TETRACHLOROETHANE	13.74	131	381766	20.14	PPBV	99
71)	CHLOROBENZENE	13.76	112	618502	20.38	PPBV	99
72)	ETHYLBENZENE	14.13	91	960158	20.21	PPBV	99
73)	m,p-XYLENE	14.32	106	751178	40.90	PPBV	96
74)	o-XYLENE	14.83	106	359103	20.27	PPBV	99
75)	STYRENE	14.73	104	523184	21.31	PPBV	100
76)	NONANE	14.99	43	439082	19.28	PPBV	98
77)	BROMOFORM	14.44	173	503485	20.57	PPBV	99
79)	1,1,2,2-TETRACHLOROETHANE	14.86	83	421979	20.18	PPBV	100
80)	1,2,3-TRICHLOROPROPANE	14.99	75	338990	20.28	PPBV	100
81)	ISOPROPYLBENZENE	15.47	105	1020975	20.05	PPBV	99
82)	2-CHLOROTOLUENE	16.05	126	245305	20.42	PPBV	100
83)	n-PROPYLBENZENE	16.06	120	273266	20.78	PPBV	99
84)	4-ETHYLTOLUENE	16.23	105	898516	20.64	PPBV	99
85)	1,3,5-TRIMETHYLBENZENE	16.33	105	744809	20.37	PPBV	99
86)	tert-BUTYLBENZENE	16.80	134	197618	20.90	PPBV	96
87)	1,2,4-TRIMETHYLBENZENE	16.81	105	692528	20.69	PPBV	99
88)	m-DICHLOROBENZENE	17.02	146	450678	20.98	PPBV	99
89)	BENZYL CHLORIDE	17.01	91	453723	22.00	PPBV	99
90)	p-DICHLOROBENZENE	17.10	146	420684	21.25	PPBV	99
91)	sec-BUTYLBENZENE	17.12	134	227874	20.90	PPBV	96
92)	p-ISOPROPYLTOLUENE	17.30	134	228060	21.65	PPBV	96
93)	o-DICHLOROBENZENE	17.52	146	384884	20.67	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:36 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

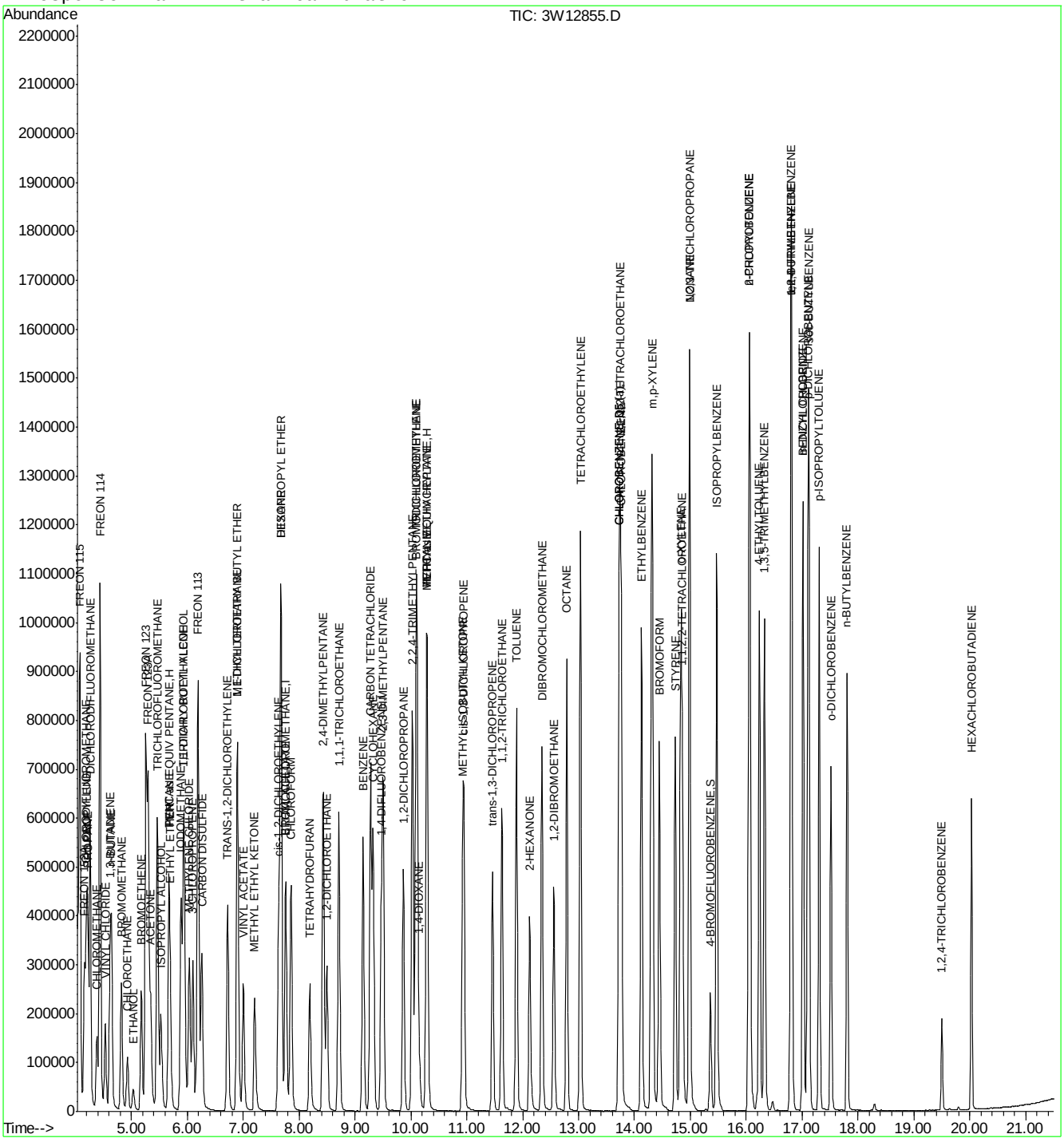
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.81	134	172333	22.16	PPBV	97
95)	HEXACHLOROBUTADIENE	20.03	225	142014	20.32	PPBV	99
96)	1,2,4-TRICHLOROBENZENE	19.50	180	73424	21.76	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:40 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

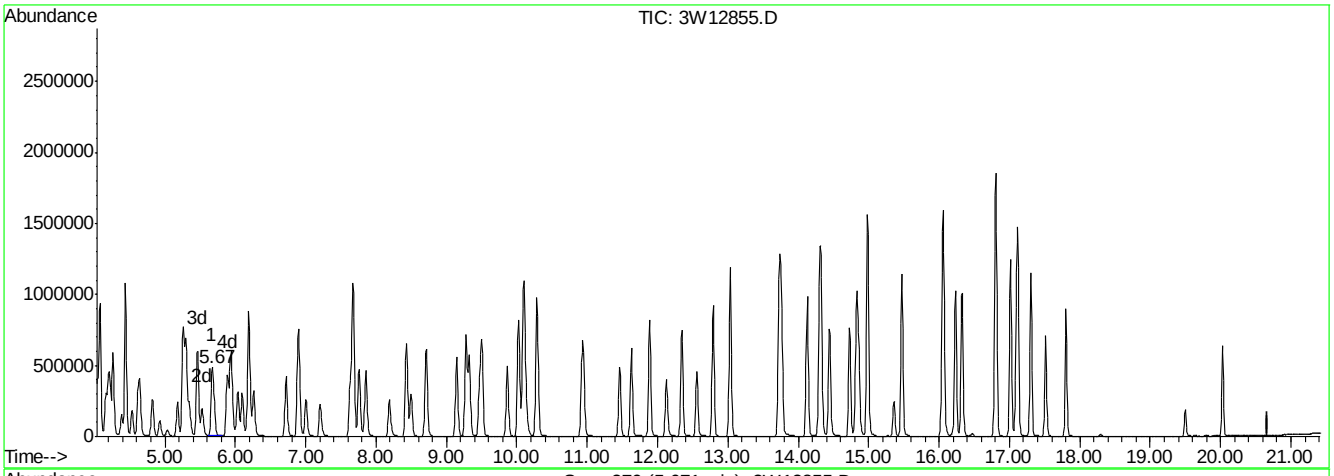


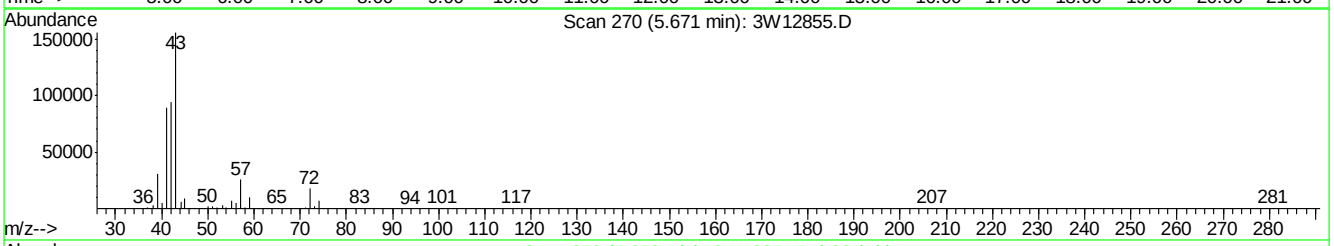
ACCUTEST Laboratories JA28237

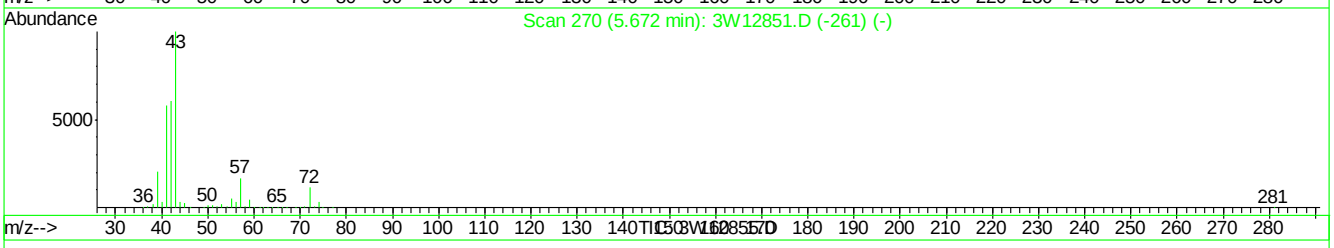
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:40 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 21.86PPBV m

response 1467294

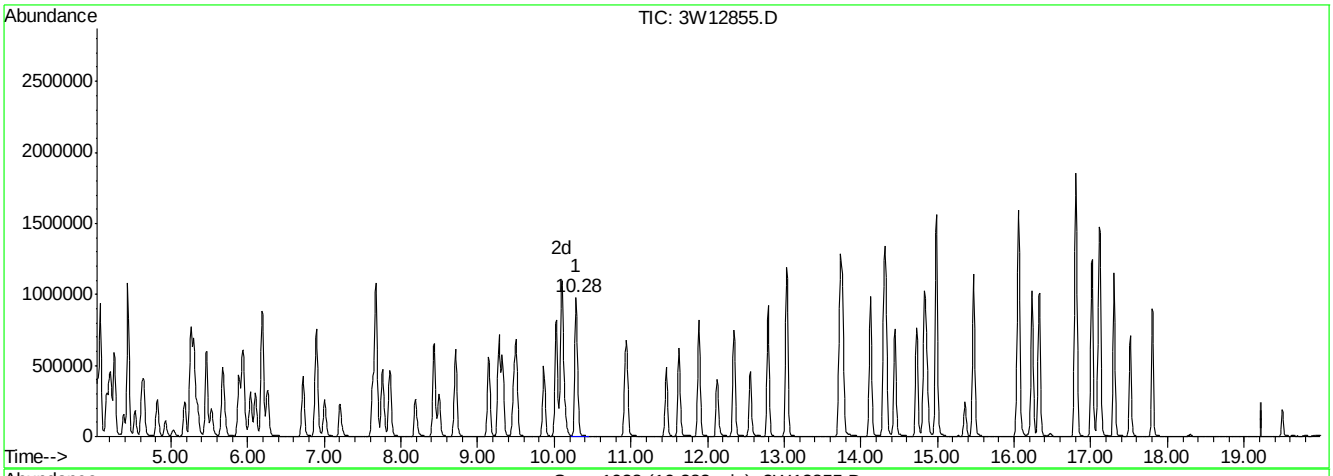
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.02#
0.00	0.00	0.02#
0.00	0.00	0.00

3W12855.D M3W523.M Tue Oct 06 12:28:14 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12855.D Vial: 2
Acq On : 2 Oct 2009 11:05 pm Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:40 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 21.87PPBV m

response 2552393

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.01#
0.00	0.00	0.01#
0.00	0.00	0.00

3W12855.D M3W523.M Tue Oct 06 12:28:17 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:38 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	91268	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	403912	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	172529	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	172626	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	97839	4.92	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 98.40%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	131400	4.99	PPBV	98
3) FREON 152A	4.16	65	41297	4.97	PPBV	97
4) CHLORODIFLUOROMETHANE	4.19	67	18575	4.66	PPBV	98
5) DICHLORODIFLUOROMETHANE	4.26	85	179874	4.83	PPBV	100
6) PROPANE	4.22	43	22866	5.11	PPBV	100
7) PROPYLENE	4.21	41	65785	5.19	PPBV	98
8) FREON 114	4.44	85	187764	4.95	PPBV	100
9) CHLOROMETHANE	4.38	50	59388	5.16	PPBV	99
10) VINYL CHLORIDE	4.53	62	68021	5.14	PPBV	100
11) 1,3-BUTADIENE	4.62	54	48177	5.13	PPBV	97
12) n-BUTANE	4.64	43	100279	5.27	PPBV	100
13) BROMOMETHANE	4.82	94	65541	5.10	PPBV	98
14) CHLOROETHANE	4.92	64	34240	5.01	PPBV	98
15) FREON 123	5.25	83	143346	4.98	PPBV	99
16) FREON 123A	5.29	117	89583	4.89	PPBV	99
17) TRICHLOROFLUOROMETHANE	5.46	101	172850	4.78	PPBV	100
18) ISOPROPYL ALCOHOL	5.52	45	74688	4.60	PPBV	98
19) ACETONE	5.35	58	22658	4.63	PPBV #	89
20) PENTANE	5.67	42	60783	5.23	PPBV	98
21) TVHC as EQUIV PENTANE	5.67	TIC	383739m	5.02	PPBV	
22) ETHYL ETHER	5.70	74	24352	4.87	PPBV	100
23) IODOMETHANE	5.88	142	181571	5.11	PPBV	95
24) 1,1-DICHLOROETHYLENE	5.93	96	58439	5.20	PPBV	96
25) CARBON DISULFIDE	6.26	76	181200	5.38	PPBV	99
26) ETHANOL	5.03	45	15746	4.69	PPBV	99
27) BROMOETHENE	5.18	106	65531	5.19	PPBV	99
28) METHYLENE CHLORIDE	6.03	84	52383	5.22	PPBV	96
29) 3-CHLOROPROPENE	6.10	76	25984	5.18	PPBV	93
30) FREON 113	6.19	151	109301	4.99	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	62800	5.21	PPBV	100
32) TERTIARY BUTYL ALCOHOL	5.94	59	102707	4.64	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	138398	4.58	PPBV	100
34) TETRAHYDROFURAN	8.20	72	21290	4.60	PPBV	100
35) HEXANE	7.67	57	86487	5.31	PPBV	95
36) VINYL ACETATE	7.00	86	10846	4.73	PPBV #	95
37) 1,1-DICHLOROETHANE	6.89	63	108757	5.14	PPBV	100
38) METHYL ETHYL KETONE	7.20	72	20200	4.50	PPBV	99
39) cis-1,2-DICHLOROETHYLENE	7.63	96	60941	5.10	PPBV	99
40) DIISOPROPYL ETHER	7.67	45	138557	4.75	PPBV	100
41) ETHYL ACETATE	7.75	61	11755	4.41	PPBV	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:38 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.85	83	125056	4.90	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.43	57	95285	5.15	PPBV		100
44)	1,1,1-TRICHLOROETHANE	8.71	97	132587	4.74	PPBV		99
45)	CARBON TETRACHLORIDE	9.27	117	140397	4.60	PPBV		100
46)	1,2-DICHLOROETHANE	8.49	62	80423	4.63	PPBV		99
48)	BENZENE	9.14	78	170755	5.19	PPBV		100
49)	CYCLOHEXANE	9.32	56	84775	5.27	PPBV		98
50)	2,3-DIMETHYLPENTANE	9.50	71	36710	5.25	PPBV		96
51)	TRICHLOROETHYLENE	10.11	95	77699	4.95	PPBV		99
52)	1,2-DICHLOROPROPANE	9.86	63	58282	5.07	PPBV		96
53)	BROMODICHLOROMETHANE	10.08	83	122944	4.70	PPBV		100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	252263	5.25	PPBV		100
55)	1,4-DIOXANE	10.15	88	32139	4.89	PPBV		96
56)	HEPTANE	10.28	43	95584	5.20	PPBV		100
57)	TVHC as EQUIV HEPTANE	10.28	TIC	611132m	4.79	PPBV		
58)	METHYL METHACRYLATE	10.29	69	40030	4.27	PPBV	#	89
59)	METHYL ISOBUTYL KETONE	10.92	43	84481	4.43	PPBV		100
60)	cis-1,3-DICHLOROPROPENE	10.95	75	86814	4.70	PPBV		97
61)	TOLUENE	11.88	92	114563	4.84	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.46	75	77780	4.37	PPBV		99
63)	1,1,2-TRICHLOROETHANE	11.62	83	53606	4.83	PPBV		99
65)	2-HEXANONE	12.12	43	77011	4.78	PPBV		100
66)	TETRACHLOROETHYLENE	13.03	164	93894	5.24	PPBV		100
67)	DIBROMOCHLOROMETHANE	12.34	129	117955	4.84	PPBV		100
68)	1,2-DIBROMOETHANE	12.55	107	89880	4.89	PPBV		99
69)	OCTANE	12.78	43	120949	5.55	PPBV		99
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	87725	5.00	PPBV		99
71)	CHLOROBENZENE	13.76	112	143887	5.12	PPBV		99
72)	ETHYLBENZENE	14.12	91	220148	5.01	PPBV		99
73)	m,p-XYLENE	14.30	106	167616	9.86	PPBV		100
74)	o-XYLENE	14.82	106	80991	4.94	PPBV		100
75)	STYRENE	14.72	104	102957	4.53	PPBV		99
76)	NONANE	14.98	43	112107	5.32	PPBV		99
77)	BROMOFORM	14.44	173	100576	4.44	PPBV		100
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	94266	4.87	PPBV		100
80)	1,2,3-TRICHLOROPROPANE	14.97	75	74191	4.80	PPBV		97
81)	ISOPROPYLBENZENE	15.47	105	229307	4.87	PPBV		100
82)	2-CHLOROTOLUENE	16.04	126	53635	4.82	PPBV		100
83)	n-PROPYLBENZENE	16.06	120	57222	4.70	PPBV		99
84)	4-ETHYLTOLUENE	16.23	105	185573	4.61	PPBV		99
85)	1,3,5-TRIMETHYLBENZENE	16.32	105	156218	4.62	PPBV		100
86)	tert-BUTYLBENZENE	16.79	134	40172	4.59	PPBV		99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	139358	4.50	PPBV		99
88)	m-DICHLOROBENZENE	17.01	146	87567	4.40	PPBV		100
89)	BENZYL CHLORIDE	17.01	91	76569	4.01	PPBV		100
90)	p-DICHLOROBENZENE	17.09	146	77473	4.23	PPBV		99
91)	sec-BUTYLBENZENE	17.11	134	45965	4.56	PPBV		96
92)	p-ISOPROPYLTOLUENE	17.30	134	42232	4.33	PPBV		99
93)	o-DICHLOROBENZENE	17.51	146	77689	4.51	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:38 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

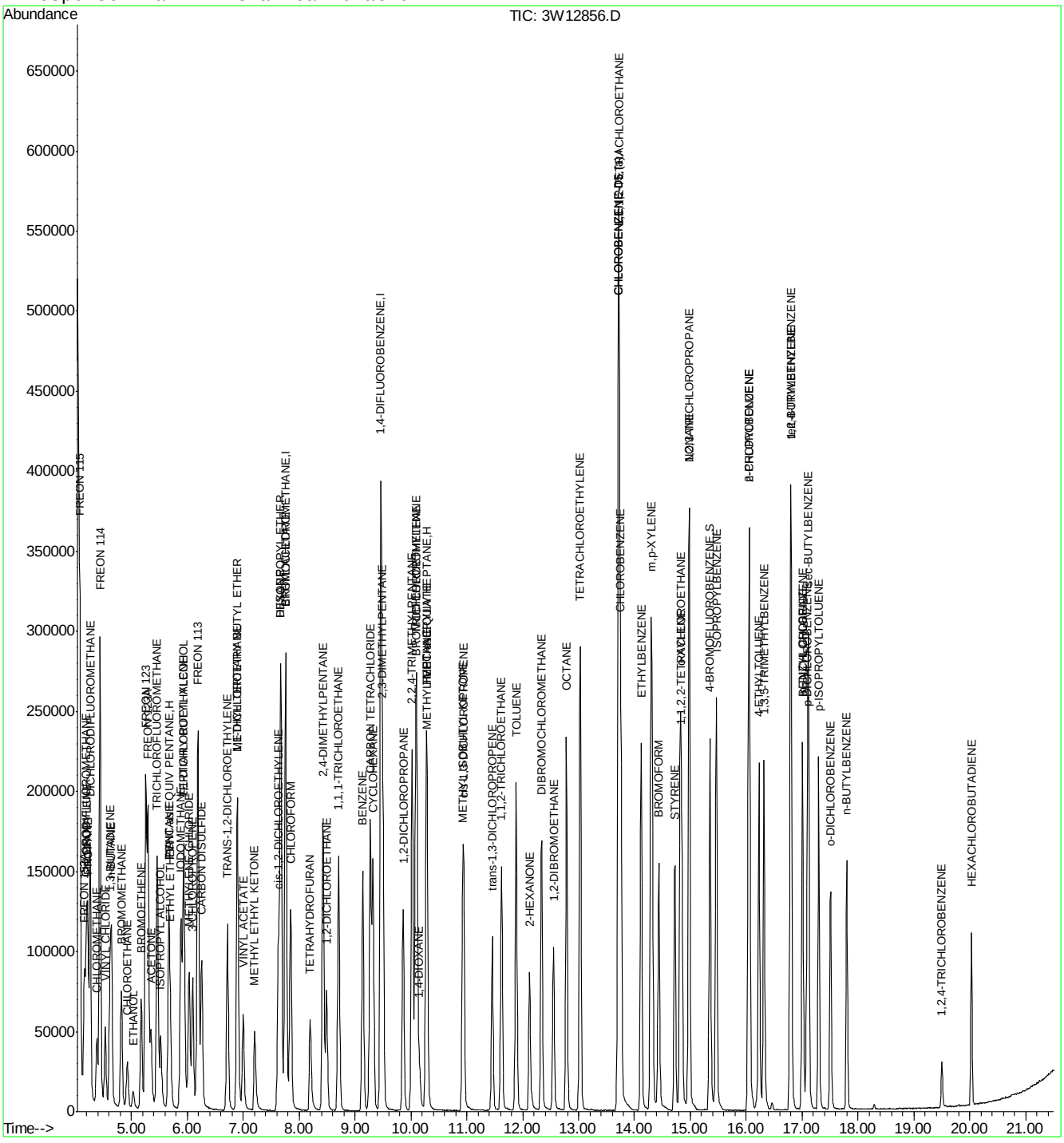
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	29307	4.07	PPBV	95
95)	HEXACHLOROBUTADIENE	20.03	225	24098	3.73	PPBV	99
96)	1,2,4-TRICHLOROBENZENE	19.50	180	12324	3.95	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:41 2009 Quant Results File: M3W523.RES

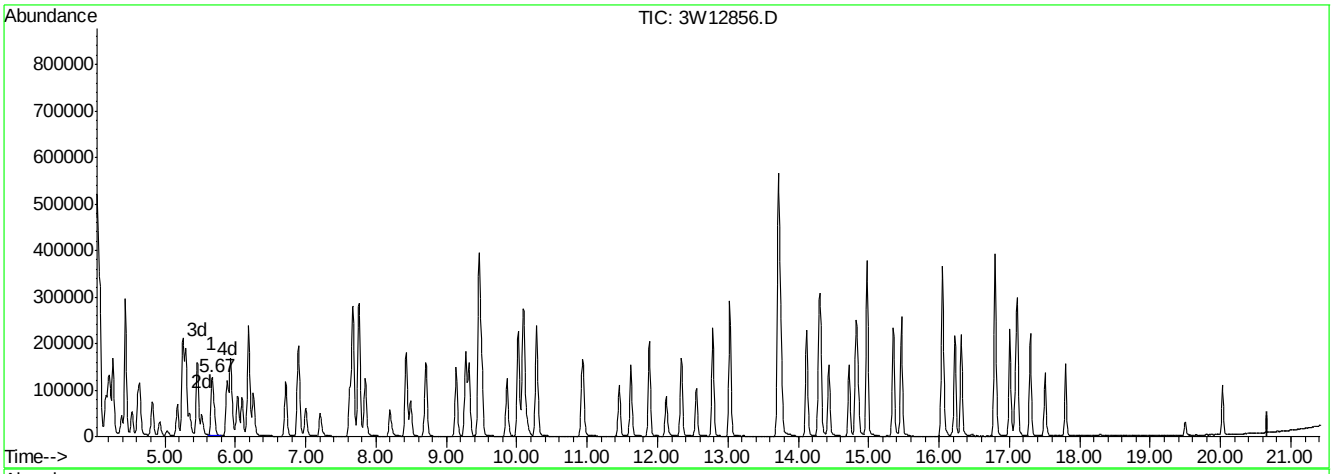
Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:41 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(21) TVHC as EQUIV PENTANE (H)

5.67min 5.02PPBV m

response 383739

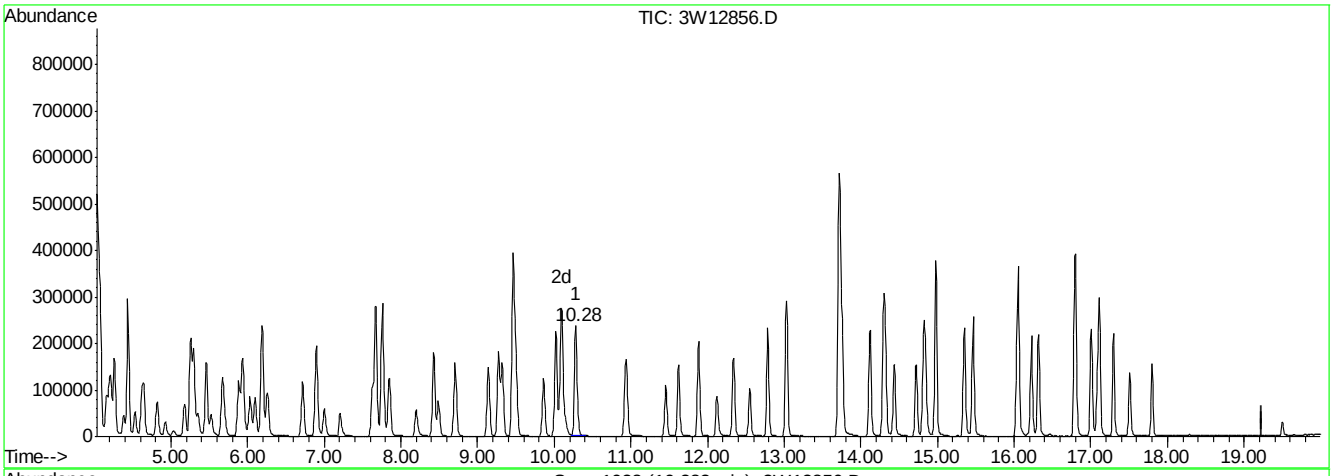
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12856.D M3W523.M Tue Oct 06 12:28:27 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12856.D Vial: 2
Acq On : 2 Oct 2009 11:44 pm Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:41 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 4.79PPBV m

response 611132

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12856.D M3W523.M Tue Oct 06 12:28:30 2009 MS3W

Manual Integrations APPROVED (compounds with "m" flag)
Jessica Reitan-Chu 10/12/09 11:21

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:40 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	85786	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	379583	10.00	PPBV	-0.01
64) CHLOROBENZENE-D5	13.71	82	146326	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	146326	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	73285	4.35	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 87.00%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	2444	0.10	PPBV	97
3) FREON 152A	4.16	65	800	0.10	PPBV	75
4) CHLORODIFLUOROMETHANE	4.19	67	405	0.11	PPBV #	39
5) DICHLORODIFLUOROMETHANE	4.26	85	3325	0.09	PPBV	98
7) PROPYLENE	4.21	41	1297	0.11	PPBV #	81
8) FREON 114	4.44	85	3448	0.10	PPBV	98
9) CHLOROMETHANE	4.39	50	1315	0.12	PPBV	89
10) VINYL CHLORIDE	4.53	62	1186	0.10	PPBV #	87
11) 1,3-BUTADIENE	4.61	54	827	0.09	PPBV #	66
13) BROMOMETHANE	4.82	94	1226	0.10	PPBV	87
14) CHLOROETHANE	4.92	64	582	0.09	PPBV	99
15) FREON 123	5.25	83	2639	0.10	PPBV #	73
16) FREON 123A	5.28	117	1715	0.10	PPBV	96
17) TRICHLOROFLUOROMETHANE	5.45	101	3326	0.10	PPBV	99
18) ISOPROPYL ALCOHOL	5.56	45	1651	0.11	PPBV	82
19) ACETONE	5.38	58	457	0.10	PPBV #	49
20) PENTANE	5.67	42	1081	0.10	PPBV	89
21) TVHC as EQUIV PENTANE	5.67	TIC	5469m	0.08	PPBV	
22) ETHYL ETHER	5.72	74	454	0.10	PPBV	98
23) IODOMETHANE	5.88	142	3242	0.10	PPBV	95
24) 1,1-DICHLOROETHYLENE	5.92	96	1185	0.11	PPBV #	84
25) CARBON DISULFIDE	6.26	76	3495	0.11	PPBV	88
27) BROMOETHENE	5.17	106	1159	0.10	PPBV	98
29) 3-CHLOROPROPENE	6.10	76	423	0.09	PPBV #	82
30) FREON 113	6.18	151	1970	0.10	PPBV	96
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	1169	0.10	PPBV	92
32) TERTIARY BUTYL ALCOHOL	5.98	59	1696	0.08	PPBV	87
33) METHYL TERTIARY BUTYL ETHE	6.92	73	2731	0.10	PPBV	87
34) TETRAHYDROFURAN	8.26	72	300	0.07	PPBV #	39
35) HEXANE	7.67	57	1520	0.10	PPBV	87
36) VINYL ACETATE	7.02	86	141	0.07	PPBV #	12
37) 1,1-DICHLOROETHANE	6.89	63	1968	0.10	PPBV	93
39) cis-1,2-DICHLOROETHYLENE	7.63	96	1087	0.10	PPBV	96
40) DIISOPROPYL ETHER	7.69	45	2523	0.09	PPBV	83
42) CHLOROFORM	7.84	83	2165	0.09	PPBV	90
43) 2,4-DIMETHYLPENTANE	8.43	57	1749	0.10	PPBV	99
44) 1,1,1-TRICHLOROETHANE	8.71	97	2275	0.09	PPBV	98
45) CARBON TETRACHLORIDE	9.27	117	2278	0.08	PPBV	98
46) 1,2-DICHLOROETHANE	8.49	62	1427	0.09	PPBV #	96
48) BENZENE	9.13	78	3069	0.10	PPBV	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:40 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

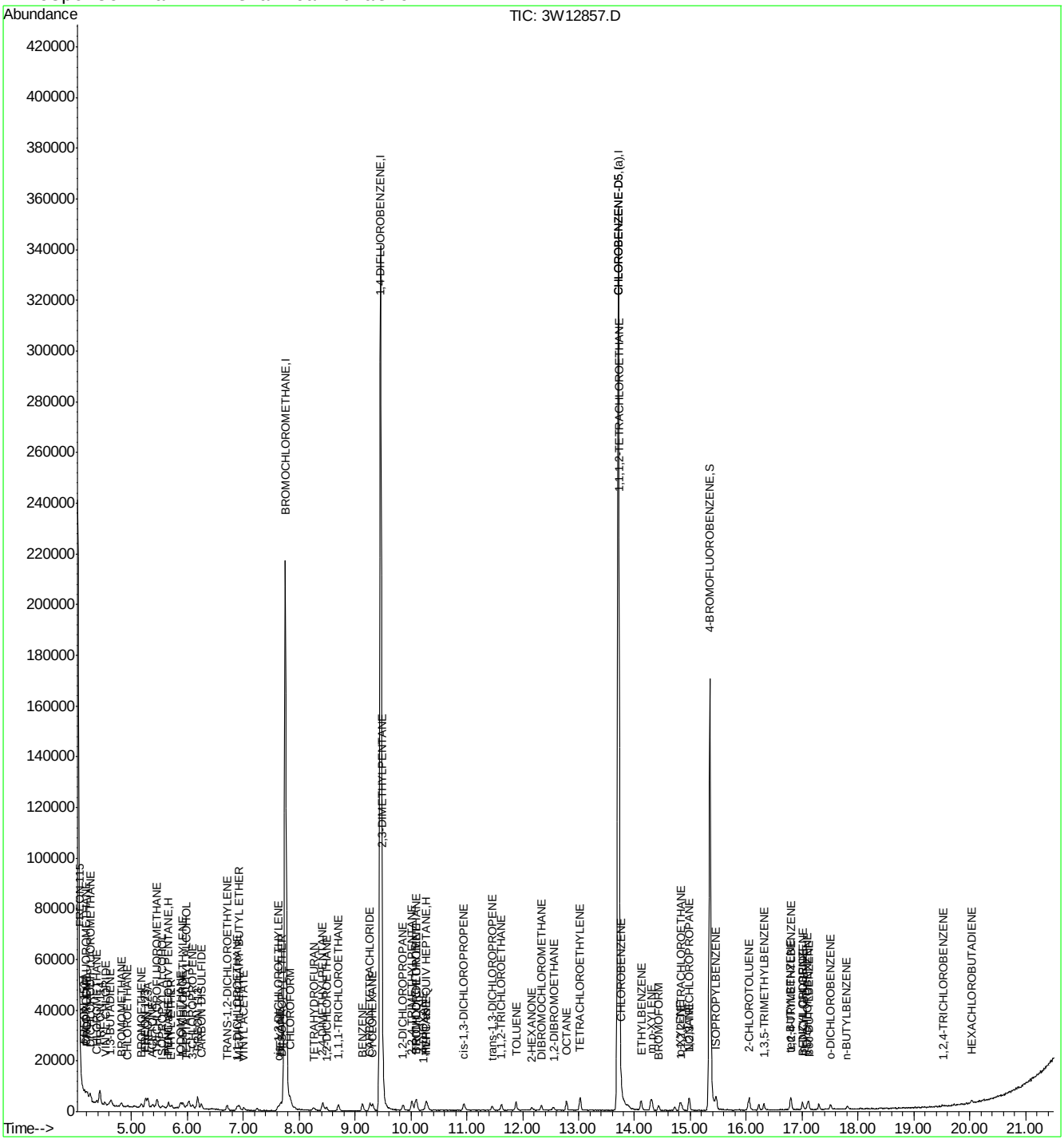
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
49)	CYCLOHEXANE	9.32	56	1525	0.10	PPBV	#	79
50)	2,3-DIMETHYLPENTANE	9.49	71	691	0.11	PPBV	#	1
51)	TRICHLOROETHYLENE	10.09	95	1419	0.10	PPBV		96
52)	1,2-DICHLOROPROPANE	9.86	63	1152	0.11	PPBV		87
53)	BROMODICHLOROMETHANE	10.08	83	1916	0.08	PPBV		99
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	4428	0.10	PPBV		97
55)	1,4-DIOXANE	10.23	88	577m	0.09	PPBV		
56)	HEPTANE	10.27	43	2035	0.12	PPBV		86
57)	TVHC as EQUIV HEPTANE	10.28	TIC	11901m	0.10	PPBV		
60)	cis-1,3-DICHLOROPROPENE	10.94	75	1424	0.08	PPBV		94
61)	TOLUENE	11.88	92	1857	0.08	PPBV		97
62)	trans-1,3-DICHLOROPROPENE	11.46	75	1277	0.08	PPBV		93
63)	1,1,2-TRICHLOROETHANE	11.63	83	823	0.08	PPBV		97
65)	2-HEXANONE	12.15	43	1004	0.07	PPBV	#	82
66)	TETRACHLOROETHYLENE	13.03	164	1619	0.11	PPBV		97
67)	DIBROMOCHLOROMETHANE	12.34	129	1463	0.07	PPBV		97
68)	1,2-DIBROMOETHANE	12.56	107	1287	0.08	PPBV	#	99
69)	OCTANE	12.79	43	1956	0.11	PPBV		91
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	1332	0.09	PPBV		100
71)	CHLOROBENZENE	13.76	112	2418	0.10	PPBV		96
72)	ETHYLBENZENE	14.13	91	3501	0.09	PPBV		99
73)	m,p-XYLENE	14.30	106	2546	0.18	PPBV		89
74)	o-XYLENE	14.82	106	1160	0.08	PPBV		96
76)	NONANE	14.97	43	1554	0.09	PPBV	#	88
77)	BROMOFORM	14.43	173	1279	0.07	PPBV	#	89
79)	1,1,2,2-TETRACHLOROETHANE	14.85	83	1186	0.07	PPBV	#	93
80)	1,2,3-TRICHLOROPROPANE	14.97	75	1146	0.09	PPBV		94
81)	ISOPROPYLBENZENE	15.46	105	3401	0.09	PPBV		97
82)	2-CHLOROTOLUENE	16.04	126	656	0.07	PPBV	#	42
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	1962	0.07	PPBV		99
86)	tert-BUTYLBENZENE	16.79	134	476	0.06	PPBV	#	87
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	1643	0.06	PPBV		92
88)	m-DICHLOROBENZENE	17.01	146	1221	0.07	PPBV		93
89)	BENZYL CHLORIDE	17.00	91	1252	0.08	PPBV	#	83
90)	p-DICHLOROBENZENE	17.09	146	1219	0.08	PPBV		91
91)	sec-BUTYLBENZENE	17.11	134	527	0.06	PPBV		99
93)	o-DICHLOROBENZENE	17.51	146	1137	0.08	PPBV		92
94)	n-BUTYLBENZENE	17.80	134	239	0.04	PPBV	#	16
95)	HEXACHLOROBUTADIENE	20.03	225	353	0.06	PPBV	#	83
96)	1,2,4-TRICHLOROBENZENE	19.52	180	266	0.10	PPBV	#	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:45 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

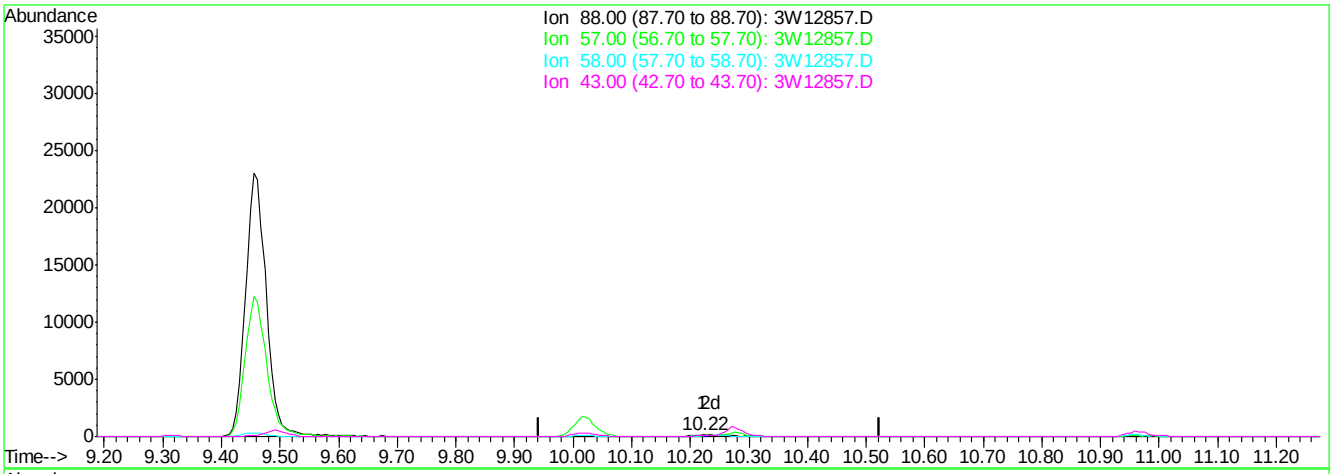


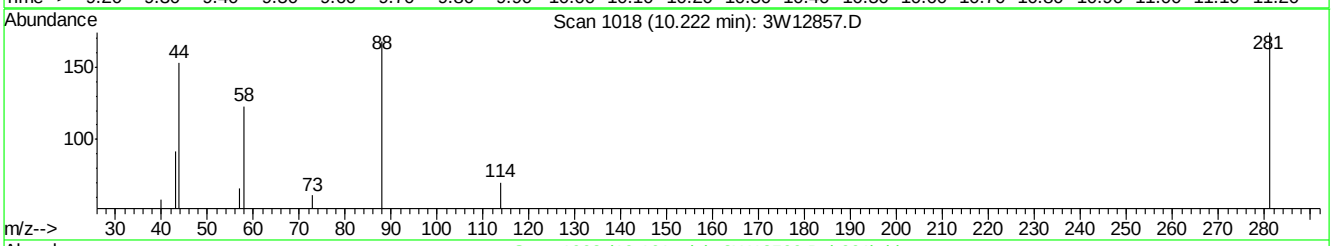
ACCUTEST Laboratories JA28237

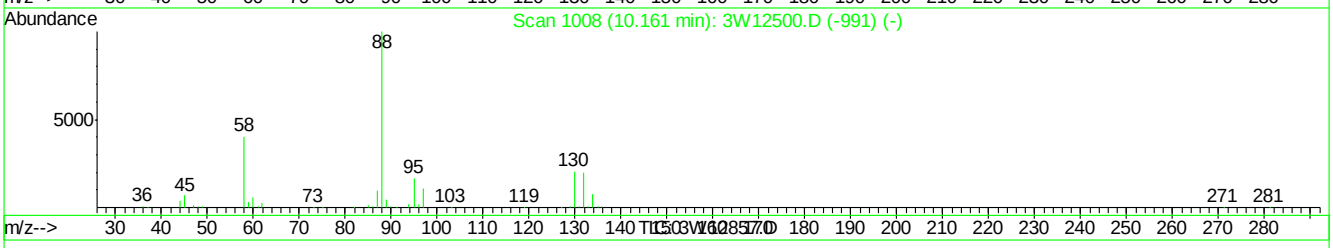
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:42 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Multiple Level Calibration







(55) 1,4-DIOXANE

10.22min 0.04PPBV

response 253

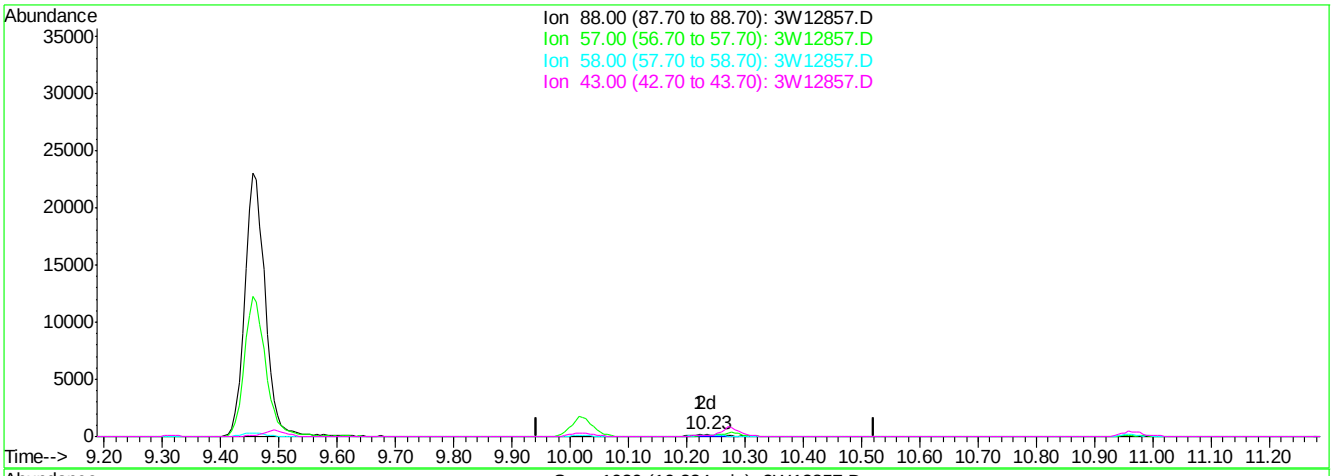
Ion	Exp%	Act%
88.00	100	100
57.00	21.70	39.29
58.00	60.00	73.21
43.00	26.30	54.76#

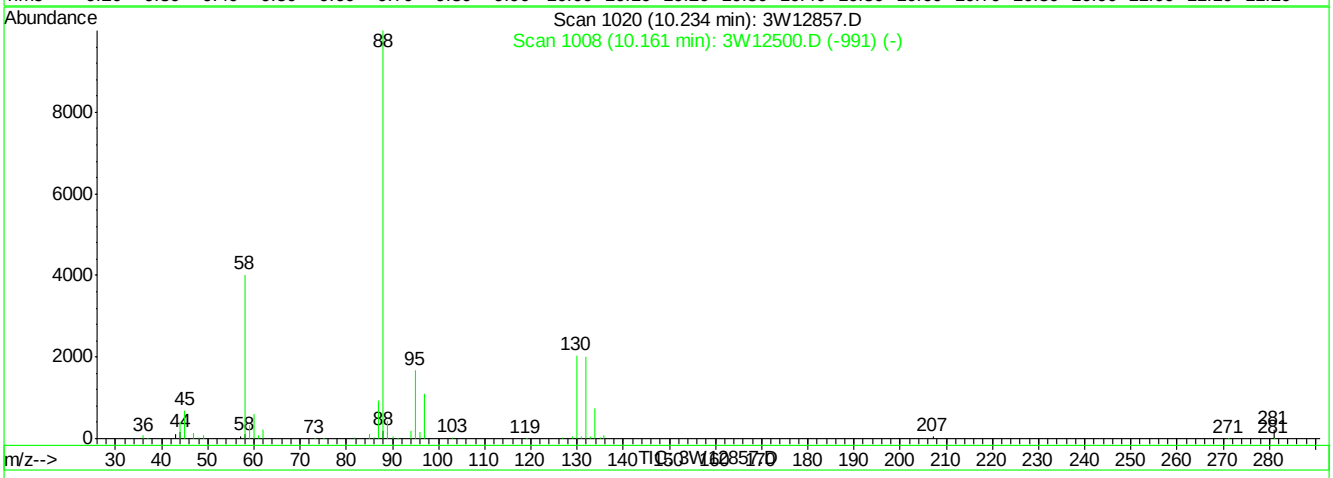
3W12857.D M3W523.M Mon Oct 05 08:43:11 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:43 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Multiple Level Calibration





(55) 1,4-DIOXANE

10.23min 0.09PPBV m

response 577

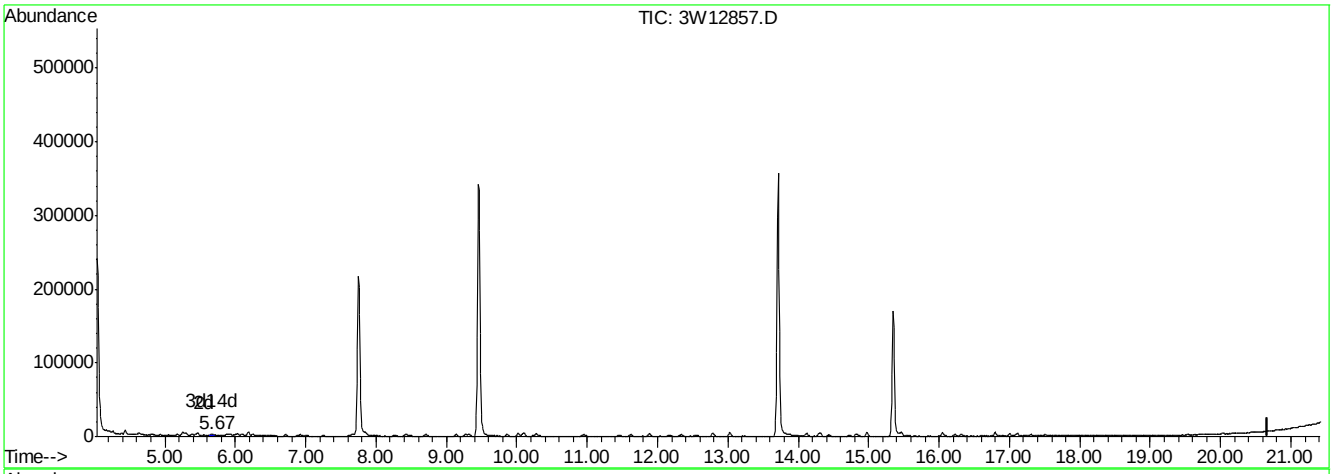
Ion	Exp%	Act%
88.00	100	100
57.00	21.70	34.33
58.00	60.00	49.25
43.00	26.30	51.24#

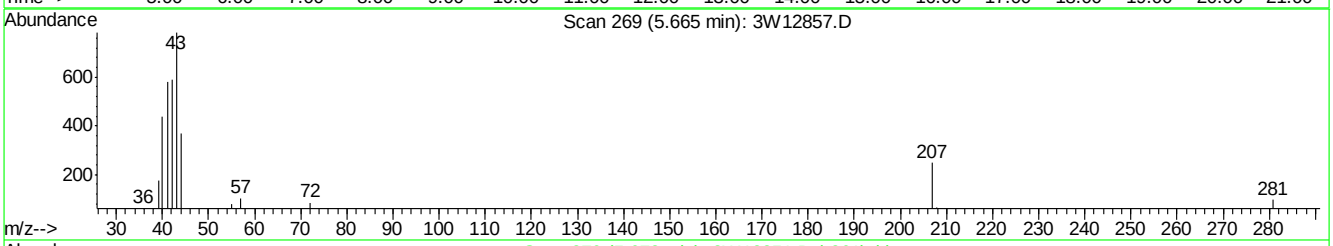
3W12857.D M3W523.M Mon Oct 05 08:43:17 2009 MS3W

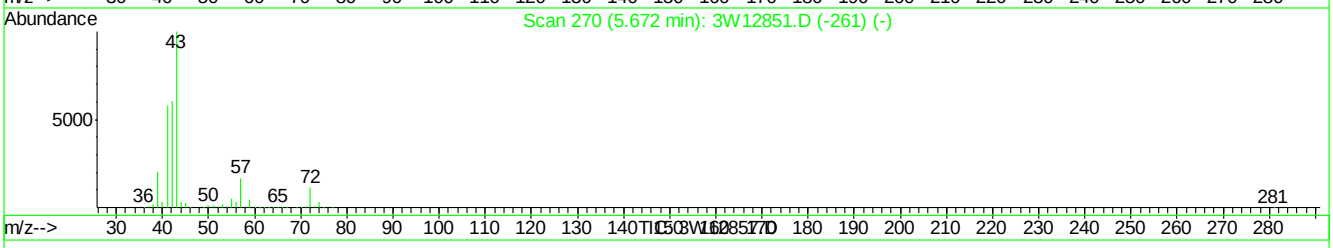
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:45 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 0.08PPBV m

response 5469

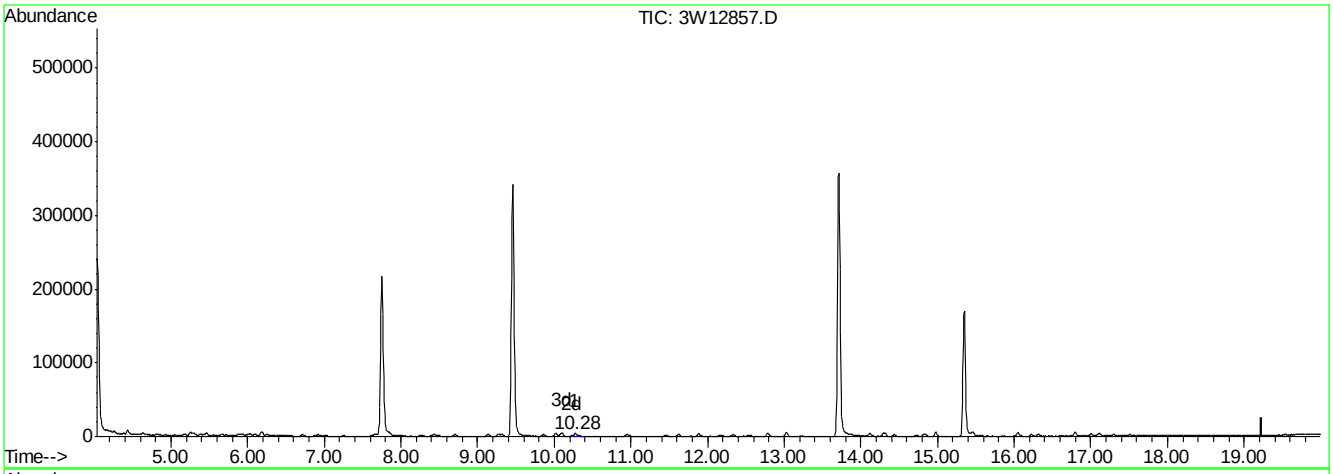
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12857.D M3W523.M Tue Oct 06 12:28:40 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12857.D Vial: 4
Acq On : 3 Oct 2009 12:25 am Operator: YOUMINH
Sample : IC523-0.1 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:45 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 0.10PPBV m

response 11901

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12857.D M3W523.M Tue Oct 06 12:28:44 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12858.D Vial: 4
Acq On : 3 Oct 2009 1:04 am Operator: YOUMINH
Sample : IC523-0.04 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:42 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	73323	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	315332	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	125469	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	125469	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	61363	4.25	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 85.00%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	990	0.05	PPBV	95
3) FREON 152A	4.16	65	302	0.05	PPBV #	44
4) CHLORODIFLUOROMETHANE	4.20	67	146	0.05	PPBV #	39
5) DICHLORODIFLUOROMETHANE	4.26	85	1307	0.04	PPBV	98
7) PROPYLENE	4.21	41	392	0.04	PPBV #	1
8) FREON 114	4.44	85	1371	0.05	PPBV	93
9) CHLOROMETHANE	4.39	50	647	0.07	PPBV	98
10) VINYL CHLORIDE	4.53	62	412	0.04	PPBV #	50
11) 1,3-BUTADIENE	4.61	54	302	0.04	PPBV #	47
13) BROMOMETHANE	4.82	94	443	0.04	PPBV #	68
14) CHLOROETHANE	4.93	64	202	0.04	PPBV #	45
15) FREON 123	5.25	83	957	0.04	PPBV #	72
16) FREON 123A	5.29	117	553	0.04	PPBV #	65
17) TRICHLOROFLUOROMETHANE	5.46	101	1365	0.05	PPBV #	91
18) ISOPROPYL ALCOHOL	5.57	45	603	0.05	PPBV	97
19) ACETONE	5.40	58	194	0.05	PPBV #	10
23) IODOMETHANE	5.88	142	1034	0.04	PPBV	94
24) 1,1-DICHLOROETHYLENE	5.91	96	409	0.05	PPBV #	86
25) CARBON DISULFIDE	6.26	76	1168	0.04	PPBV #	87
27) BROMOETHENE	5.18	106	361	0.04	PPBV #	90
30) FREON 113	6.19	151	618	0.04	PPBV	92
31) TRANS-1,2-DICHLOROETHYLENE	6.71	96	398	0.04	PPBV #	83
32) TERTIARY BUTYL ALCOHOL	5.99	59	487	0.03	PPBV #	82
33) METHYL TERTIARY BUTYL ETHE	6.94	73	911	0.04	PPBV #	77
35) HEXANE	7.67	57	554	0.04	PPBV #	75
37) 1,1-DICHLOROETHANE	6.89	63	635	0.04	PPBV #	89
39) cis-1,2-DICHLOROETHYLENE	7.63	96	416	0.04	PPBV #	82
40) DIISOPROPYL ETHER	7.71	45	764	0.03	PPBV #	67
42) CHLOROFORM	7.84	83	825	0.04	PPBV	89
43) 2,4-DIMETHYLPENTANE	8.43	57	581	0.04	PPBV #	62
44) 1,1,1-TRICHLOROETHANE	8.71	97	863	0.04	PPBV	92
45) CARBON TETRACHLORIDE	9.27	117	803	0.03	PPBV	90
46) 1,2-DICHLOROETHANE	8.49	62	464	0.03	PPBV #	49
48) BENZENE	9.14	78	1042	0.04	PPBV	99
49) CYCLOHEXANE	9.32	56	561	0.04	PPBV #	72
50) 2,3-DIMETHYLPENTANE	9.49	71	208	0.04	PPBV #	1
51) TRICHLOROETHYLENE	10.09	95	418	0.03	PPBV	91
52) 1,2-DICHLOROPROPANE	9.86	63	413	0.05	PPBV #	62
53) BROMODICHLOROMETHANE	10.08	83	617	0.03	PPBV	98
54) 2,2,4-TRIMETHYLPENTANE	10.02	57	1621	0.04	PPBV #	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12858.D Vial: 4
Acq On : 3 Oct 2009 1:04 am Operator: YOUMINH
Sample : IC523-0.04 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:42 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

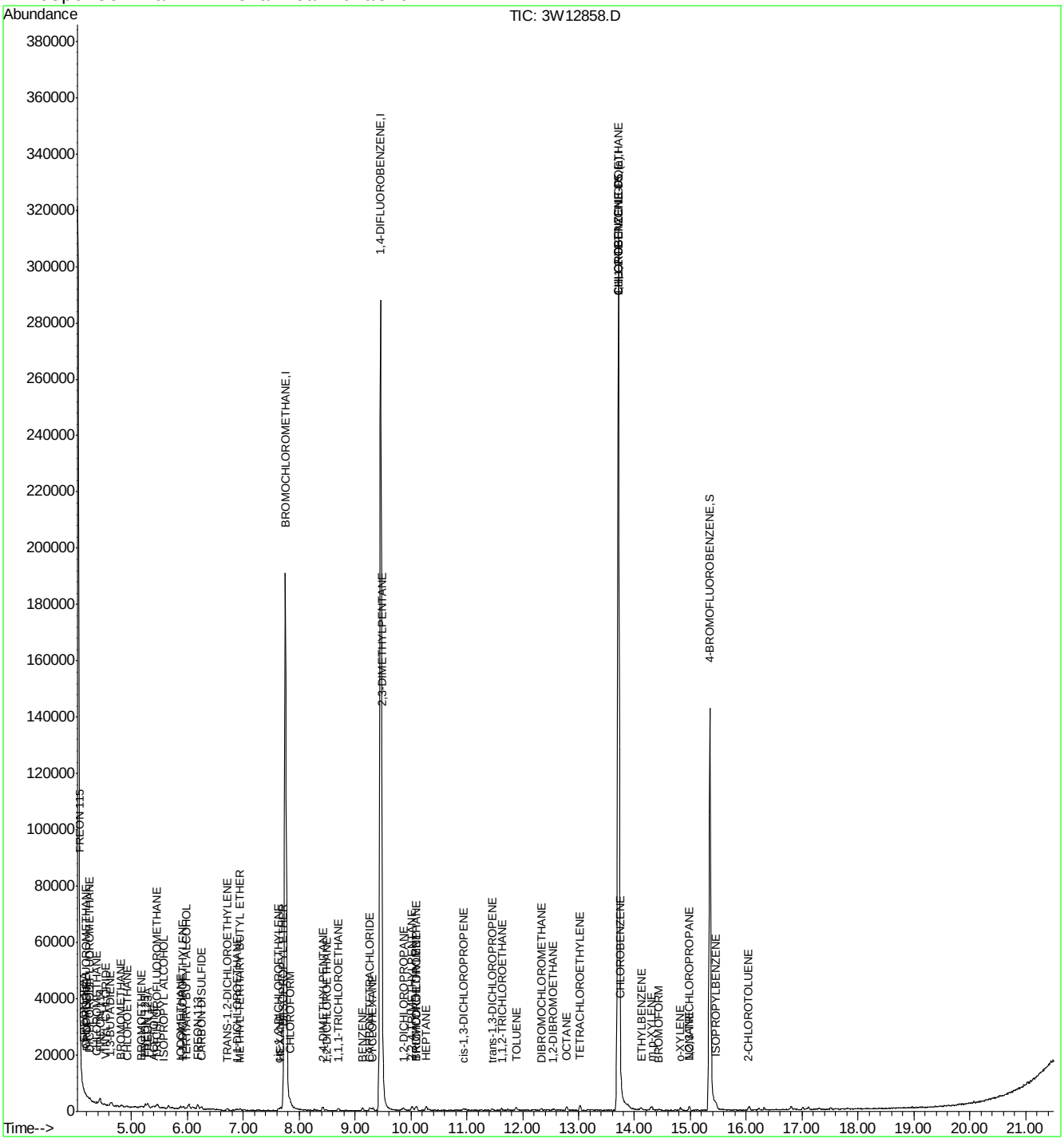
	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	HEPTANE	10.27	43	719	0.05	PPBV		86
60)	cis-1,3-DICHLOROPROPENE	10.93	75	472	0.03	PPBV	#	79
61)	TOLUENE	11.88	92	594	0.03	PPBV	#	78
62)	trans-1,3-DICHLOROPROPENE	11.46	75	384	0.03	PPBV	#	56
63)	1,1,2-TRICHLOROETHANE	11.63	83	228	0.03	PPBV	#	61
66)	TETRACHLOROETHYLENE	13.03	164	463	0.04	PPBV		95
67)	DIBROMOCHLOROMETHANE	12.33	129	464	0.03	PPBV	#	80
68)	1,2-DIBROMOETHANE	12.55	107	395	0.03	PPBV	#	89
69)	OCTANE	12.79	43	664	0.04	PPBV		89
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	425	0.03	PPBV		84
71)	CHLOROBENZENE	13.76	112	746	0.04	PPBV	#	49
72)	ETHYLBENZENE	14.12	91	1040	0.03	PPBV	#	89
73)	m,p-XYLENE	14.31	106	727	0.06	PPBV	#	64
74)	o-XYLENE	14.82	106	320	0.03	PPBV	#	74
76)	NONANE	14.98	43	510	0.03	PPBV	#	55
77)	BROMOFORM	14.43	173	389	0.02	PPBV	#	82
80)	1,2,3-TRICHLOROPROPANE	14.98	75	345	0.03	PPBV	#	36
81)	ISOPROPYLBENZENE	15.47	105	938	0.03	PPBV	#	83
82)	2-CHLOROTOLUENE	16.04	126	204	0.03	PPBV	#	42

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12858.D Vial: 4
Acq On : 3 Oct 2009 1:04 am Operator: YOUMINH
Sample : IC523-0.04 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12859.D Vial: 6
Acq On : 3 Oct 2009 2:23 am Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:10:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

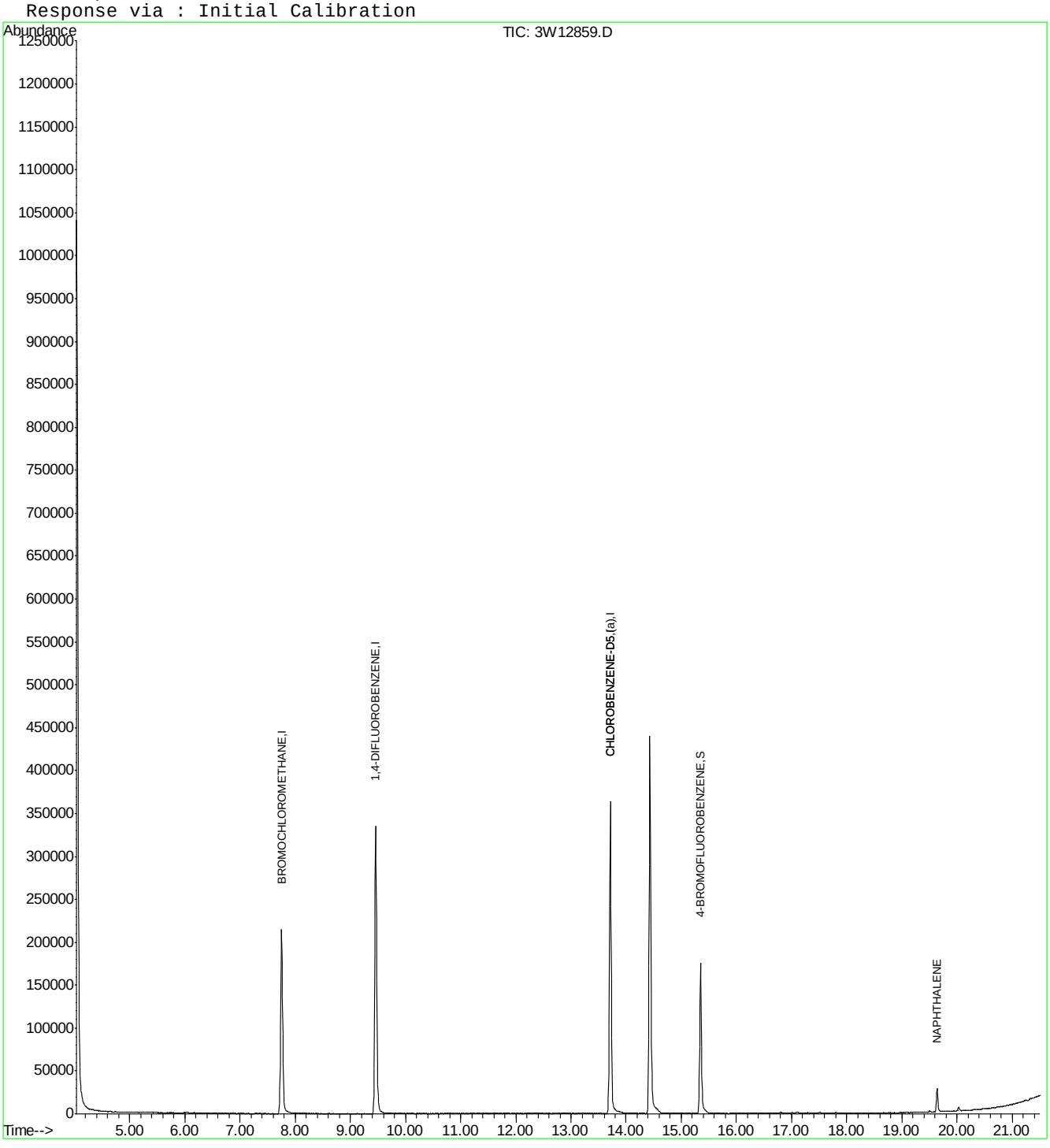
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	85556	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	372344	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	147170	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	147438	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	75804	4.91	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 98.20%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	26107	3.38	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12859.D Vial: 6
Acq On : 3 Oct 2009 2:23 am Operator: YOUMINH
Sample : IC523-5.0 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:12 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



3W12859.D M3W523.M Tue Oct 06 12:25:08 2009 MS3W Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12860.D Vial: 6
Acq On : 3 Oct 2009 3:03 am Operator: YOUMINH
Sample : IC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:10:52 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

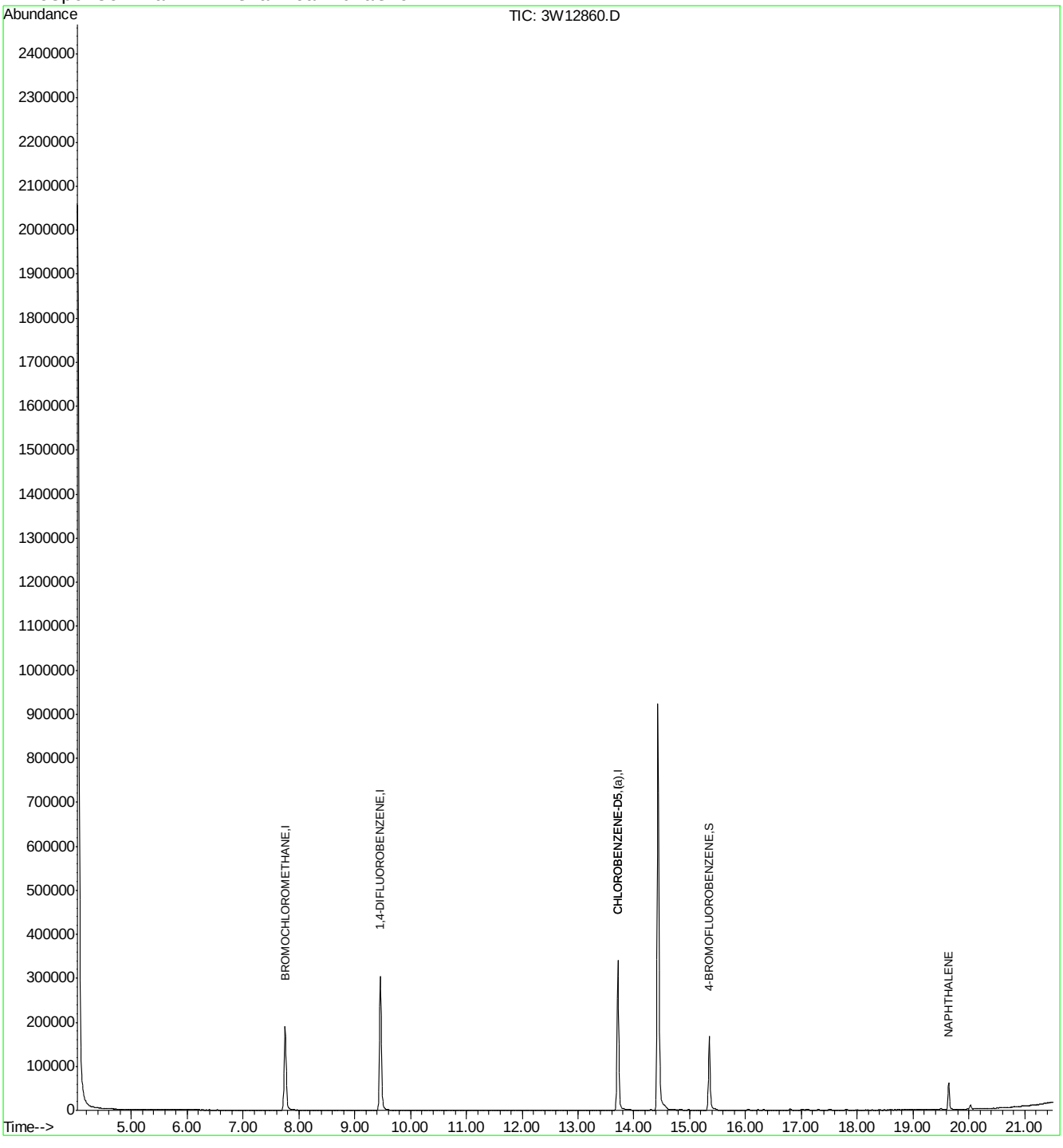
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	74121	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	328473	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	136851	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	136851	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	71248	4.96	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 99.20%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	56169	7.84	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12860.D Vial: 6
Acq On : 3 Oct 2009 3:03 am Operator: YOUMINH
Sample : IC523-10 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:12 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.77	128	78769	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.48	114	373529	10.00	PPBV	0.01
64) CHLOROBENZENE-D5	13.73	82	216753	10.00	PPBV	0.01
97) CHLOROBENZENE-D5 (a)	13.73	82	216753	10.00	PPBV	0.01

System Monitoring Compounds

78) 4-BROMOFLUOROBENZENE	15.37	95	108137	4.33	PPBV	0.02

Spiked Amount 5.000 Range 65 - 128 Recovery = 86.60%

Target Compounds						Qvalue
2) FREON 115	4.08	85	886473	39.01	PPBV	98
3) FREON 152A	4.16	65	292893	40.81	PPBV	98
4) CHLORODIFLUOROMETHANE	4.19	67	139944	40.66	PPBV	100
5) DICHLORODIFLUOROMETHANE	4.26	85	1253810	38.99	PPBV	99
6) PROPANE	4.22	43	157386	40.73	PPBV	100
7) PROPYLENE	4.21	41	447273	40.92	PPBV	100
8) FREON 114	4.44	85	1283954	39.26	PPBV	99
9) CHLOROMETHANE	4.38	50	413800	41.65	PPBV	99
10) VINYL CHLORIDE	4.53	62	464321	40.68	PPBV	100
11) 1,3-BUTADIENE	4.62	54	345063	42.56	PPBV	99
12) n-BUTANE	4.64	43	692558	42.16	PPBV	100
13) BROMOMETHANE	4.82	94	442874	39.94	PPBV	99
14) CHLOROETHANE	4.93	64	247412	41.98	PPBV	99
15) FREON 123	5.26	83	997312	40.16	PPBV	99
16) FREON 123A	5.30	117	641175	40.59	PPBV	99
17) TRICHLOROFLUOROMETHANE	5.46	101	1271422	40.70	PPBV	99
18) ISOPROPYL ALCOHOL	5.54	45	685401	48.89	PPBV	100
19) ACETONE	5.35	58	192352	45.50	PPBV	91
20) PENTANE	5.67	42	429666	42.84	PPBV	100
21) TVHC as EQUIV PENTANE	5.68	TIC	2862497m	43.40	PPBV	
22) ETHYL ETHER	5.70	74	192178	44.53	PPBV	98
23) IODOMETHANE	5.89	142	1280232	41.72	PPBV	99
24) 1,1-DICHLOROETHYLENE	5.93	96	406421	41.88	PPBV	99
25) CARBON DISULFIDE	6.26	76	1224352	42.13	PPBV	98
26) ETHANOL	5.04	45	139651	48.23	PPBV	99
27) BROMOETHENE	5.18	106	439530	40.35	PPBV	100
28) METHYLENE CHLORIDE	6.04	84	364126	42.07	PPBV	96
29) 3-CHLOROPROPENE	6.11	76	186133	42.96	PPBV	95
30) FREON 113	6.19	151	790555	41.81	PPBV	99
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	444651	42.72	PPBV	97
32) TERTIARY BUTYL ALCOHOL	5.96	59	731015	38.23	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	1239586	47.54	PPBV	100
34) TETRAHYDROFURAN	8.19	72	206090	51.56	PPBV	97
35) HEXANE	7.67	57	598265	42.56	PPBV	98
36) VINYL ACETATE	7.01	86	95115	48.03	PPBV #	85
37) 1,1-DICHLOROETHANE	6.91	63	786806	43.08	PPBV	99
38) METHYL ETHYL KETONE	7.21	72	201439	51.94	PPBV #	91
39) cis-1,2-DICHLOROETHYLENE	7.64	96	456032	44.22	PPBV	99
40) DIISOPROPYL ETHER	7.68	45	1188755	47.24	PPBV	100
41) ETHYL ACETATE	7.76	61	124225	54.03	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.87	83	951923	43.18	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.44	57	726171	45.44	PPBV		100
44)	1,1,1-TRICHLOROETHANE	8.72	97	1048268	43.45	PPBV		99
45)	CARBON TETRACHLORIDE	9.28	117	1161982	44.11	PPBV		100
46)	1,2-DICHLOROETHANE	8.51	62	676718	45.11	PPBV		100
48)	BENZENE	9.15	78	1322594	43.47	PPBV		100
49)	CYCLOHEXANE	9.33	56	650687	43.73	PPBV		99
50)	2,3-DIMETHYLPENTANE	9.51	71	284579	44.04	PPBV		95
51)	TRICHLOROETHYLENE	10.12	95	619021	42.67	PPBV		98
52)	1,2-DICHLOROPROPANE	9.87	63	478958	45.08	PPBV		99
53)	BROMODICHLOROMETHANE	10.10	83	1010363	41.79	PPBV		98
54)	2,2,4-TRIMETHYLPENTANE	10.03	57	1887970	42.48	PPBV		100
55)	1,4-DIOXANE	10.15	88	301005	49.48	PPBV		97
56)	HEPTANE	10.29	43	713727	42.00	PPBV		97
57)	TVHC as EQUIV HEPTANE	10.29	TIC	5448455m	46.19	PPBV		
58)	METHYL METHACRYLATE	10.31	69	459684	52.99	PPBV	#	86
59)	METHYL ISOBUTYL KETONE	10.93	43	875505	49.65	PPBV		99
60)	cis-1,3-DICHLOROPROPENE	10.96	75	772418	45.23	PPBV		99
61)	TOLUENE	11.89	92	995743	45.47	PPBV		97
62)	trans-1,3-DICHLOROPROPENE	11.47	75	788277	47.84	PPBV		99
63)	1,1,2-TRICHLOROETHANE	11.64	83	468193	45.63	PPBV		100
65)	2-HEXANONE	12.14	43	873970	43.18	PPBV		100
66)	TETRACHLOROETHYLENE	13.04	164	807302	35.84	PPBV		99
67)	DIBROMOCHLOROMETHANE	12.36	129	1147242	37.47	PPBV		100
68)	1,2-DIBROMOETHANE	12.57	107	892045	38.61	PPBV		100
69)	OCTANE	12.80	43	958955	35.04	PPBV		98
70)	1,1,1,2-TETRACHLOROETHANE	13.75	131	821834	37.30	PPBV		99
71)	CHLOROBENZENE	13.77	112	1318702	37.37	PPBV		99
72)	ETHYLBENZENE	14.14	91	2042153	36.98	PPBV		98
73)	m,p-XYLENE	14.33	106	1623842	76.06	PPBV		92
74)	o-XYLENE	14.84	106	784579	38.10	PPBV		96
75)	STYRENE	14.74	104	1157387	40.55	PPBV		100
76)	NONANE	14.99	43	882376	33.32	PPBV		96
77)	BROMOFORM	14.46	173	1106126	38.87	PPBV		98
79)	1,1,2,2-TETRACHLOROETHANE	14.88	83	932286	38.36	PPBV		100
80)	1,2,3-TRICHLOROPROPANE	15.00	75	736702	37.92	PPBV		100
81)	ISOPROPYLBENZENE	15.48	105	2186904	36.93	PPBV		98
82)	2-CHLOROTOLUENE	16.06	126	536004	38.37	PPBV		99
83)	n-PROPYLBENZENE	16.08	120	606300	39.66	PPBV		99
84)	4-ETHYLTOLUENE	16.25	105	1972649	38.98	PPBV		98
85)	1,3,5-TRIMETHYLBENZENE	16.34	105	1606356	37.78	PPBV		98
86)	tert-BUTYLBENZENE	16.82	134	438262	39.87	PPBV	#	92
87)	1,2,4-TRIMETHYLBENZENE	16.83	105	1504053	38.66	PPBV		98
88)	m-DICHLOROBENZENE	17.03	146	1001409	40.09	PPBV		99
89)	BENZYL CHLORIDE	17.03	91	1078867	45.00	PPBV		98
90)	p-DICHLOROBENZENE	17.11	146	949554	41.27	PPBV		98
91)	sec-BUTYLBENZENE	17.13	134	511477	40.36	PPBV	#	88
92)	p-ISOPROPYLTOLUENE	17.32	134	520101	42.47	PPBV		92
93)	o-DICHLOROBENZENE	17.53	146	860527	39.75	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 05 08:35:47 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:34:52 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

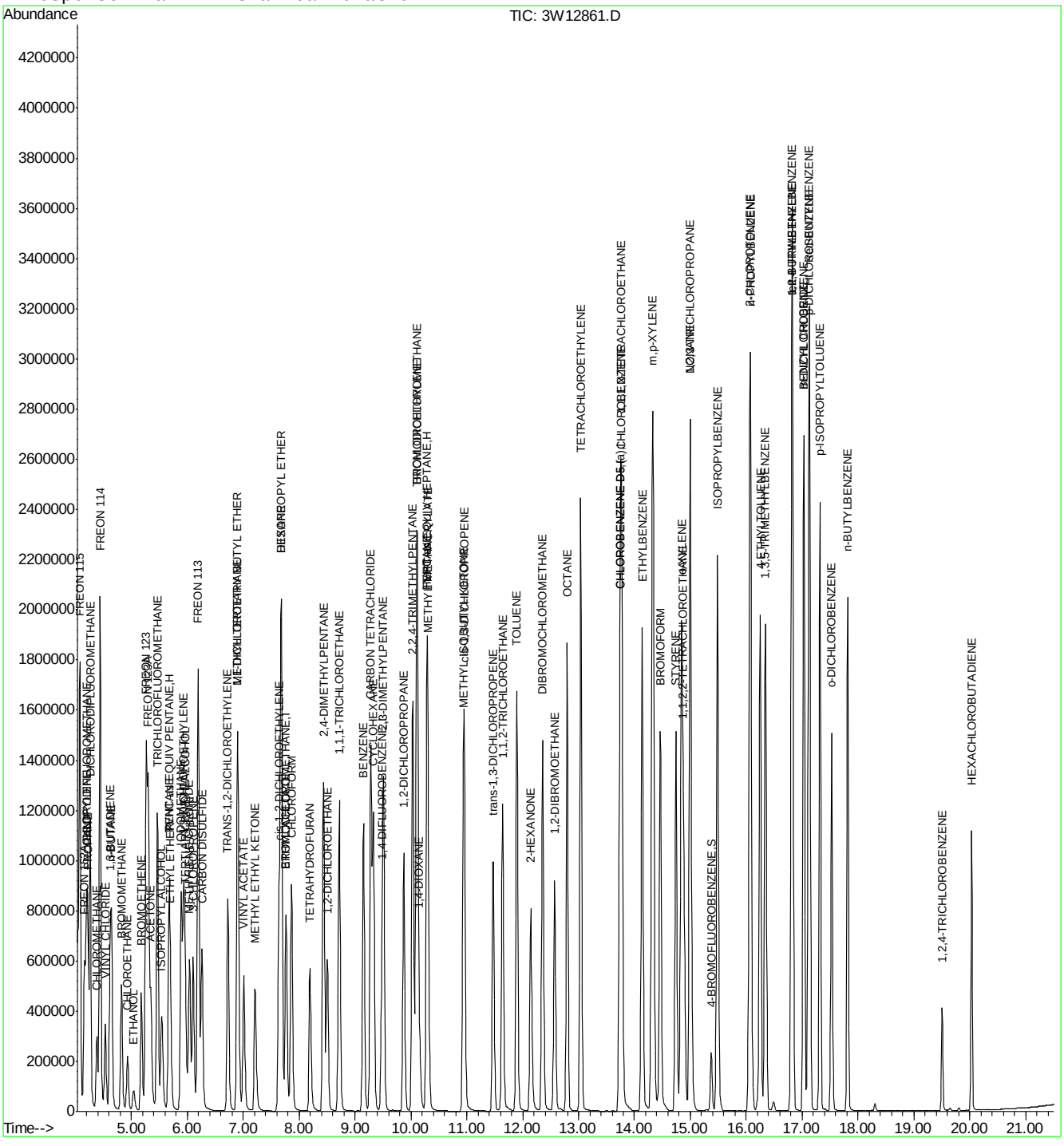
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.81	134	404973	44.79	PPBV	92
95)	HEXACHLOROBUTADIENE	20.03	225	248132	30.55	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.51	180	157247	40.09	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

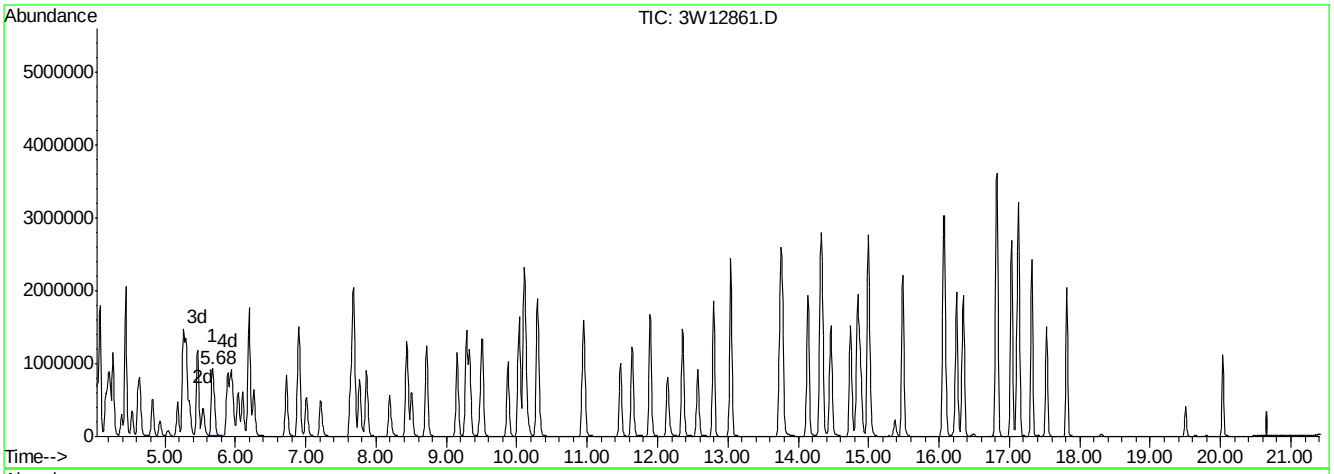


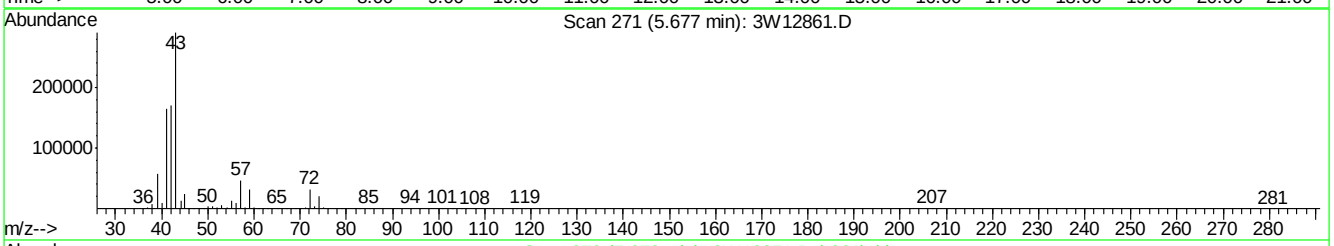
ACCUTEST Laboratories JA28237

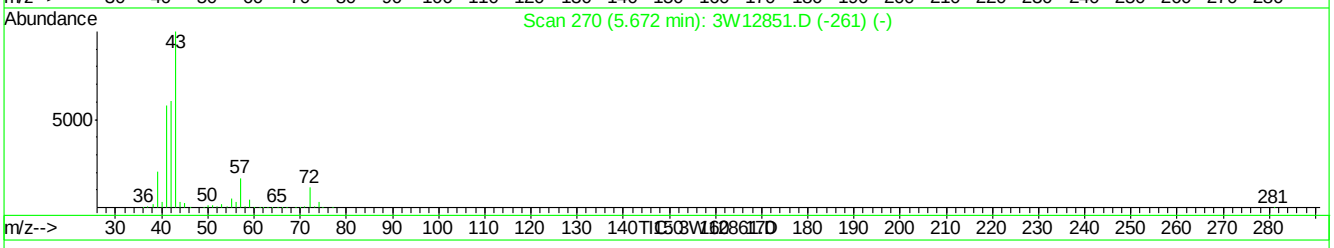
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.68min 43.40PPBV m

response 2862497

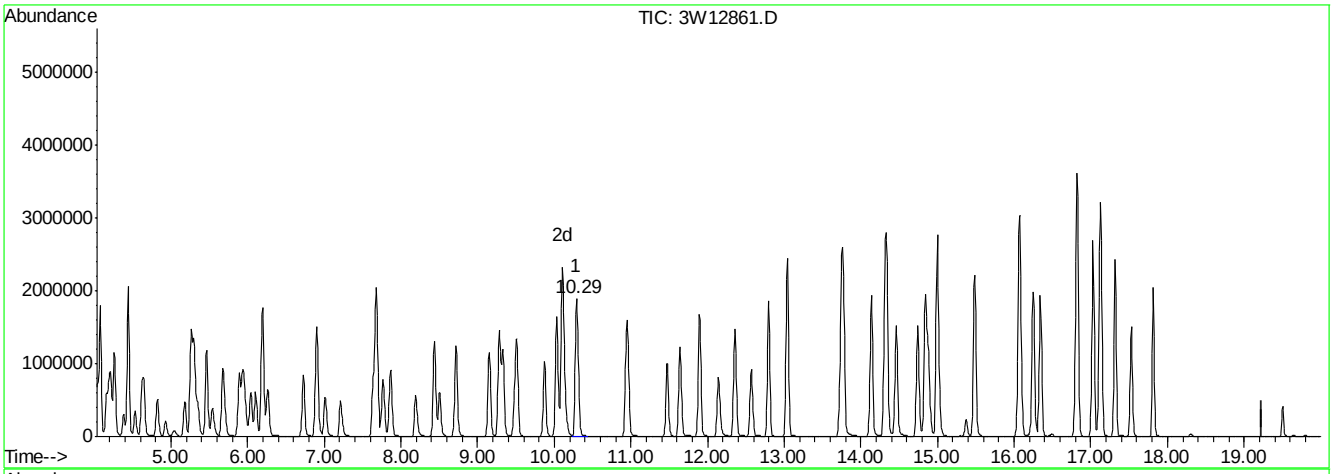
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.03#
0.00	0.00	0.03#
0.00	0.00	0.00

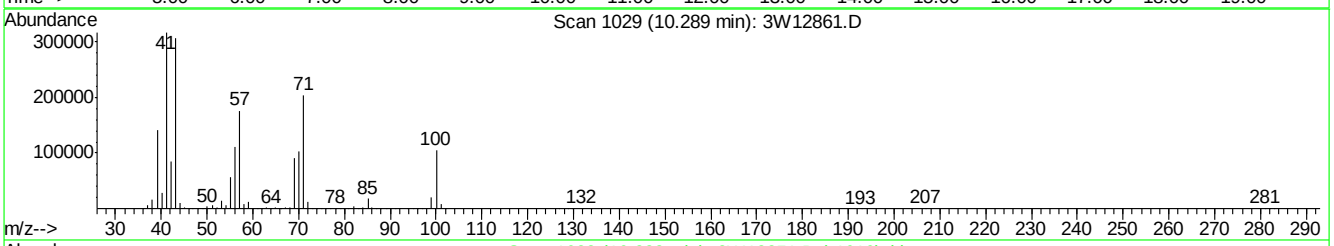
3W12861.D M3W523.M Tue Oct 06 12:28:54 2009 MS3W

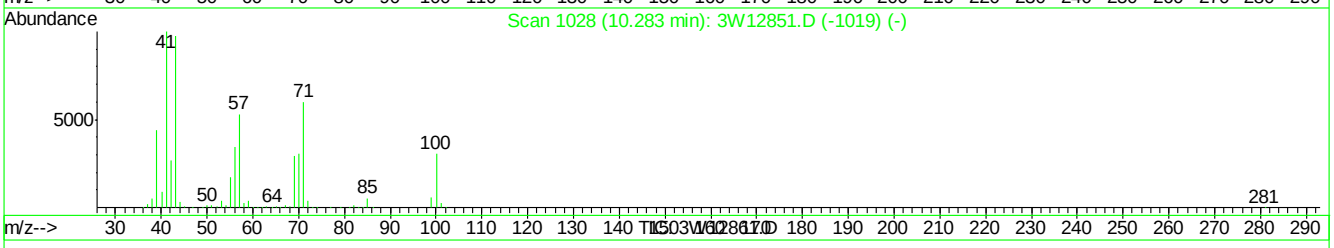
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12861.D Vial: 2
Acq On : 3 Oct 2009 3:45 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 5 8:47 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.29min 46.19PPBV m

response 5448455

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.02#
0.00	0.00	0.02#
0.00	0.00	0.00

3W12861.D M3W523.M Tue Oct 06 12:28:57 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12862.D Vial: 7
Acq On : 3 Oct 2009 4:25 am Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:10:59 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

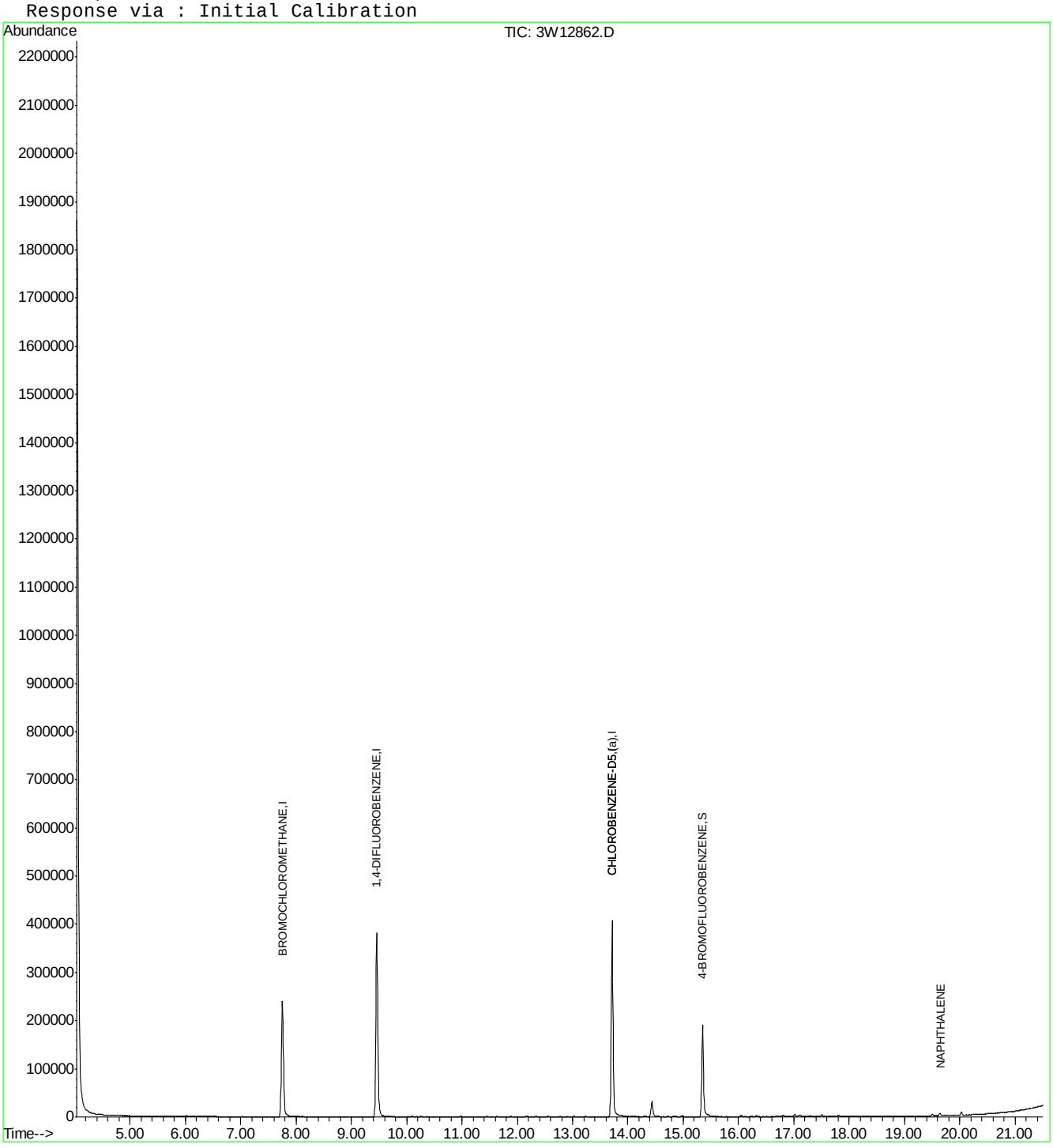
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	98336	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	430117	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	163974	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	163974	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	82129	4.77	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 95.40%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.65	128	5824	0.68	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12862.D Vial: 7
Acq On : 3 Oct 2009 4:25 am Operator: YOUMINH
Sample : IC523-0.5 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:12 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12863.D Vial: 7
Acq On : 3 Oct 2009 5:04 am Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:11:07 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

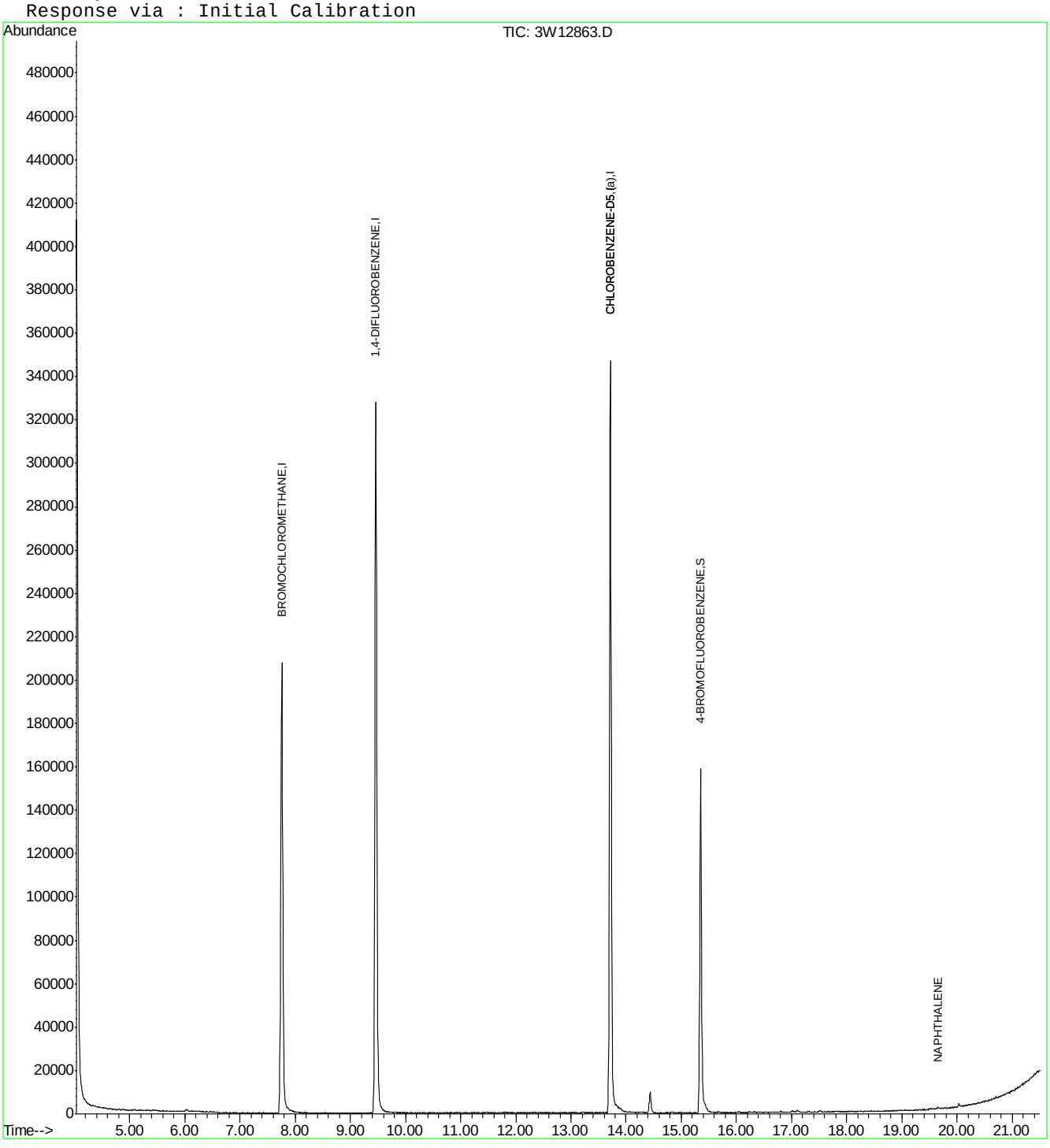
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	81662	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	355221	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	139143	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	139143	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	68581	4.70	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 94.00%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.65	128	1209	0.17	PPBV #	72

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12863.D Vial: 7
Acq On : 3 Oct 2009 5:04 am Operator: YOUMINH
Sample : IC523-0.2 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:13 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



3W12863.D M3W523.M Tue Oct 06 12:25:12 2009 MS3W Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12864.D Vial: 6
Acq On : 3 Oct 2009 6:24 am Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:11:13 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

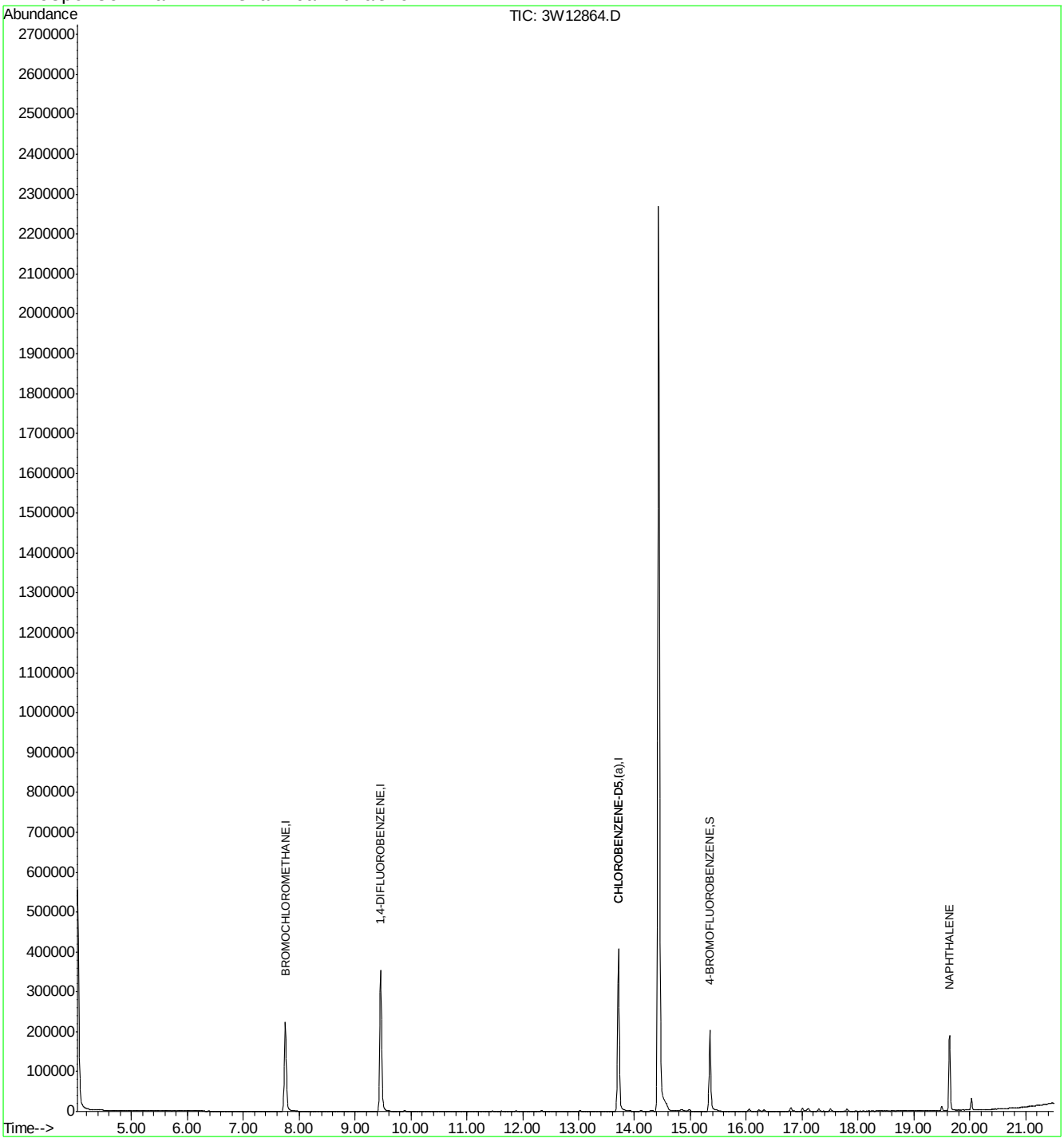
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	87655	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	393462	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	162462	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	162747	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	86665	5.08	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.60%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	172316	20.23	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12864.D Vial: 6
Acq On : 3 Oct 2009 6:24 am Operator: YOUMINH
Sample : IC523-20 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:11 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12865.D Vial: 6
Acq On : 3 Oct 2009 7:06 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:11:20 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

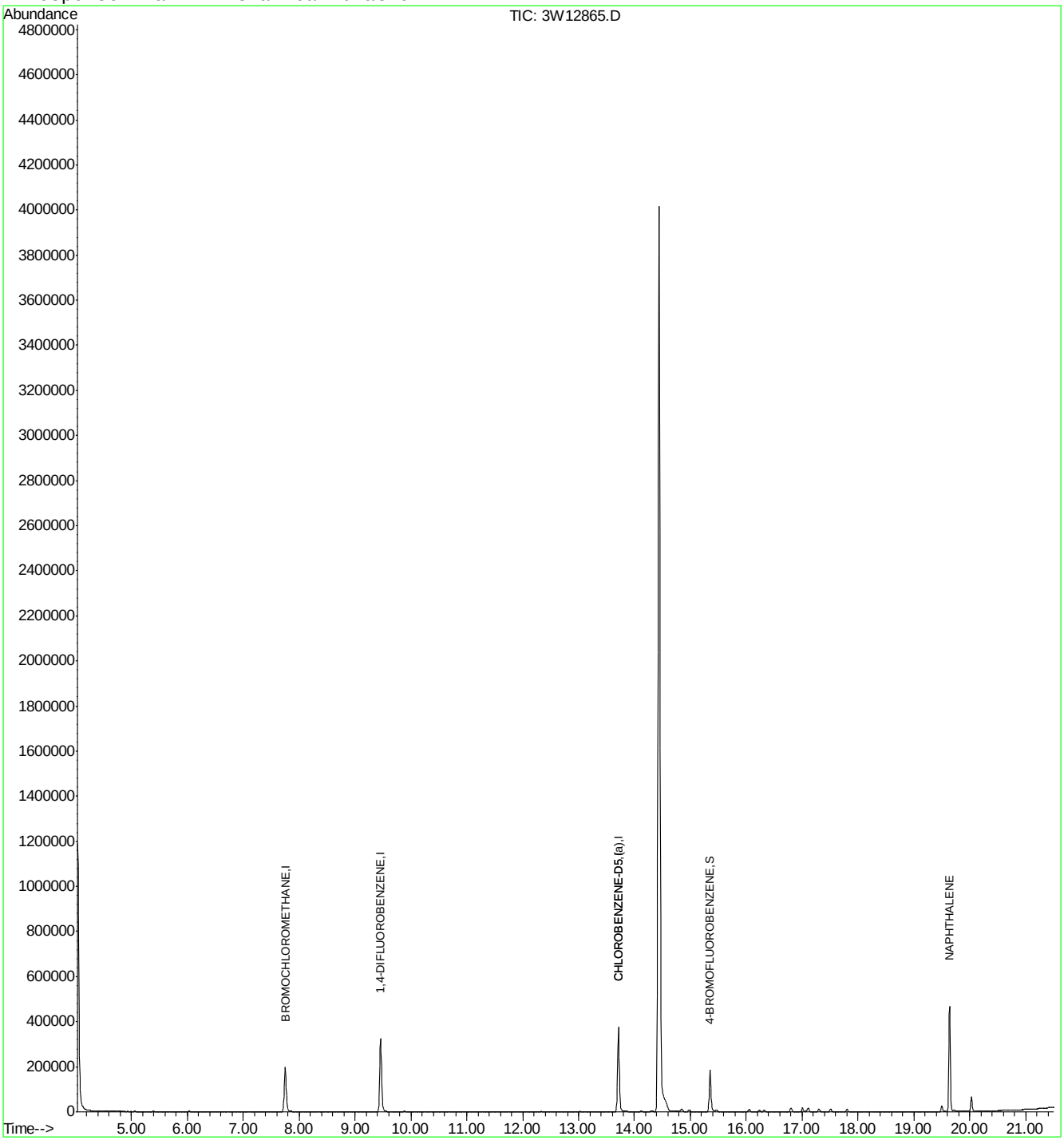
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.75	128	73371	10.00	PPBV	-0.01
47) 1,4-DIFLUOROBENZENE	9.46	114	348551	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	149231	10.00	PPBV	0.00
97) CHLOROBENZENE-D5 (a)	13.71	82	149231	10.00	PPBV	0.00
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.35	95	79314	5.07	PPBV	0.00
Spiked Amount 5.000	Range 65 - 128		Recovery = 101.40%			
Target Compounds						Qvalue
98) NAPHTHALENE	19.64	128	418819	53.62	PPBV	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12865.D Vial: 6
Acq On : 3 Oct 2009 7:06 am Operator: YOUMINH
Sample : IC523-40 Inst : MS3W
Misc : MS49009,V3W523,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:11 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:49 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	89777	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	398659	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	188188	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	188188	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	102696	5.20	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 104.00%			
Target Compounds						Qvalue
2) FREON 115	4.07	85	252429	9.57	PPBV	96
3) FREON 152A	4.16	65	82417	9.93	PPBV	99
4) CHLORODIFLUOROMETHANE	4.19	67	37188	9.23	PPBV	95
5) DICHLORODIFLUOROMETHANE	4.26	85	350007	9.67	PPBV	99
6) PROPANE	4.22	43	48693	10.87	PPBV	100
7) PROPYLENE	4.21	41	138024	10.77	PPBV	99
8) FREON 114	4.44	85	367369	9.67	PPBV	98
9) CHLOROMETHANE	4.38	50	117725	9.00	PPBV	99
10) VINYL CHLORIDE	4.53	62	139574	10.71	PPBV	100
11) 1,3-BUTADIENE	4.61	54	102017	10.97	PPBV	99
12) n-BUTANE	4.64	43	216690	10.70	PPBV	99
13) BROMOMETHANE	4.82	94	129860	10.07	PPBV	100
14) CHLOROETHANE	4.92	64	73936	10.99	PPBV	100
15) FREON 123	5.25	83	300248	10.47	PPBV	99
16) FREON 123A	5.29	117	179648	9.99	PPBV	90
17) TRICHLOROFLUOROMETHANE	5.46	101	349734	9.67	PPBV	100
18) ISOPROPYL ALCOHOL	5.51	45	184191	10.80	PPBV	98
19) ACETONE	5.34	58	53867	10.66	PPBV	96
20) PENTANE	5.67	42	138696	11.32	PPBV	98
21) TVHC as EQUIV PENTANE	5.67	TIC	881397m	12.66	PPBV	
22) ETHYL ETHER	5.69	74	54325	10.96	PPBV	98
23) IODOMETHANE	5.88	142	340817	9.87	PPBV	99
24) 1,1-DICHLOROETHYLENE	5.93	96	115295	9.77	PPBV	96
25) CARBON DISULFIDE	6.26	76	355614	10.18	PPBV	99
26) ETHANOL	5.02	45	38594	9.51	PPBV	99
27) BROMOETHENE	5.17	106	127876	10.28	PPBV	99
28) METHYLENE CHLORIDE	6.03	84	103651	9.56	PPBV	94
29) 3-CHLOROPROPENE	6.10	76	52877	10.61	PPBV #	89
30) FREON 113	6.19	151	206128	9.73	PPBV	95
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	120023	9.90	PPBV	95
32) TERTIARY BUTYL ALCOHOL	5.93	59	233846	11.76	PPBV	98
33) METHYL TERTIARY BUTYL ETHE	6.89	73	306270	10.37	PPBV	97
34) TETRAHYDROFURAN	8.18	72	49538	11.47	PPBV	90
35) HEXANE	7.67	57	181494	11.10	PPBV	99
36) VINYL ACETATE	7.00	86	23315	11.58	PPBV #	78
37) 1,1-DICHLOROETHANE	6.89	63	224299	10.70	PPBV	99
38) METHYL ETHYL KETONE	7.20	72	46739	10.88	PPBV #	83
39) cis-1,2-DICHLOROETHYLENE	7.62	96	119118	9.94	PPBV	96
40) DIISOPROPYL ETHER	7.67	45	336009	11.99	PPBV	98
41) ETHYL ACETATE	7.75	61	28923	10.44	PPBV #	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:49 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
42)	CHLOROFORM	7.84	83	250917	10.09	PPBV	99
43)	2,4-DIMETHYLPENTANE	8.43	57	205302	11.03	PPBV	99
44)	1,1,1-TRICHLOROETHANE	8.71	97	264997	9.93	PPBV	98
45)	CARBON TETRACHLORIDE	9.27	117	282234	10.14	PPBV	99
46)	1,2-DICHLOROETHANE	8.49	62	175071	10.78	PPBV	100
48)	BENZENE	9.14	78	354876	10.65	PPBV	99
49)	CYCLOHEXANE	9.32	56	183198	11.03	PPBV	92
50)	2,3-DIMETHYLPENTANE	9.50	71	76489	10.24	PPBV	95
51)	TRICHLOROETHYLENE	10.10	95	157812	10.46	PPBV	97
52)	1,2-DICHLOROPROPANE	9.86	63	126525	10.54	PPBV	96
53)	BROMODICHLOROMETHANE	10.08	83	260500	11.20	PPBV	100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	539554	10.99	PPBV	99
55)	1,4-DIOXANE	10.13	88	67645	10.29	PPBV	93
56)	HEPTANE	10.27	43	215545	11.06	PPBV	95
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1398909m	11.15	PPBV	
58)	METHYL METHACRYLATE	10.29	69	100239	11.52	PPBV	94
59)	METHYL ISOBUTYL KETONE	10.91	43	213899	11.91	PPBV	97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	190202	11.29	PPBV	98
61)	TOLUENE	11.88	92	237166	10.71	PPBV	100
62)	trans-1,3-DICHLOROPROPENE	11.45	75	177560	11.42	PPBV	97
63)	1,1,2-TRICHLOROETHANE	11.62	83	113468	11.15	PPBV	98
65)	2-HEXANONE	12.11	43	200077	12.38	PPBV	96
66)	TETRACHLOROETHYLENE	13.03	164	181114	9.15	PPBV	97
67)	DIBROMOCHLOROMETHANE	12.33	129	254914	11.15	PPBV	99
68)	1,2-DIBROMOETHANE	12.55	107	195704	10.81	PPBV	99
69)	OCTANE	12.78	43	278882	11.17	PPBV	94
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	182618	9.70	PPBV	99
71)	CHLOROBENZENE	13.76	112	301665	9.94	PPBV	98
72)	ETHYLBENZENE	14.12	91	476344	10.31	PPBV	99
73)	m,p-XYLENE	14.30	106	359359	20.54	PPBV	99
74)	o-XYLENE	14.81	106	171315	10.29	PPBV	99
75)	STYRENE	14.72	104	241181	11.32	PPBV	99
76)	NONANE	14.97	43	257827	11.22	PPBV	97
77)	BROMOFORM	14.43	173	219334	10.86	PPBV	100
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	209946	9.87	PPBV	99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	170022	10.26	PPBV	95
81)	ISOPROPYLBENZENE	15.46	105	487847	9.96	PPBV	99
82)	2-CHLOROTOLUENE	16.04	126	113015	10.25	PPBV	99
83)	n-PROPYLBENZENE	16.05	120	123392	9.58	PPBV	100
84)	4-ETHYLTOLUENE	16.22	105	412678	9.77	PPBV	99
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	347928	9.78	PPBV	99
86)	tert-BUTYLBENZENE	16.79	134	87958	9.33	PPBV	99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	314908	9.89	PPBV	100
88)	m-DICHLOROBENZENE	17.01	146	190744	9.35	PPBV	99
89)	BENZYL CHLORIDE	17.00	91	195022	9.99	PPBV	98
90)	p-DICHLOROBENZENE	17.08	146	174970	9.02	PPBV	99
91)	sec-BUTYLBENZENE	17.11	134	99867	9.38	PPBV	94
92)	p-ISOPROPYLTOLUENE	17.29	134	96664	8.93	PPBV	98
93)	o-DICHLOROBENZENE	17.50	146	165406	8.95	PPBV	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:49 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

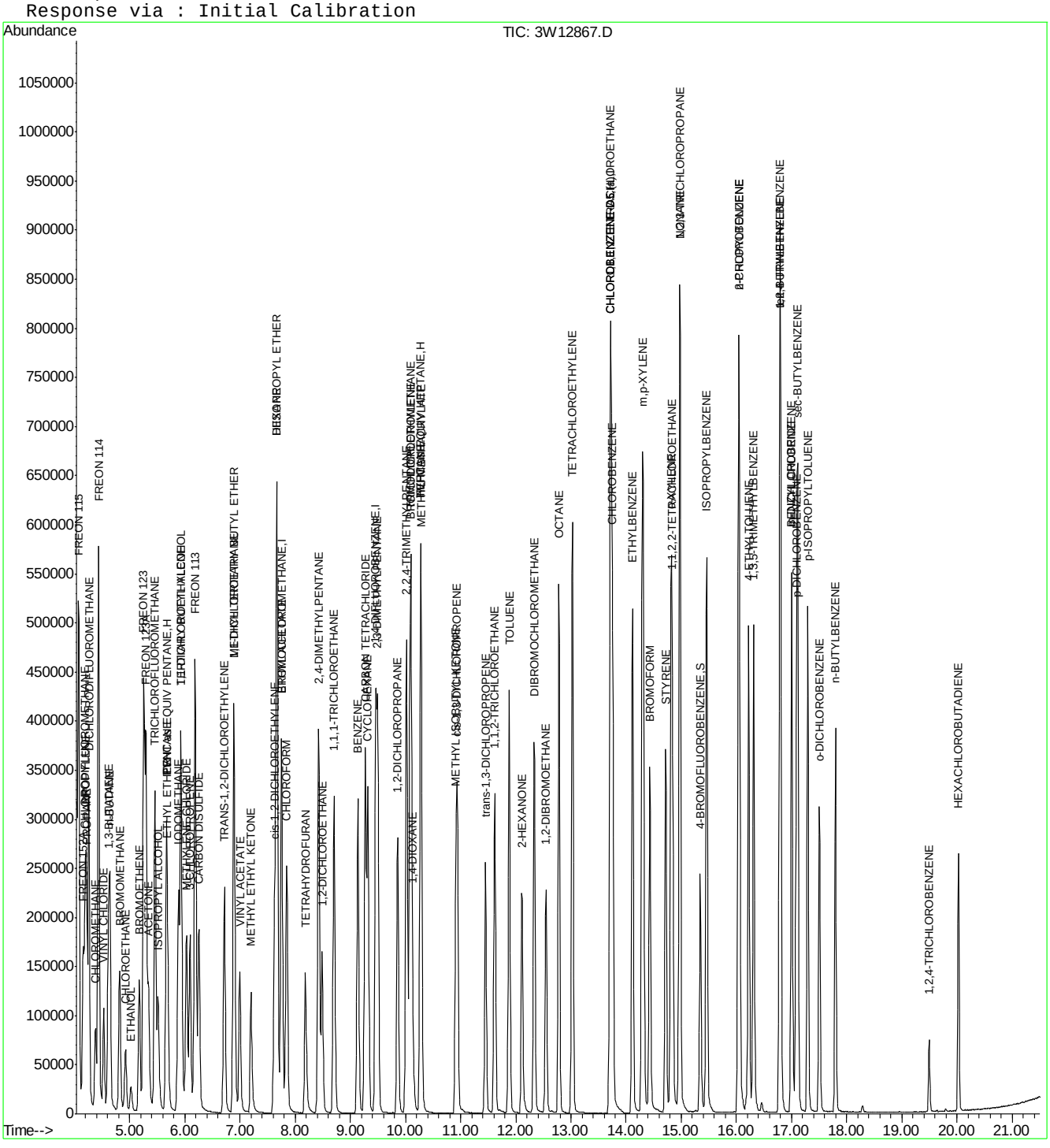
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94) n-BUTYLBENZENE	17.80	134	70135	9.94	PPBV #	90
95) HEXACHLOROBUTADIENE	20.03	225	58500	8.10	PPBV	99
96) 1,2,4-TRICHLOROBENZENE	19.49	180	28024	7.95	PPBV	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:30 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

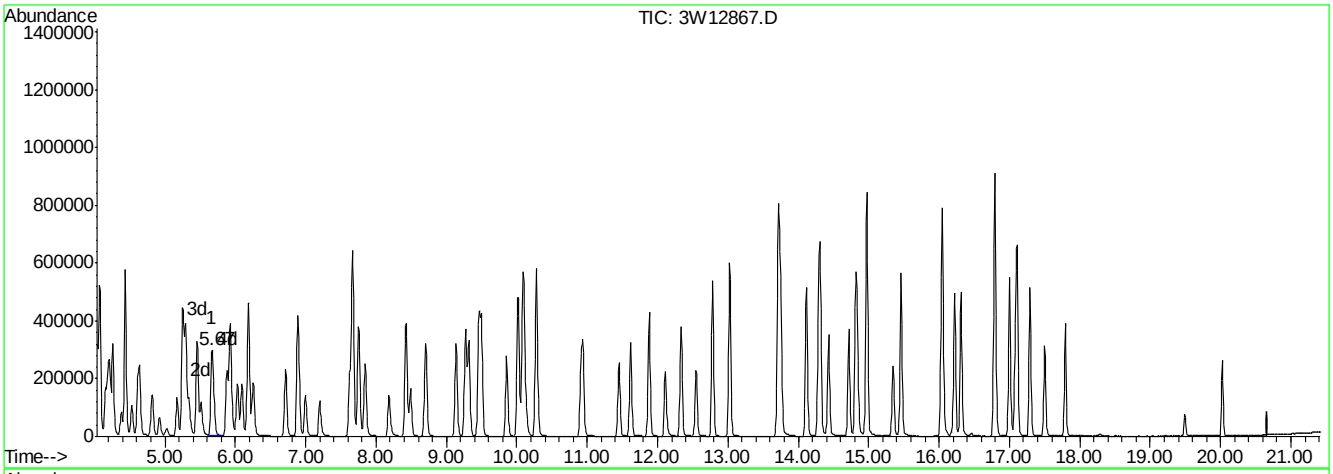


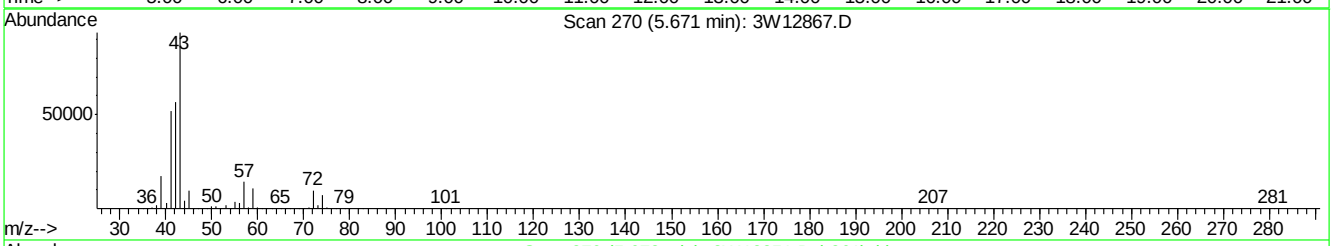
ACCUTEST Laboratories JA28237

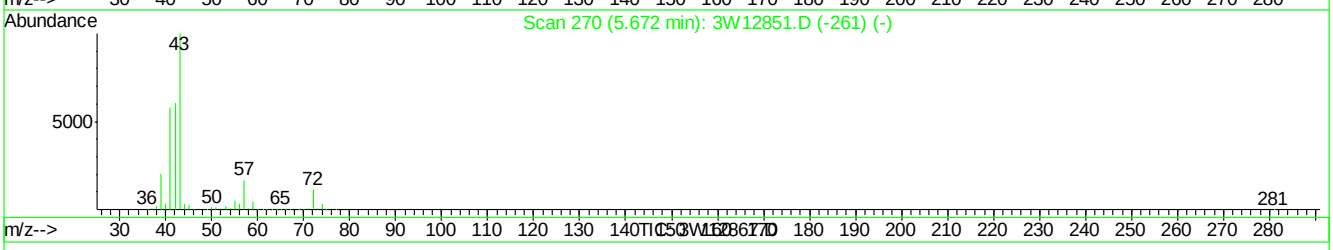
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:30 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.66PPBV m

response 881397

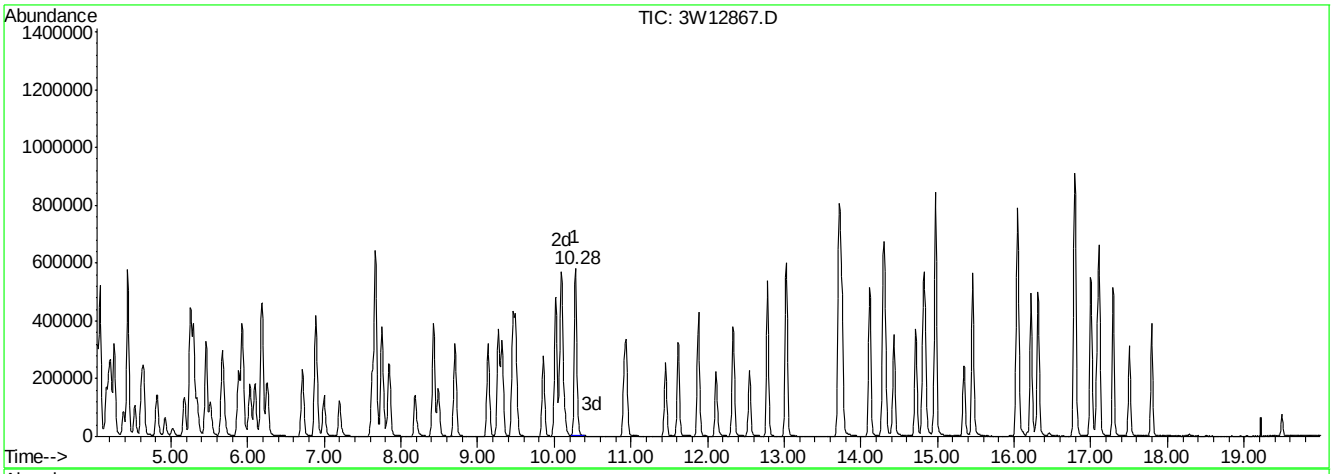
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.01#
0.00	0.00	0.00
0.00	0.00	0.00

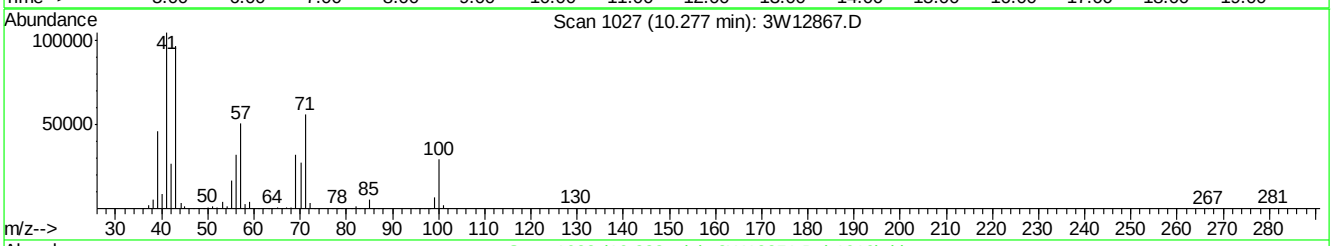
3W12867.D M3W523.M Tue Oct 06 13:02:10 2009 MS3W

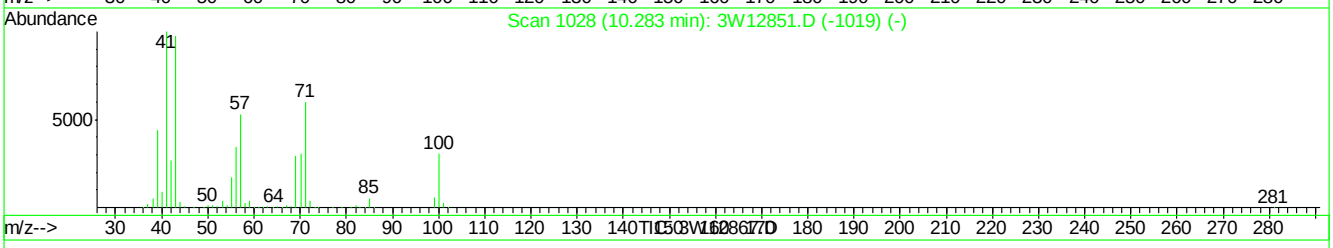
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12867.D Vial: 2
Acq On : 5 Oct 2009 8:32 am Operator: YOUMINH
Sample : CC523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:30 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(57) TVHC as EQUIV HEPTANE (H)

10.28min 11.15PPBV m

response 1398909

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.01#
0.00	0.00	0.00
0.00	0.00	0.00

3W12867.D M3W523.M Tue Oct 06 13:02:14 2009 MS3W

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) BROMOCHLOROMETHANE	7.76	128	95784	10.00	PPBV	0.00
47) 1,4-DIFLUOROBENZENE	9.46	114	413899	10.00	PPBV	0.00
64) CHLOROBENZENE-D5	13.71	82	194989	10.00	PPBV	-0.01
97) CHLOROBENZENE-D5 (a)	13.71	82	194989	10.00	PPBV	-0.01
System Monitoring Compounds						
78) 4-BROMOFLUOROBENZENE	15.34	95	105871	5.18	PPBV	-0.01
Spiked Amount 5.000	Range 65 - 128		Recovery = 103.60%			
Target Compounds						Qvalue
2) FREON 115	4.08	85	248315	8.83	PPBV	96
3) FREON 152A	4.16	65	85161	9.62	PPBV	98
4) CHLORODIFLUOROMETHANE	4.19	67	37104	8.64	PPBV	96
5) DICHLORODIFLUOROMETHANE	4.26	85	337424	8.74	PPBV	100
6) PROPANE	4.23	43	46797	9.79	PPBV	100
7) PROPYLENE	4.21	41	137362	10.05	PPBV	98
8) FREON 114	4.44	85	370213	9.13	PPBV	97
9) CHLOROMETHANE	4.38	50	121560	8.71	PPBV	99
10) VINYL CHLORIDE	4.53	62	141331	10.17	PPBV	100
11) 1,3-BUTADIENE	4.62	54	104530	10.54	PPBV	98
12) n-BUTANE	4.64	43	207799	9.62	PPBV	99
13) BROMOMETHANE	4.82	94	134361	9.76	PPBV	99
14) CHLOROETHANE	4.92	64	75475	10.51	PPBV	99
15) FREON 123	5.26	83	312099	10.20	PPBV	99
16) FREON 123A	5.29	117	185857	9.68	PPBV	91
17) TRICHLOROFLUOROMETHANE	5.46	101	350879	9.09	PPBV	100
18) ISOPROPYL ALCOHOL	5.52	45	193157	10.62	PPBV	97
19) ACETONE	5.34	58	55160	10.23	PPBV	92
20) PENTANE	5.67	42	142947	10.93	PPBV	95
21) TVHC as EQUIV PENTANE	5.67	TIC	892082m	12.01	PPBV	
22) ETHYL ETHER	5.70	74	56560	10.69	PPBV	99
23) IODOMETHANE	5.88	142	357370	9.70	PPBV	97
24) 1,1-DICHLOROETHYLENE	5.93	96	119748	9.51	PPBV	99
25) CARBON DISULFIDE	6.26	76	364133	9.77	PPBV	99
26) ETHANOL	5.03	45	41554	9.60	PPBV	99
27) BROMOETHENE	5.18	106	131284	9.89	PPBV	98
28) METHYLENE CHLORIDE	6.03	84	107173	9.27	PPBV	94
29) 3-CHLOROPROPENE	6.10	76	55581	10.45	PPBV #	93
30) FREON 113	6.19	151	212480	9.40	PPBV	94
31) TRANS-1,2-DICHLOROETHYLENE	6.72	96	124082	9.59	PPBV	96
32) TERTIARY BUTYL ALCOHOL	5.94	59	245937	11.59	PPBV	99
33) METHYL TERTIARY BUTYL ETHE	6.89	73	313462	9.95	PPBV	97
34) TETRAHYDROFURAN	8.18	72	50388	10.93	PPBV	91
35) HEXANE	7.67	57	187433	10.74	PPBV	99
36) VINYL ACETATE	7.00	86	23941	11.14	PPBV #	77
37) 1,1-DICHLOROETHANE	6.89	63	232243	10.39	PPBV	99
38) METHYL ETHYL KETONE	7.20	72	48824	10.65	PPBV #	86
39) cis-1,2-DICHLOROETHYLENE	7.63	96	123151	9.63	PPBV	96
40) DIISOPROPYL ETHER	7.67	45	342683	11.46	PPBV	99
41) ETHYL ACETATE	7.75	61	29650	10.03	PPBV #	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
42)	CHLOROFORM	7.85	83	258226	9.73	PPBV		99
43)	2,4-DIMETHYLPENTANE	8.43	57	213908	10.78	PPBV		99
44)	1,1,1-TRICHLOROETHANE	8.71	97	270721	9.51	PPBV		98
45)	CARBON TETRACHLORIDE	9.27	117	287630	9.68	PPBV		100
46)	1,2-DICHLOROETHANE	8.49	62	178473	10.30	PPBV		100
48)	BENZENE	9.14	78	368521	10.65	PPBV		99
49)	CYCLOHEXANE	9.32	56	187085	10.85	PPBV	#	80
50)	2,3-DIMETHYLPENTANE	9.50	71	79331	10.23	PPBV		96
51)	TRICHLOROETHYLENE	10.10	95	163202	10.42	PPBV		98
52)	1,2-DICHLOROPROPANE	9.86	63	131324	10.54	PPBV		94
53)	BROMODICHLOROMETHANE	10.08	83	268533	11.12	PPBV		100
54)	2,2,4-TRIMETHYLPENTANE	10.02	57	562488	11.04	PPBV		99
55)	1,4-DIOXANE	10.14	88	68093	9.98	PPBV		92
56)	HEPTANE	10.28	43	222782	11.01	PPBV		96
57)	TVHC as EQUIV HEPTANE	10.28	TIC	1449604m	11.13	PPBV		
58)	METHYL METHACRYLATE	10.29	69	103126	11.41	PPBV		94
59)	METHYL ISOBUTYL KETONE	10.92	43	225399	12.08	PPBV		97
60)	cis-1,3-DICHLOROPROPENE	10.94	75	196431	11.23	PPBV		99
61)	TOLUENE	11.88	92	248573	10.81	PPBV		99
62)	trans-1,3-DICHLOROPROPENE	11.45	75	184275	11.41	PPBV		98
63)	1,1,2-TRICHLOROETHANE	11.62	83	118555	11.22	PPBV		98
65)	2-HEXANONE	12.11	43	207338	12.38	PPBV		97
66)	TETRACHLOROETHYLENE	13.03	164	191081	9.31	PPBV		98
67)	DIBROMOCHLOROMETHANE	12.33	129	267126	11.27	PPBV		99
68)	1,2-DIBROMOETHANE	12.55	107	205031	10.93	PPBV		100
69)	OCTANE	12.78	43	288898	11.17	PPBV		94
70)	1,1,1,2-TETRACHLOROETHANE	13.73	131	192225	9.85	PPBV		100
71)	CHLOROBENZENE	13.76	112	318926	10.15	PPBV		99
72)	ETHYLBENZENE	14.12	91	498778	10.42	PPBV		100
73)	m,p-XYLENE	14.30	106	382379	21.10	PPBV		99
74)	o-XYLENE	14.82	106	184522	10.70	PPBV		100
75)	STYRENE	14.72	104	253301	11.47	PPBV		100
76)	NONANE	14.97	43	271169	11.39	PPBV		97
77)	BROMOFORM	14.43	173	239101	11.42	PPBV		99
79)	1,1,2,2-TETRACHLOROETHANE	14.84	83	234447	10.64	PPBV		99
80)	1,2,3-TRICHLOROPROPANE	14.97	75	184972	10.77	PPBV		95
81)	ISOPROPYLBENZENE	15.46	105	519454	10.23	PPBV		100
82)	2-CHLOROTOLUENE	16.04	126	122559	10.72	PPBV		100
83)	n-PROPYLBENZENE	16.05	120	134349	10.07	PPBV		99
84)	4-ETHYLTOLUENE	16.22	105	444717	10.16	PPBV		99
85)	1,3,5-TRIMETHYLBENZENE	16.31	105	372500	10.11	PPBV		100
86)	tert-BUTYLBENZENE	16.79	134	94897	9.72	PPBV		99
87)	1,2,4-TRIMETHYLBENZENE	16.80	105	342315	10.38	PPBV		99
88)	m-DICHLOROBENZENE	17.01	146	216925	10.27	PPBV		99
89)	BENZYL CHLORIDE	17.00	91	225006	11.13	PPBV		98
90)	p-DICHLOROBENZENE	17.08	146	200359	9.97	PPBV		99
91)	sec-BUTYLBENZENE	17.11	134	109108	9.89	PPBV		94
92)	p-ISOPROPYLTOLUENE	17.29	134	107525	9.59	PPBV		99
93)	o-DICHLOROBENZENE	17.50	146	195150	10.19	PPBV		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 09:01:51 2009 Quant Results File: M3W523.RES

Quant Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration
DataAcq Meth : TO153W

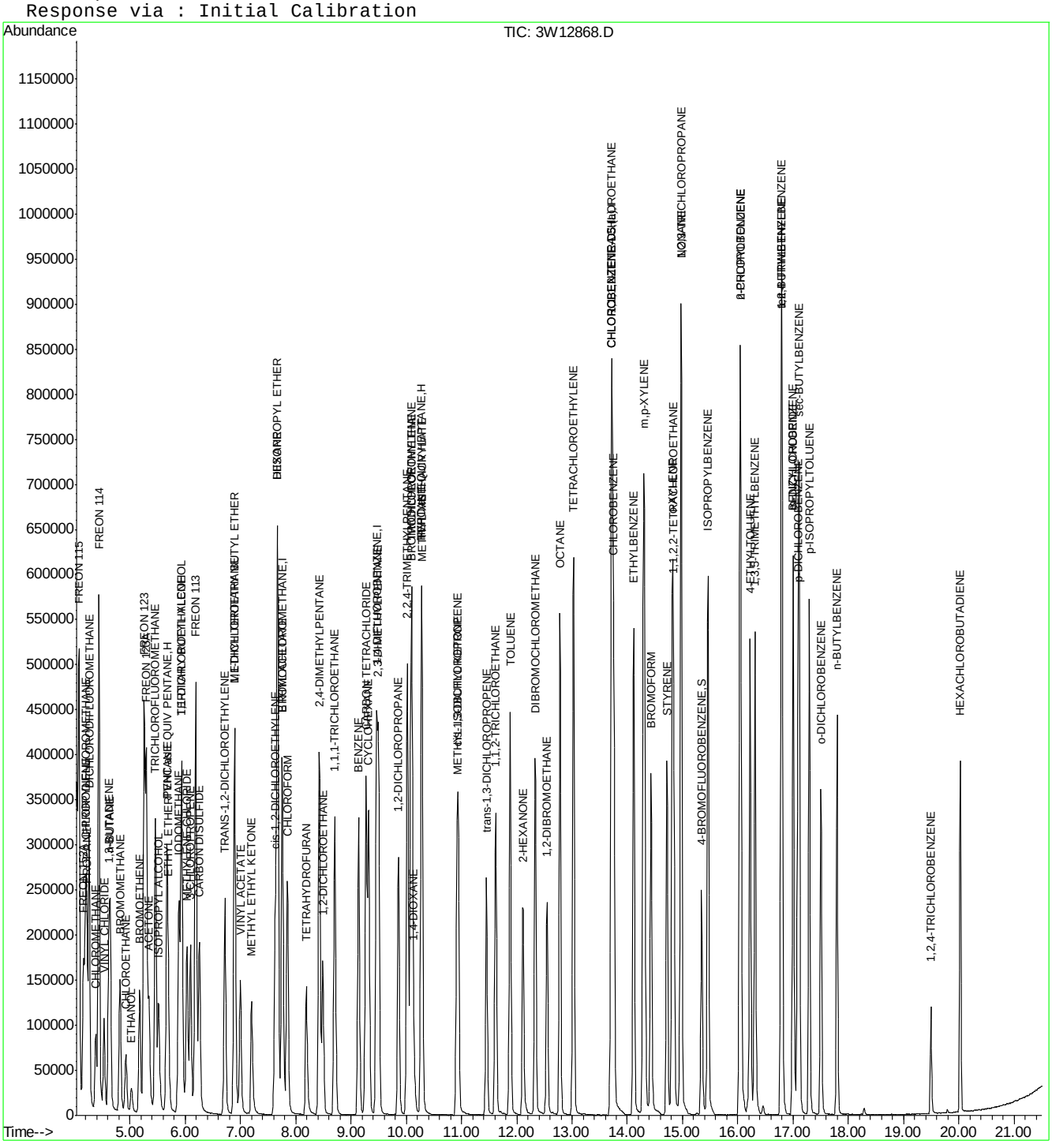
	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
94)	n-BUTYLBENZENE	17.80	134	79800	10.92	PPBV	91
95)	HEXACHLOROBUTADIENE	20.03	225	86805	11.60	PPBV	100
96)	1,2,4-TRICHLOROBENZENE	19.49	180	46397	12.71	PPBV	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : BS Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: M3W523.RES

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Initial Calibration

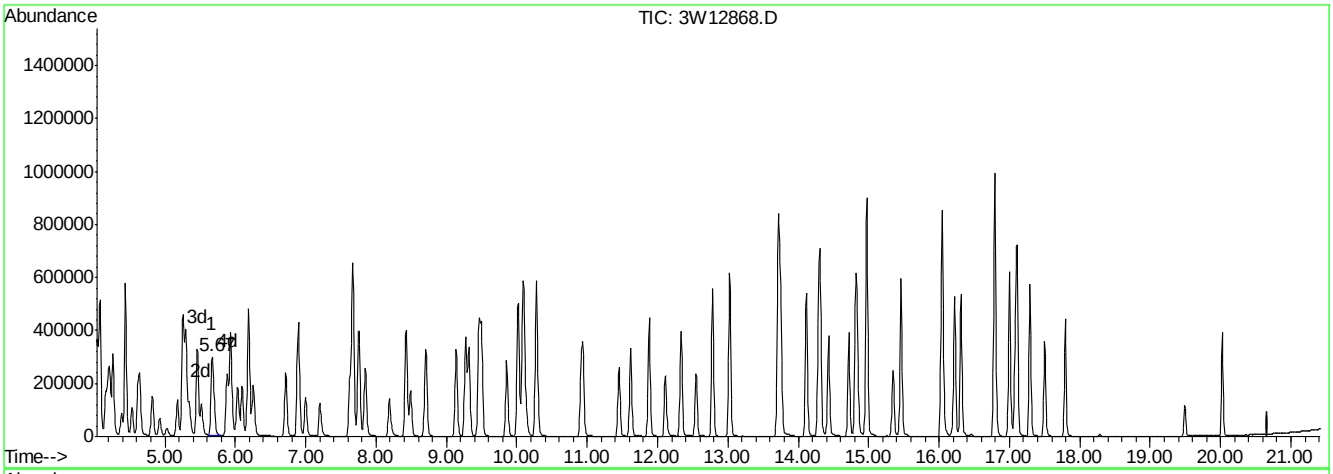


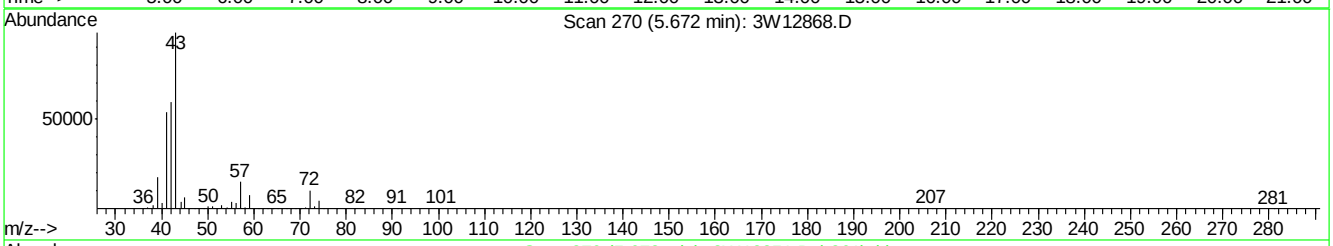
ACCUTEST Laboratories JA28237

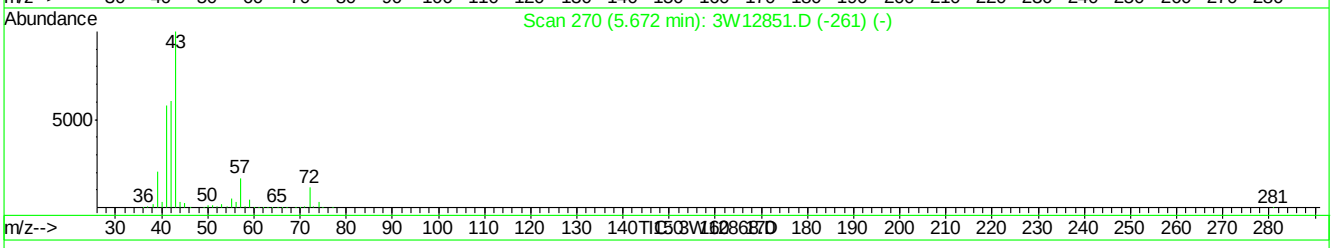
Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration







(21) TVHC as EQUIV PENTANE (H)

5.67min 12.01PPBV m

response 892082

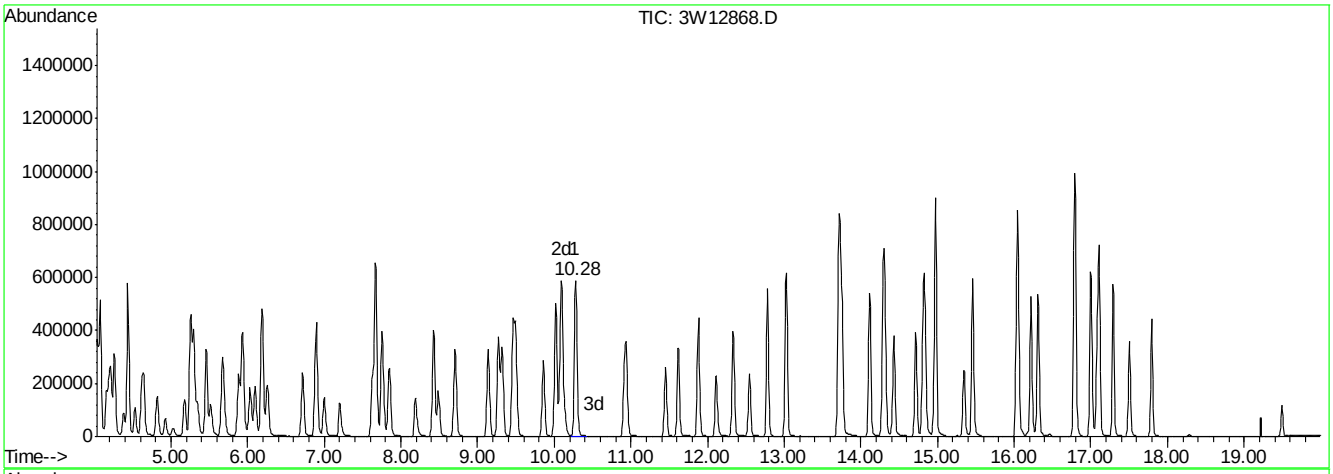
Signal	Exp%	Act%
TIC	100	100
0.00	0.10	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:07 2009 MS3W

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\3W12868.D Vial: 3
Acq On : 5 Oct 2009 10:00 am Operator: YOUMINH
Sample : ICV523-10 Inst : MS3W
Misc : MS49009,V3W524,,,,,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:19 2009 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\M3W523.M (RTE Integrator)
Title : TO15 by GCMS w/Rtx-1, 60 m X 0.32mm ID X 1.0 um
Last Update : Mon Oct 05 08:55:42 2009
Response via : Multiple Level Calibration



(57) TVHC as EQUIV HEPTANE (H)

10.28min 11.13PPBV m

response 1449604

Signal	Exp%	Act%
TIC	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

3W12868.D M3W523.M Tue Oct 06 12:20:10 2009 MS3W

ACCUTEST

TO-14/TO-15

Batch ID: V2W1070

Date: 9/5/09

Analyst Signature: [illegible]

Columns: RTX-1 60M X.32mm ID

Method: TO15 2W.M

Seq. File: 2W090509.S

Initial Cal. Method: M2W1070

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.
AS 4004	IS/Surr	40/20ppbv

Standard Data

Lot #	Description	Conc.
AS4018	TO15STD	40ppbv
AS4019	TO15STD	2.0ppbv
AS4020	TO15STD	0.4ppbv
AS4017	TO15LCS	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 9/9/09.

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25355	BFB		A777	100					OK	
2	2W25356	ICC1070-10		A663	100			✓	✓	OK	
1	2W25357	IC1070-0.5		A669	100			✓	✓	OK	
2	2W25358	IC1070-5.0		A663	50			✓	✓	notused	
1	2W25359	IC1070-0.2		A669	40			✓	✓	OK	
2	2W25360	IC1070-20		A663	200			✓	✓	OK	
2	2W25361	IC1070-5.0		A663	50			✓	✓	OK	
4	2W25362	IC1070-0.1		A855	100			✓	✓	OK	
4	2W25363	IC1070-0.04		A855	40			✓	✓	OK	
2	2W25364	IC1070-40		A663	400			✓	✓	OK	
					YH						

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

TO-14/TO-15

ACCUTEST

Batch ID: V2W1071

Date: 9/6/09

Analyst Signature: [signature]

Columns: RTX-1 60MX.32mmID

Method: TO15 2W.M

Seq. File: 2W090609.S

Initial Cal. Method: M2W1070

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4018	TO15STD	40ppbv
AS4017	TO15LCS	40ppbv
AS4004	IS/Surr	40/20ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/9/09.

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25365	BFB		A777	100					OK	
2	2W25366	CC1070-10		A663	100			—	✓	OK	
3	2W25367	BS		A816	100			—	—	OK	
3	2W25368	BSD		A816	100			—	—	OK	
5	2W25369	MB		A885	400			—	—	OK	
6	2W25370	JA26463-1	STD+	Airbag	100	1		—	—	OK	
7	2W25371	JA26463-2	↓	Airbag	100	1		—	—	OK/DL	RR 2x
8	2W25372	JA26463-3	↓	Airbag, A580	80	100		—	—	OK	
9	2W25373	JA26463-4	↓	Airbag	100	1		—	—	OK/DL	RR 5x
10	2W25374	JA26506-1	STD	A133	400	1		—	—	RR	possible c/o
11	2W25375	~~JA256~~ JA26506-2	↓	A464	400	1		—	—	OK	
12	2W25376	JA26506-3	↓	A766	400	1		—	—	OK	
13	2W25377	JA26506-4	↓	A099	400	1		—	—	OK	
13	2W25378	JA26506-40up	↓	A099	400	1		—	—	OK	
14	2W25379	JA26506-5	↓	A644	400	1		—	—	OK	
15	2W25380	JA26506-6	↓	A238	400	1		—	—	OK	
16	2W25381	JA26506-7	↓	A092	400	1		—	—	OK	
1	2W25382	JA26506-8	↓	A135	400	1		—	—	OK	
3	2W25383	JA26024-1	STD	A744, A506	100	120		—	—	OK	
4	2W25384	JA26024-2	↓	A647, A785	100	23		—	—	OK	
6	2W25385	JA26082-1	STD	A843	400	1		—	↑	OK/DL	RR 10x
7	2W25386	JA26151-1	STD	A769	100	1		—	—	RR	c/o RR 2x
8	2W25387	JA26160-1	STD	A892	400	1		—	—	OK/DL	RR 2x
9	2W25388	JA26160-2	↓	A476	400	1		—	—	OK	
5	2W25389	SCC		A496	400	1		✓	✓	OK	
	2W25390										

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/6/09	YH	JA26463-3	Airbag	0	0	1	A 580	1000	20	14.7	2000	100	100
9/6/09	YH	JA26024-1	A744	-3.0	1.2	1.2	A506	1000	20	14.7	2000	100	120
9/6/09	YH	JA26024-2	~~A785~~ A64	-2.0	1.1	1.15	A 785	1000	100	14.7	2000	20	23

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalclulation, # 4 = Analyst's Correction Error

TO-14/TO-15

ACCUTEST

Batch ID: V2W1073

Date: 9/9/09

Analyst Signature: [signature]

Columns: RTX-1 60MX.32mmID

Method: TO15 2W.M

Seq. File: 2W090909.S

Initial Cal. Method: M2W1070

AS Data

Method:	TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4018	TO15STD	40ppbv
AS4017	TO15LCS	40ppbv
AS4004	IS/SURR	40/20ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] **Date:** 9/10/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25417	BFB		A885	100					OK	
2	2W25418	CC1070-10		A663	100			✓	✓	~~OK~~	not used
2	2W25419	CC1070-10		A663	100			✓	✓	OK	
3	2W25420	BS		A816	100			✓	✓	OK	
3	2W25421	BSD		A816	100			✓	✓	OK	
5	2W25422	MB		A885	400			✓	✓	OK	
6	2W25423	JA26463-2	STD+	Airbag	40	1		✓	✓	OK	
7	2W25424	JA26463-4	↓	Airbag, A496	200	20		✓	✓	OK	
8	2W25425	SCC		A817	400	1		✓	✓	OK	
9	2W25426	JA26711-1	STD	A815	620	1.55		✓	✓	OK	
10	2W25427	JA27379-1	STD	Airbag, A419	80	100		✓	✓	OK	
11	2W25428	JA27379-2	↓	Airbag, A537	80	100		✓	✓	OK	
12	2W25429	JA27379-3	↓	Airbag, A593	80	100		✓	✓	OK	
13	2W25430	JA27379-5	↓	Airbag, A714	80	100		✓	✓	OK	
14	2W25431	JA26160-3	STD	A758	400	1		✓	✓	OK/DL	DL RR 16ml
15	2W25432	JA26160-4	↓	A325	400	1		✓	✓	OK	
16	2W25433	JA26160-5	↓	A321	592	1.48		✓	✓	OK	
16	2W25434	JA26160-5Dup	↓	A321	592	1.48		✓	✓	OK	
1	2W25435	JA26160-6	↓	A716	200	1		✓	✓	OK	
3	2W25436	JA26160-7	↓	A427	200	1		✓	✓	OK	
4	2W25437	JA26160-8	↓	A428	200	1		✓	✓	OK	
6	2W25438	JA27422-1	STD	A281, A573	200	27.5		✓	↑	OK	RR for CF
7	2W25439	JA26161-1	STD	A673	400	1		✓	✓	OK	
8	2W25440	JA26161-2	↓	A364	400	1		✓	✓	OK	
9	2W25441	JA26161-3	↓	A486	400	1		✓	✓	OK	
10	2W25442	JA26161-4	↓	A851	400	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

5	2W25443	SCC	A590	400	1		✓	✓	OK

Form: AT008-04

Rev. Date: 6/13/06

ACCUTEST Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/9/09	YH	JA26463-4	Airbag	0	0	1	A496	1000	100	14.7	2000	20	20
9/9/09	YH	JA27379-1	Airbag	0	0	1	A419	1000	20	14.7	2000	100	100
9/9/09	YH	JA27379-2	Airbag	0	0	1	A537	1000	20	14.7	2000	100	100
9/9/09	YH	JA27379-3	Airbag	0	0	1	A593	1000	20	14.7	2000	100	100
9/9/09	YH	JA27379-5	Airbag	0	0	1	A714	1000	20	14.7	2000	100	100
9/9/09	YH	JA27422-1	A281	-0.5	1.2	1.1	A573	1000	80	14.7	2000	25	22.5

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

ACCUTEST

TO-14/TO-15

Batch ID: V2W 1075

Date: 09/11/2009

Analyst Signature: RKJ

Columns: RTx-1, 60mx0.32mmx1.0um
Method: TO15 2W. M
Seq. File: 2W091109.S
Initial Cal. Method: M2W1070

AS Data

Method: TO15. MPT

Standard Data

Lot #	Description	Conc.

Standard Data

	Lot #	Description	Conc.
AS	4004	IS/Surr	40/200ppbv
AS	4018	TO15 STD	40ppbv
AS	4017	TO15 LCS	40ppbv

6.8.4 6

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [signature] Date: 9/14/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	2W25471	BFB		A885	100					OK	
2	2W25472	CC 1070-10		A663	100			✓	✓	OK	
3	2W25473	BS		A816	100			✓	✓	OK	
3	2W25474	BSD		A816	100			✓	✓	OK	
5	2W25475	MB		A885	400			✓	✓	OK	
6	2W25476	JA26162-1CF	STD	A404	20	1		✓	↑	OK	
7	2W25477	JA26162-2CF	↓	A501, A681	200	29		✓	↑	OK	
8	2W25478	JA26162-3	↓	A504, A394	100	31		✓	✓	OK	
9	2W25479	JA27262-4	SL	A460	100	1		✓	✓	OK	
10	2W25480	JA27262-2	↓	A510	100	1		✓	✓	OK	
11	2W25481	JA27262-3	↓	A572	100	1		✓	✓	OK	
12	2W25482	SCC		A674	400	1		✓	✓	OK	
13	2W25483	JA26852-1	STD	A277, A549	160	23		✓	✓	OK	RR 50ml
13	2W25484	JA26852-10up	↓	A277, A549	160	23		✓	✓	OK	
14	2W25485	JA26852-2	↓	A468	100	1		✓	✓	OK	
15	2W25486	JA26852-3	↓	A359	100	1		✓	✓	OK	
16	2W25487	JA26958-1	BTXM	A411	YH ~~LAS~~	1.13		✓	✓	OK	113ml
1	2W25488	JA26958-2	↓	A712	YH ~~LAS~~	1.13		✓	✓	OK	113ml
3	2W25489	JA26879-1	STD+	A353	400	1		✓	✓	OK	
4	2W25490	JA26879-2	↓	A475	400	1		✓	✓	OK	
6	2W25491	JA26879-3	↓	A340	400	1		✓	✓	OK	
7	2W25492	JA26879-4	↓	A661	400	1		✓	✓	OK	
8	2W25493	JA26879-5	↓	A856	50	1		✓	✓	YH ~~OK~~ RR	RR 100ml tentativeted
9	2W25494	JA26879-6	↓	A826	100	1		✓	✓	OK	
10	2W25495	JA27118-1	STD	A780	20	1		✓	✓	OK	
11	2W25496	JA27118-2	↓	A898	80	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

Laboratories

Canister Secondary Dilution Log

			Original Canister Dilution				Secondary Canister Dilution						
Date	Initials	Accutest Sample ID	Canister ID	Vacuum in "Hg at time of Dilution	Final Pressure psig	Dilution Factor	Canister ID	Canister Volume CC	Sample Volume Added CC	Final Pressure psig	Equiv Total Volume CC	Dilution Factor	Final Canister Dilution Factor
9/11/09	YH	JA26852-1	A277	-2.0	1.1	1.15	A549	1000	100	14.7	2000	20	23

Definition:

Final DF = (Original Canister DF) x (Secondary Canister DF)

Dilution Factor at Instrument = (Final Canister Dilution Factor) x (Normal Sampling Volume in cc) / (Sample Volume in cc Injected)

Example:

Original Canister is diluted 2x for manual sample draw. 75cc from this canister is added to a 375cc minican and brought to 14.7 psig or 750cc equiv volume. This results in an additional dilution of 750/75 or 10. The final canister dilution factor is 2 x 10 = 20. From the dilution canister 20cc is injected at the instrument where normal volume is 400cc. This is an additional instrument dilution factor of 20. The final dilution multiplier is 20(from canister dilution) x 20(from instrument dilution) = 400

Notes:

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error; # 3 = Computer Miscalclulation, # 4 = Analyst's Correction Error

Form: AT003-03

ACCUTEST

TO-14/TO-15

Batch ID: V2W1075

Date: 9/11/09

Analyst Signature: [illegible]

Columns: RTX-1 60M X.32mm ID

Method: TO15 2W.M

Seq. File: 2W091109.S

Initial Cal. Method: M2W1070

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS 4004	IS/Surr	40/20ppbv
AS 4018	TO15 STD	40ppbv
AS 4017	TO15 CCS	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 9/14/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
12	2W25497	~~A6~~ YH	STD	A639	20	1		✓	✓	OK	JA27118-3
5	2W25498	SCC		A886	400	1		✓	✓	RR	Carryover
						YH					

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: V3W523

Date: 10/02/2009

Analyst Signature: RT

Columns: RTX-1, 60m/0.32mm/1.0um

Method: TO153W.M

Seq. File: 3W100209.S

Initial Cal. Method: M3W518

AS Data

Method: TO15.MPT

Standard Data

Lot #	Description	Conc.
AS 4065	IS/Surr	40/20ppbv
AS 4076	Naphthalene	40ppbv
AS 4077	Naphthalene	YH ~~40~~ 2.0ppbv

Standard Data

Lot #	Description	Conc.
AS4079	TO15 STD	40ppbv
AS4080	TO15 STD	2.0ppbv
AS4081	TO15 STD	0.4ppbv
AS4078	TO15 LCS	40ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044

Supervisor Signature: [signature] Date: 10/2/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	3W12850	BFB		A849	100					ok	
2	3W12851	ICC523-10		A287	100			/	/	ok	
1	3W12852	IC523-0.5		A855	YH ~~50~~ 100			/	/	ok	
2	3W12853	IC523-5		A287	50			/	/	notusal	
1	3W12854	IC523-0.2		A855	40			/	/	ok	
2	3W12855	IC523-20		A287	200			/	/	ok	
2	3W12856	IC523-30		A287	50			/	/	ok	
4	3W12857	IC523-0.1		A895	100			/	/	ok	
4	3W12858	IC523-0.04		A895	40			/	/	ok	
6	3W12859	Nap-5.0		A274	50			/	/	ok	
6	3W12860	Nap-10		A274	100			/	/	ok	
2	3W12861	IC523-40		A287	400			/	/	ok	
7	3W12862	Nap-0.5		A899	100			/	/	ok	
7	3W12863	Nap-0.2		A899	40			/	/	ok	
6	3W12864	Nap-20		A274	200			/	/	ok	
6	3W12865	Nap-40		A274	400			/	/	ok	
						YH					

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

Form: AT008-04
Rev. Date: 6/13/06

ACCUTEST

TO-14/TO-15

Batch ID: V3W524

Date: 10/5/09

Analyst Signature: [illegible]

Columns: RTX-1 60MX .32mmID

Method: T0153W.M

Seq. File: 3W100509.S

Initial Cal. Method: M3W523

AS Data

Method: T015.MPT

Standard Data

Lot #	Description	Conc.

Standard Data

Lot #	Description	Conc.
AS4079	T015STD	40ppbv
AS4078	T015LCS	40ppbv
AS4085	IS/SURR	40/20ppbv

(M) Manually integrated chromatographic peaks in the following reportable file have been reviewed and verified to comply with the criteria of Accutest SOP EQA044.

Supervisor Signature: [illegible] Date: 10/5/09

AS #	Data File	Sample ID	TEST	Canister Serial #	Vol Sample	Dil Fact	TICS	Int. STD Areas	Surr	Status Data	Comments
5	3W12866	BFB		A885	100					OK	
2	3W12867	CC523-10		A281	100			✓	✓	OK	
3	3W12868	BS		A816	100			✓	✓	OK	
3	3W12869	BSD		A816	100			✓	✓	OK	
5	3W12870	MB/SCC		A425	400	1		✓	✓	OK	
6	3W12871	JA28237-1	STD	A410	100	1		✓	✓	OK/DL	RR20ml
7	3W12872	JA28237-2	↓	A802	100	1		✓	✓	OK/DL	RR40ml
8	3W12873	JA28237-3	↓	A791	100	1		✓	✓	OK/DL	RR25ml
9	3W12874	SCC		A293	400	1		✓	✓	OK	
10	3W12875	JA28237-1	STD	A410	20	1		✓	✓	OK	
11	3W12876	JA28237-2	↓	A802	40	1		✓	✓	OK	
12	3W12877	JA28237-3	↓	A791	25	1		✓	✓	OK	
13	3W12878	JA28296-1	STD	A699	160	1.60		✓	✓	OK	
13	3W12879	JA28296-1Dup	↓	A699	160	1.60		✓	✓	OK	
14	3W12880	JA28296-2	↓	A564	148	1.48		✓	✓	OK	
15	3W12881	JA28296-3	↓	A529	100	1		✓	✓	OK	
16	3W12882	JA28296-4	↓	A590	155	1.55		✓	✓	OK/DL	RR40ml
1	3W12883	JA28296-5	↓	A514	100	1		✓	✓	OK	
3	3W12884	JA28296-6	↓	A438	100	1		✓	✓	OK	
4	3W12885	JA28296-7	↓	A843	744	1.86		✓	✓	OK/DL	RR200ml
6	3W12886	JA28296-8	↓	A135	632	1.58		✓	✓	OK/DL	RR200ml
7	3W12887	JA28296-9	↓	A317	592	1.48		✓	✓	OK	
8	3W12888	JA28296-10	↓	A119	400	1		↑	✓	RR	RR400/100ml
9	3W12889	JA28296-11	↓	A462	400	1		✓	✓	OK/DL	RR200ml
10	3W12890	JA28296-12	↓	A133	400	1		✓	✓	OK/DL	RR200ml
11	3W12891	JA28296-13	↓	A464	400	1		✓	✓	OK	

All strikeouts must be initial, dated and reason code applied as follows: # 1 = Reviewer Correction Error; # 2 = Transcription Error, # 3 = Computer Miscalculation, # 4 = Analyst's Correction Error

5	3W12892	SCC		A239	400	1		✓	✓	OK	

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Rev. Date: 6/13/06

Attachment D-3

First Interim Deliverable BHHRA Vapor Intrusion Tables

(Tables 2 through 6 of the First Interim Deliverable addressed the vapor intrusion pathway)

Table 2
Summary of Detected Constituents in Soil Gas and Indoor Air Samples - On-Site Investigation
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

Sample Name:		NJDEP Nonresidential IASLs	NJDEP Nonresidential SGSLs	IA-01				SG-01				IA-02				SG-02				IA-03				SG-03			
Sample Matrix:				Indoor Air				Soil Gas				Indoor Air				Soil Gas				Indoor Air				Soil Gas			
Sample Date:				9/16/2009				9/17/2009				9/16/2009				9/17/2009				9/16/2009				9/17/2009			
Lab ID:				JA2838-1				JA28238-9				JA28238-2				JA2838-10				JA28238-3				JA2838-11			
Compound	CAS #	ppbv	µg/m³	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		130,000			0.18	J	1.38	J	0.18	U	1.38	U	0.28		2.15		0.27	U	2.07	U	0.02	U	0.17	U	0.09	U	0.67	U
1,2,4-Trimethylbenzene	95-63-6		na			0.34		1.67		14.4		70.8		0.44		2.16		30.9		151.9		0.24		1.18		8.8		43.3	
1,3,5-Trimethylbenzene	108-67-8		na			0.03	U	0.13	U	3.3		16.2		0.12	J	0.59	J	7.1		34.9		0.03	U	0.13	U	1.8		8.85	
2,2,4-Trimethylpentane	540-84-1		na			0.32		1.49		2		9.34		0.35		1.63		5.2		24.3		0.18	J	0.84	J	0.08	U	0.38	U
2-Butanone (Methyl ethyl ketone)	78-93-3		22,000			0.47		1.39		5.4		15.9		1.4		4.13		29.8		87.9		0.4		1.18		6.1		18.0	
2-Hexanone	591-78-6		na			0.03	U	0.12	U	1.7		6.95		0.03	U	0.12	U	7.1		29.0		0.03	U	0.12	U	1.3		5.32	
4-Ethyltoluene (p-Ethyltoluene)	622-96-8		na			0.04	U	0.21	U	5.9		29.0		0.04	U	0.21	U	13.6		66.9		0.04	U	0.21	U	3.8		18.7	
4-Methyl-2-pentanone (MIBK)	108-10-1		13,000			0.05	U	0.18	U	0.36	U	1.48	U	0.05	U	0.18	U	2.6		10.7		0.05	U	0.18	U	0.18	U	0.74	U
Acetone (2-propanone)	67-64-1		140,000			7.3		17.34		9.4		22.3		13.2		31.36		39.3		93.4		5.4		12.83		16.7		39.7	
Benzene	71-43-2		2			0.29		0.93		6.3		20.1		0.36		1.15		**29.4**		**93.9**		0.24		0.77		4.5		14.4	
Carbon disulfide	75-15-0		3,100			0.03	U	0.11	U	0.27	U	0.84	U	0.03	U	0.11	U	25		77.9		0.03	U	0.11	U	0.13	U	0.40	U
Carbon tetrachloride	56-23-5		3			0.02	U	0.14	U	0.18	U	1.13	U	0.02	U	0.14	U	0.27	U	1.70	U	0.02	U	0.14	U	0.09	U	0.55	U
Chloroform	67-66-3		2			0.03	U	0.14	U	**6.1**		**29.8**		0.03	U	0.14	U	**41.4**		**202.2**		0.03	U	0.14	U	**6.9**		**33.7**	
Chloromethane (Methyl chloride)	74-87-3		390			0.6		1.24		0.38	U	0.78	U	1.7		3.51		0.57	U	1.18	U	0.7		1.45		0.19	U	0.39	U
Ethanol	64-17-5		na			11.9		22.42		10.6		20.0		7.5		14.13		22.9		43.1		6.1		11.49		12.3		23.2	
Ethyl Acetate	141-78-6		na			0.78		2.81		0.41	U	1.48	U	2.3		8.28		0.63	U	2.27	U	0.05	U	0.18	U	0.21	U	0.76	U
Ethylbenzene	100-41-4		5			0.15	J	0.65	J	16.8		73.0		0.19	J	0.83	J	50.9		221.1		0.12	J	0.52	J	9.7		42.1	
Isopropyl Alcohol	67-63-0		na			0.04	U	0.09	U	0.28	U	0.69	U	0.52		1.28		0.42	U	1.03	U	0.04	U	0.09	U	0.14	U	0.34	U
Methylene chloride	75-09-2		1,200			0.45		1.56		0.2	U	0.69	U	0.35		1.22		0.31	U	1.08	U	0.37		1.29		0.84		2.92	
MTBE (Methyl tert-butyl ether)	1634-04-4		47			1.1		3.97		0.18	U	0.65	U	0.68		2.45		0.27	U	0.97	U	0.02	U	0.08	U	0.09	U	0.32	U
n-Heptane	142-82-5		na			0.22		0.90		2		8.20		0.25		1.02		11.6		47.5		0.17	J	0.70	J	1.4		5.74	
n-Hexane	110-54-3		3,100			0.95		3.35		2.9		10.2		0.8		2.82		11.7		41.2		0.42		1.48		2		7.05	
Propylene	115-07-1		na			0.06	U	0.10	U	0.49	U	0.84	U	0.06	U	0.10	U	0.75	U	1.29	U	0.06	U	0.10	U	0.25	U	0.43	U
Styrene	100-42-5		4,400			0.02	U	0.08	U	0.15	U	0.64	U	0.02	U	0.08	U	0.23	U	0.98	U	0.02	U	0.08	U	0.07	U	0.32	U
Tertiary butyl alcohol (TBA)	75-65-0		na			0.02	U	0.07	U	0.18	U	0.55	U	0.02	U	0.07	U	0.28	U	0.85	U	0.02	U	0.07	U	0.09	U	0.28	U
Tetrachloroethene (PCE)	127-18-4		47			0.02	U	0.14	U	138		936		0.11		0.75		15.4		104.4		0.02	U	0.14	U	0.22		1.49	
Tetrahydrofuran	109-99-9		na			0.03	U	0.09	U	0.25	U	0.74	U	0.03	U	0.09	U	0.39	U	1.15	U	0.03	U	0.09	U	0.13	U	0.38	U
Toluene	108-88-3		22,000			0.89		3.35		275		1036		1.1		4.15		702		2645.5		0.76		2.86		191		719.78	
Trichloroethene (TCE)	79-01-6		3			0.02	U	0.10	U	0.52		2.79		0.02	U	0.10	U	0.23	U	1.24	U	0.02	U	0.10	U	0.07	U	0.40	U
Trichlorofluoromethane (Freon 11)	75-69-4		3,100			0.73		4.10		0.17	U	0.96	U	0.33		1.85		0.26	U	1.46	U	0.44		2.47		0.09	U	0.48	U
Xylenes (m&p)	1330-20-7		na			0.52		2.26		68.6		298.0		0.69		3.00		185		803.6		0.39		1.69		41		178.09	
Xylenes (o)	95-47-6		na			0.18	J	0.78	J	17		73.8		0.24		1.04		42.6		185.0		0.14	J	0.61	J	9.3		40.40	
Xylenes (total)	1330-20-7		440			0.7		3.04		85.5		371.4		0.93		4.04		227		986.0		0.53		2.30		50.3		218.48	

Notes:
IASLs - Indoor Air Screening Levels (NJDEP, March 2013)
SGSLs - Soil Gas Screening Levels (NJDEP, March 2013)
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 2
Summary of Detected Constituents in Soil Gas and Indoor Air Samples - On-Site Investigation
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

Sample Name: Sample Matrix: Sample Date: Lab ID:		NJDEP Nonresidential IASLs		NJDEP Nonresidential SGSLs		IA-03 DUP Indoor Air 9/16/2009 JA28238-4				SG-03 DUP Soil Gas 9/17/2009 JA28238-12				IA-04 Indoor Air 9/16/2009 JA28238-5				SG-04 Soil Gas 9/17/2009 JA28238-13				IA-BG-05 Ambient Air 9/16/2009 JA28238-6				IA-BG-06 Ambient Air 9/16/2009 JA28238-7				IA-BG-07 Ambient Air 9/16/2009 JA28238-8			
Compound	CAS #	ppbv	µg/m³	ppbv	µg/m³	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q	ppbv	Q	ug/m³	Q
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		130,000		6,600,000	0.12	J	0.92	J	0.09	U	0.67	U	0.13	J	1.00	J	0.09	U	0.67	U	0.02	U	0.17	U	0.34		2.61		0.02	U	0.17	U
1,2,4-Trimethylbenzene	95-63-6		na		na	0.28		1.38		15.5		76.2		0.53		2.61		11.9		58.50		0.48		2.36		0.23		1.13		0.02	U	0.10	U
1,3,5-Trimethylbenzene	108-67-8		na		na	0.03	U	0.13	U	3.3		16.2		0.14	J	0.69	J	2.7		13.27		0.12	J	0.59	J	0.03	U	0.13	U	0.03	U	0.13	U
2,2,4-Trimethylpentane	540-84-1		na		na	0.23		1.07		0.08	U	0.38	U	0.35		1.63		0.08	U	0.38	U	0.23		1.07		0.02	U	0.09	U	0.02	U	0.09	U
2-Butanone (Methyl ethyl ketone)	78-93-3		22,000		1,100,000	1.1		3.24		7		20.6		1.2		3.54		19.5		57.5		0.45		1.33		0.72		2.12		0.22		0.65	
2-Hexanone	591-78-6		na		na	0.03	U	0.12	U	1.5		6.13		0.03	U	0.12	U	2.6		10.63		0.03	U	0.12	U	0.03	U	0.12	U	0.03	U	0.12	U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8		na		na	0.04	U	0.21	U	7.1		34.9		0.11	J	0.54	J	5.3		26.06		0.04	U	0.21	U	0.04	U	0.21	U	0.04	U	0.21	U
4-Methyl-2-pentanone (MIBK)	108-10-1		13,000		660,000	0.05	U	0.18	U	0.18	U	0.74	U	0.05	U	0.18	U	1.7		6.97		0.05	U	0.18	U	0.12	J	0.49	J	0.05	U	0.18	U
Acetone (2-propanone)	67-64-1		140,000		6,800,000	14.1		33.49		16		38.0		10.9		25.89		78.5		186		7.1		16.87		8.5		20.19		5.1		12.11	
Benzene	71-43-2		2		79	0.25		0.80		6		19.2		0.36		1.15		5		15.97		0.24		0.77		0.15	J	0.48	J	0.02	U	0.07	U
Carbon disulfide	75-15-0		3,100		150,000	0.68		2.12		0.13	U	0.40	U	0.03	U	0.11	U	6.3		19.6		0.03	U	0.11	U	0.03	U	0.11	U	0.03	U	0.11	U
Carbon tetrachloride	56-23-5		3		100	0.12	J	0.75	J	0.09	U	0.55	U	0.02	U	0.14	U	0.09	U	0.55	U	0.02	U	0.14	U	0.02	U	0.14	U	0.02	U	0.14	U
Chloroform	67-66-3		2		27	0.03	U	0.14	U	4.3		21.0		0.03	U	0.14	U	**42.9**		**209**		0.03	U	0.14	U	0.03	U	0.14	U	0.03	U	0.14	U
Chloromethane (Methyl chloride)	74-87-3		390		20,000	0.93		1.92		0.19	U	0.39	U	0.59		1.22		0.19	U	0.39	U	0.58		1.20		1		2.07		0.51		1.05	
Ethanol	64-17-5		na		na	7.8		14.70		19.3		36.4		8		15.07		23.9		45.0		4		7.54		48.8	E	91.95	E	1.7		3.20	
Ethyl Acetate	141-78-6		na		na	0.05	U	0.18	U	0.21	U	0.76	U	0.05	U	0.18	U	6.6		23.8		0.05	U	0.18	U	0.05	U	0.18	U	0.05	U	0.18	U
Ethylbenzene	100-41-4		5		250	0.11	J	0.48	J	16		69.5		0.22		0.96		14.9		64.7		0.12	J	0.52	J	0.02	U	0.08	U	0.02	U	0.08	U
Isopropyl Alcohol	67-63-0		na		na	0.04	U	0.09	U	0.14	U	0.34	U	0.04	U	0.09	U	4.4		10.82		0.04	U	0.09	U	2.2		5.41		0.04	U	0.09	U
Methylene chloride	75-09-2		1,200		61,000	0.41		1.42		0.92		3.20		0.18	J	0.63	J	0.9		3.13		0.03	U	0.09	U	0.57		1.98		0.03	U	0.09	U
MTBE (Methyl tert-butyl ether)	1634-04-4		47		2,400	0.33		1.19		0.09	U	0.32	U	0.57		2.06		1.1		3.97		0.29		1.05		0.02	U	0.08	U	0.02	U	0.08	U
n-Heptane	142-82-5		na		na	0.03	U	0.11	U	1.8		7.38		0.23		0.94		1.6		6.56		0.16	J	0.66	J	0.03	U	0.11	U	0.03	U	0.11	U
n-Hexane	110-54-3		3,100		150,000	0.39		1.37		2.5		8.81		0.7		2.47		1.6		5.64		0.42		1.48		0.02	U	0.07	U	0.02	U	0.07	U
Propylene	115-07-1		na		na	0.06	U	0.10	U	0.25	U	0.43	U	0.06	U	0.10	U	11.1		19.07		0.06	U	0.10	U	0.06	U	0.10	U	0.06	U	0.10	U
Styrene	100-42-5		4,400		220,000	0.02	U	0.08	U	0.07	U	0.32	U	0.02	U	0.08	U	0.49	J	2.09	J	0.02	U	0.08	U	0.02	U	0.08	U	0.02	U	0.08	U
Tertiary butyl alcohol (TBA)	75-65-0		na		na	0.02	U	0.07	U	0.09	U	0.28	U	0.02	U	0.07	U	1.8		5.46		0.02	U	0.07	U	0.02	U	0.07	U	0.02	U	0.07	U
Tetrachloroethene (PCE)	127-18-4		47		2400	0.11		0.75		0.34		2.31		0.07		0.47		0.46		3.12		0.08		0.54		0.05		0.34		0.02	U	0.14	U
Tetrahydrofuran	109-99-9		na		na	0.21		0.62		0.13	U	0.38	U	0.03	U	0.09	U	0.13	U	0.38	U	0.03	U	0.09	U	0.03	U	0.09	U	0.03	U	0.09	U
Toluene	108-88-3		22,000		1,100,000	0.65		2.45		269		1014		1.2		4.52		179		675		0.69		2.60		0.36		1.36		0.13	J	0.49	J
Trichloroethene (TCE)	79-01-6		3		150	0.02	U	0.10	U	0.07	U	0.40	U	0.02	U	0.10	U	0.21		1.13		0.02	U	0.10	U	0.02	U	0.10	U	0.02	U	0.10	U
Trichlorofluoromethane (Freon 11)	75-69-4		3,100		150,000	0.73		4.10		0.58	J	3.26	J	0.27		1.52		0.6	J	3.37	J	0.27		1.52		1.1		6.18		0.24		1.35	
Xylenes (m&p)	1330-20-7		na		na	0.41		1.78		68.1		296		0.8		3.47		59.9		260		0.45		1.95		0.26		1.13		0.05	U	0.20	U
Xylenes (o)	95-47-6		na		na	0.16	J	0.69	J	15.7		68.2		0.28		1.22		14.7		63.85		0.16	J	0.69	J	0.11	J	0.48	J	0.02	U	0.10	U
Xylenes (total)	1330-20-7		440		22,000	0.57		2.48		83.7		364		1.1		4.78		74.6		324		0.61		2.65		0.37		1.61		0.02	U	0.10	U

Notes:
IASLs - Indoor Air Screening Levels (NJDEP, March 2013)
SGSLs - Soil Gas Screening Levels (NJDEP, March 2013)
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level

Prepared By: EMJ
Checked by: MWV
Revised By: MJM

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 3
Comparison of Area 2 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	Number of Detects	Number of Samples	Minimum SQL for Non-Detects (mg/L)	Maximum SQL for Non-Detects (mg/L)	Minimum Detection (mg/L)	Maximum Detection (mg/L)	Maximum Detection (µg/L)	GWSL VI (ug/L)
METHYL CHLORIDE	0	10	0.0002	0.0002				
METHYL ETHYL KETONE	0	10	0.001	0.001				
METHYL ISOBUTYL KETONE	0	10	0.001	0.001				
METHYLENE CHLORIDE	0	10	0.0002	0.0002				
METHYL-T-BUTYL ETHER	8	10	0.0001	0.0001	0.0001	0.0009	0.9	580
NAPHTHALENE	0	10	0.0001	0.0001				
STYRENE	0	10	0.0001	0.0001				
t-Butyl Alcohol	0	10	0.004	0.004				
TETRACHLOROETHYLENE	1	10	0.0001	0.0001	0.0002	0.0002	0.2	31
TOLUENE	2	10	0.0001	0.0001	0.0001	0.0002	0.2	330000
TRICHLOROETHYLENE	3	10	0.0001	0.0001	0.0001	0.0003	0.3	2
TRICHLOROFLUOROMETHANE	0	10	0.0001	0.0001				
VINYL CHLORIDE	0	10	0.00008	0.00008				
XYLENES,TOTAL	0	10	0.0001	0.0001				

Table 3
Comparison of Area 2 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	SRI-GW-17 SRI-GW-17-092512	SRI-GW-19 SRI-GW-19-092612	SRI-GW-19 SRI-GW-19-D-092612	SRI-GW-20 SRI-GW-20-092612	SRI-GW-21 SRI-GW-21-092612	SRI-GW-22 SRI-GW-22-092612
1,1,1-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1,2-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2,4-TRICHLOROBENZENE	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-CIS-DICHLOROETHYLENE	0.0002	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROBENZENE	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROETHANE	0.0004	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROPROPANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,4-DIOXANE	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
ACETONE	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U	0.003 U
ACROLEIN	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
ACRYLONITRILE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
BENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
BROMOFORM	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CARBON DISULFIDE	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CARBON TETRACHLORIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROBENZENE	0.0004	0.0002	0.0002	0.0001 U	0.0001 U	0.0001 U
CHLORODIBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROFORM	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
DICHLOROBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
ETHYLBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
METHYL ACETATE	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0003 U
METHYL BROMIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U

Table 3
Comparison of Area 2 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	SRI-GW-17 SRI-GW-17-092512	SRI-GW-19 SRI-GW-19-092612	SRI-GW-19 SRI-GW-19-D-092612	SRI-GW-20 SRI-GW-20-092612	SRI-GW-21 SRI-GW-21-092612	SRI-GW-22 SRI-GW-22-092612
METHYL CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
METHYLENE CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	0.0009	0.0001	0.0001	0.0001 U	0.0002	0.0001 U
NAPHTHALENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
STYRENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
t-Butyl Alcohol	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U	0.004 U
TETRACHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002	0.0001 U
TOLUENE	0.0001	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0002
TRICHLOROETHYLENE	0.0002	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0001 U
TRICHLOROFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
VINYL CHLORIDE	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U	0.00008 U
XYLENES,TOTAL	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U

Table 3
Comparison of Area 2 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	SRI-GW-23 SRI-GW-23-092712	SRI-GW-24 SRI-GW-24-092712	SRI-GW-25 SRI-GW-25-092712	SRI-GW-26 SRI-GW-26-092712
1,1,1-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1,2-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2,4-TRICHLOROBENZENE	0.0001 U	0.0001 U	0.0001	0.0001 U
1,2-CIS-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001	0.001
1,2-DICHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0003
1,2-DICHLOROPROPANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
1,4-DIOXANE	0.02 U	0.02 U	0.02 U	0.02 U
ACETONE	0.003 U	0.003 U	0.003 U	0.003 U
ACROLEIN	0.004 U	0.004 U	0.004 U	0.004 U
ACRYLONITRILE	0.001 U	0.001 U	0.001 U	0.001 U
BENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
BROMOFORM	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CARBON DISULFIDE	0.0004 U	0.0004 U	0.0004 U	0.0004 U
CARBON TETRACHLORIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001
CHLORODIBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
CHLOROFORM	0.0002	0.0001 U	0.0001 U	0.0001 U
DICHLOROBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
ETHYLBENZENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
METHYL ACETATE	0.0003 U	0.0003 U	0.0003 U	0.0003 U
METHYL BROMIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U

Table 3
Comparison of Area 2 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	SRI-GW-23 SRI-GW-23-092712	SRI-GW-24 SRI-GW-24-092712	SRI-GW-25 SRI-GW-25-092712	SRI-GW-26 SRI-GW-26-092712
METHYL CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U
METHYLENE CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	0.0002	0.0001	0.0001	0.0006
NAPHTHALENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
STYRENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
t-Butyl Alcohol	0.004 U	0.004 U	0.004 U	0.004 U
TETRACHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
TOLUENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
TRICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0003
TRICHLOROFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U
VINYL CHLORIDE	0.00008 U	0.00008 U	0.00008 U	0.00008 U
XYLENES,TOTAL	0.0001 U	0.0001 U	0.0001 U	0.0001 U

GWSL VI - NJDEP March 2013 Generic Vapor Intrusion Groundwater Screening Level
mg/L - milligrams per liter
µg/l - micrograms per liter

Table 4
Sub-Slab Soil Gas Sample Results - Off-Site Investigation
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Sample Name: Lab ID: Sample Date:			**NJDEP Nonresidential SGSLs**	SG-01OS JA28237-1 9/17/2009		SG-02OS JA28237-2 9/17/2009		SG-02OS DUP JA28237-3 9/17/2009	
Compound	**CAS #**	ppbv	ug/m^3	ppbv Q	ug/m3 Q	ppbv Q	ug/m3 Q	ppbv Q	ug/m3 Q
1,1,1-Trichloroethane	71-55-6		1,100,000	0.1 U	0.53 U	0.1 U	0.53 U	0.1 U	0.53 U
1,1,2,2-Tetrachloroethane	79-34-5		34	0.09 U	0.62 U	0.09 U	0.62 U	0.09 U	0.62 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1		6,600,000	1.7	13.0	0.09 U	0.67 U	0.09 U	0.67 U
1,1,2-Trichloroethane	79-00-5		38	0.09 U	0.46 U	0.09 U	0.46 U	0.09 U	0.46 U
1,1-Dichloroethane	75-34-3		380	0.13 U	0.53 U	0.13 U	0.53 U	0.13 U	0.53 U
1,1-Dichloroethene	75-35-4		44,000	0.18 U	0.71 U	0.18 U	0.71 U	0.18 U	0.71 U
1,2,4-Trichlorobenzene	120-82-1		440	0.26 U	1.93 U	0.26 U	1.93 U	0.26 U	1.93 U
1,2,4-Trimethylbenzene	95-63-6		na	14.8	72.8	11.9	58.5	16.2	79.6
1,2-Dibromoethane	106-93-4		38	0.08 U	0.63 U	0.08 U	0.63 U	0.08 U	0.63 U
1,2-Dichlorobenzene	95-50-1		44,000	0.15 U	0.90 U	0.15 U	0.90 U	0.15 U	0.90 U
1,2-Dichloroethane	107-06-2		24	0.14 U	0.57 U	0.14 U	0.57 U	0.14 U	0.57 U
1,2-Dichloroethene (cis)	156-59-2		na	0.11 U	0.44 U	0.11 U	0.44 U	0.11 U	0.44 U
1,2-Dichloroethene (trans)	156-60-5		13,000	0.14 U	0.56 U	0.14 U	0.56 U	0.14 U	0.56 U
1,2-Dichloropropane	78-87-5		61	0.11 U	0.51 U	0.11 U	0.51 U	0.11 U	0.51 U
1,2-Dichlorotetrafluoroethane (Freon 114	76-14-2		na	0.09 U	0.62 U	0.09 U	0.62 U	0.09 U	0.62 U
1,3,5-Trimethylbenzene	108-67-8		na	3.1	15.2	2.5	12.3	3.5	17.2
1,3-Butadiene	106-99-0		20	0.14 U	0.31 U	0.14 U	0.31 U	0.14 U	0.31 U
1,3-Dichlorobenzene	541-73-1		na	0.13 U	0.78 U	0.13 U	0.78 U	0.13 U	0.78 U
1,4-Dichlorobenzene	106-46-7		56	0.13 U	0.78 U	0.13 U	0.78 U	0.13 U	0.78 U
1,4-Dioxane	123-91-1		na	0.25 U	0.90 U	0.25 U	0.90 U	0.25 U	0.90 U
2,2,4-Trimethylpentane	540-84-1		na	0.08 U	0.38 U	0.08 U	0.38 U	0.08 U	0.38 U
2-Butanone (Methyl ethyl ketone)	78-93-3		1,100,000	11.5	33.9	7.4	21.8	6.2	18.3
2-Chlorotoluene (o-Chlorotoluene)	95-49-8		na	0.09 U	0.45 U	0.09 U	0.45 U	0.09 U	0.45 U
2-Hexanone	591-78-6		na	4.2	17.2	2.5	10.2	2.5	10.2
3-Chloropropene (allyl chloride)	107-05-1		100	0.12 U	0.38 U	0.12 U	0.38 U	0.12 U	0.38 U
4-Ethyltoluene (p-Ethyltoluene)	622-96-8		na	6.4	31.5	5.5	27.0	7.7	37.9
4-Methyl-2-pentanone (MIBK)	108-10-1		660,000	0.18 U	0.74 U	0.18 U	0.74 U	0.18 U	0.74 U
Acetone (2-propanone)	67-64-1		6,800,000	18.1	43.0	58.7	139.4	14.6	34.7
Benzene	71-43-2		79	7	22.4	4.4	14.1	7	22.4
Benzyl Chloride	100-44-7		na	0.13 U	0.67 U	0.13 U	0.67 U	0.13 U	0.67 U
Bromodichloromethane	75-27-4		34	0.11 U	0.74 U	0.11 U	0.74 U	0.11 U	0.74 U
Bromoethene	593-60-2		22	0.07 U	0.32 U	0.07 U	0.32 U	0.07 U	0.32 U
Bromoform	75-25-2		560	0.09 U	0.91 U	0.09 U	0.91 U	0.09 U	0.91 U
Bromomethane (Methyl bromide)	74-83-9		1,100	0.1 U	0.37 U	0.1 U	0.37 U	0.1 U	0.37 U
Carbon disulfide	75-15-0		150,000	0.13 U	0.40 U	0.13 U	0.40 U	0.13 U	0.40 U
Carbon tetrachloride	56-23-5		100	0.09 U	0.55 U	0.62 J	3.90 J	0.76 J	4.78 J
Chlorobenzene	108-90-7		11,000	0.1 U	0.46 U	0.1 U	0.46 U	0.1 U	0.46 U
Chloroethane	75-00-3		2,200,000	0.16 U	0.42 U	0.16 U	0.42 U	0.16 U	0.42 U
Chloroform	67-66-3		27	**8.8**	**43.0**	**5.8**	**28.3**	**7.5**	**36.6**
Chloromethane (Methyl chloride)	74-87-3		20,000	0.19 U	0.39 U	0.19 U	0.39 U	0.19 U	0.39 U
cis-1,3-Dichloropropene	10061-01-5		na	0.08 U	0.35 U	0.08 U	0.35 U	0.08 U	0.35 U
Cyclohexane	110-82-7		1,300,000	0.24 U	0.83 U	0.24 U	0.83 U	0.24 U	0.83 U
Dibromochloromethane	124-48-1		43	0.14 U	1.19 U	0.14 U	1.19 U	0.14 U	1.19 U
Dichlorodifluoromethane	75-71-8		22,000	0.44 J	2.18 J	0.48 J	2.37 J	0.1 U	0.47 U
Ethanol	64-17-5		na	25	47.1	33.5	63.1	17.1	32.2
Ethyl Acetate	141-78-6		na	22.4	80.6	1.8	6.48	0.21 U	0.76 U
Ethylbenzene	100-41-4		250	18.5	80.4	13.9	60.4	18.2	79.1
Hexachlorobutadiene	87-68-3		53	0.17 U	1.81 U	0.17 U	1.81 U	0.17 U	1.81 U
Isopropyl Alcohol	67-63-0		na	17.2	42.3	3	7.37	1.3	3.20
Methylene chloride	75-09-2		61,000	1.3	4.52	0.87	3.02	0.1 U	0.35 U
MTBE (Methyl tert-butyl ether)	1634-04-4		2,400	0.09 U	0.32 U	0.09 U	0.32 U	0.09 U	0.32 U
n-Heptane	142-82-5		na	2.4	9.84	1.5	6.15	1.8	7.38
n-Hexane	110-54-3		150,000	2.8	9.87	1.8	6.34	2.2	7.75
Propylene	115-07-1		na	0.25 U	0.43 U	1.9 J	3.26 J	0.92 J	1.58 J
Styrene	100-42-5		220,000	0.51 J	2.17 J	0.46 J	1.96 J	0.6 J	2.55 J
Tertiary butyl alcohol (TBA)	75-65-0		na	0.97	2.94	0.09 U	0.28 U	0.09 U	0.28 U
Tetrachloroethene (PCE)	127-18-4		2400	0.69	4.68	0.52	3.53	2.1	14.2
Tetrahydrofuran	109-99-9		na	0.13 U	0.38 U	0.13 U	0.38 U	0.13 U	0.38 U
Toluene	108-88-3		1,100,000	221	832.8	191	719.8	183	689.6
trans-1,3-Dichloropropene	10061-02-6		na	0.06 U	0.29 U	0.06 U	0.29 U	0.06 U	0.29 U
Trichloroethene (TCE)	79-01-6		150	0.93	5.00	0.07 U	0.40 U	1.7	9.14
Trichlorofluoromethane (Freon 11)	75-69-4		150,000	0.78 J	4.38 J	0.86	4.83	0.53 J	2.98 J
Vinyl Acetate	108-05-4		na	0.18 U	0.63 U	0.18 U	0.63 U	0.18 U	0.63 U
Vinyl chloride	75-01-4		140	0.09 U	0.24 U	0.09 U	0.24 U	0.09 U	0.24 U
Xylenes (m&p)	1330-20-7		na	83.3	361.8	64.7	281.0	86.7	376.6
Xylenes (o)	95-47-6		na	18.3	79.5	14.4	62.5	19.4	84.3
Xylenes (total)	1330-20-7		22,000	102	443.0	79	343.1	106	460.4

Notes:
SGSLs - Soil Gas Screening Levels (NJDEP, March 2013)
na: not available (no NJDEP criteria established)
Bold/Underlined results exceed relevant Vapor Intrusion Screening Level

Prepared By: EMJ
Checked By: MWV
Revised By: MJM

Qualifiers:
U - Not detected above MDL
J - Indicates an estimated value
E - Indicates value exceeds calibration range
B - Indicates analyte found in associated method blank
N - indicates presumptive evidence of a compound

Table 5
Comparison of Area 3 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	Number of Detects	Number of Samples	Minimum SQL for Non-Detects (mg/L)	Maximum SQL for Non-Detects (mg/L)	Minimum Detection (mg/L)	Maximum Detection (mg/L)	Maximum Detection (µg/L)	GWSL VI (ug/L)	SRI-GW-27 SRI-GW-27-092412 9/24/2012 7-8 ft	SRI-GW-28 SRI-GW-28-092412 9/24/2012 7 8 ft	SRI-GW-29 SRI-GW-29-092412 9/24/2012 7 8 ft
1,1,1-TRICHLOROETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,1,2-TRICHLOROETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,1-DICHLOROETHYLENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,2,4-TRICHLOROBENZENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,2-CIS-DICHLOROETHYLENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROBENZENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,2-DICHLOROPROPANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,3-CIS-DICHLOROPROPYLENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,3-DICHLOROBENZENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,3-TRANS-DICHLOROPROPYLENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,4-DICHLOROBENZENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
1,4-DIOXANE	0	3	0.02	0.02					0.02 U	0.02 U	0.02 U
ACETONE	1	3	0.003	0.003	0.0044	0.0044	4.4	21,000,000	0.003 U	0.0044	0.003 U
ACROLEIN	0	3	0.004	0.004					0.004 U	0.004 U	0.004 U
ACRYLONITRILE	0	3	0.001	0.001					0.001 U	0.001 U	0.001 U
BENZENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
BROMOFORM	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
CARBON DISULFIDE	3	3			0.0004	0.0006	0.6	1,500	0.0006	0.0005	0.0004
CARBON TETRACHLORIDE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
CHLOROBENZENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
CHLORODIBROMOMETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
CHLOROETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
CHLOROFORM	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
DICHLOROBROMOMETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
DICHLORODIFLUOROMETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
ETHYLBENZENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
METHYL ACETATE	0	3	0.0003	0.0003					0.0003 U	0.0003 U	0.0003 U
METHYL BROMIDE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
METHYL CHLORIDE	0	3	0.0002	0.0002					0.0002 U	0.0002 U	0.0002 U
METHYL ETHYL KETONE	0	3	0.001	0.001					0.001 U	0.001 U	0.001 U
METHYL ISOBUTYL KETONE	0	3	0.001	0.001					0.001 U	0.001 U	0.001 U
METHYLENE CHLORIDE	0	3	0.0002	0.0002					0.0002 U	0.0002 U	0.0002 U
METHYL-T-BUTYL ETHER	1	3	0.0001	0.0001	0.0003	0.0003	0.3	580	0.0001 U	0.0001 U	0.0003
NAPHTHALENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
STYRENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
t-Butyl Alcohol	0	3	0.004	0.004					0.004 U	0.004 U	0.004 U
TETRACHLOROETHYLENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
TOLUENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
TRICHLOROETHYLENE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
TRICHLOROFLUOROMETHANE	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U
VINYL CHLORIDE	0	3	0.00008	0.00008					0.00008 U	0.00008 U	0.00008 U
XYLENES,TOTAL	0	3	0.0001	0.0001					0.0001 U	0.0001 U	0.0001 U

All concentrations mg/L unless otherwise specified
GWSL VI - NJDEP March 2013 Generic Vapor Intrusion Groundwater Screening Level
mg/L - milligrams per liter
µg/l - micrograms per liter

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	Number of Detects	Number of Samples	Minimum SQL for Non-Detects (mg/L)	Maximum SQL for Non-Detects (mg/L)	Minimum Detection (mg/L)	Maximum Detection (mg/L)	Maximum Detection (µg/L)	GWSL VI (ug/L)	CPS-01 CPS-1-072612 7/26/2012 -	CPS-03A CPS-03A 061812 6/18/2012 -
1,1,1-TRICHLOROETHANE	0	35	0.0001	0.005					0.0005 U	0.0008 U
1,1,2,2-TETRACHLOROETHANE	28	35	0.0001	0.005	0.0002	0.008	**8**	6	0.0009	0.001 J
1,1,2-TRICHLOROETHANE	0	35	0.0001	0.005					0.0005 U	0.0008 U
1,1-DICHLOROETHANE	3	35	0.0001	0.005	0.0001	0.0005	0.5	50	0.0005 U	0.001 U
1,1-DICHLOROETHYLENE	3	13	0.0001	0.005	0.0001	0.0023	2.3	260	0.0005 U	
1,2,4-TRICHLOROBENZENE	31	35	0.0001	0.0005	0.0001	0.3	**300**	130	0.029	0.18
1,2-CIS-DICHLOROETHYLENE	32	35	0.0008	0.005	0.0002	0.075	75	na	0.0025	0.017
1,2-DIBROMOETHANE	0	22	0.001	0.001						0.001 U
1,2-DICHLOROBENZENE	32	35	0.0001	0.0005	0.0001	0.59	590	6,800	0.034	0.15
1,2-DICHLOROETHANE	33	35	0.0001	0.005	0.0003	0.036	**36**	3	0.0043	0.018
1,2-DICHLOROPROPANE	0	13	0.0001	0.005					0.0005 U	
1,2-TRANS-DICHLOROETHYLENE	20	35	0.0001	0.005	0.0001	0.008	8	520	0.0016	0.003 J
1,3-CIS-DICHLOROPROPYLENE	0	13	0.0001	0.005					0.0005 U	
1,3-DICHLOROBENZENE	31	35	0.0001	0.0005	0.0005	0.065	65	na	0.032	0.004 J
1,3-TRANS-DICHLOROPROPYLENE	0	13	0.0001	0.005					0.0005 U	
1,4-DICHLOROBENZENE	31	35	0.0001	0.0005	0.0015	0.18	**180**	75	0.084	0.014
1,4-DIOXANE	3	35	0.02	1	0.026	0.14	140	na	0.1 U	0.07 U
ACETONE	6	35	0.003	0.15	0.004	0.02	20	21,000,000	0.015 U	0.006 U
ACROLEIN	0	13	0.004	0.2					0.02 U	
ACRYLONITRILE	0	13	0.001	0.05					0.005 U	
BENZENE	32	35	0.0001	0.0001	0.0005	1.8	**1800**	20	0.034	0.021
BROMOFORM	0	13	0.0001	0.005					0.0005 U	
CARBON DISULFIDE	2	13	0.0004	0.02	0.0006	0.0009	0.9	1,500	0.002 U	
CARBON TETRACHLORIDE	0	35	0.0001	0.005					0.0005 U	0.001 U
CHLOROBENZENE	34	35	0.0005	0.0005	0.0001	8.1	**8100**	770	0.72	0.1
CHLORODIBROMOMETHANE	0	13	0.0001	0.005					0.0005 U	
CHLOROETHANE	0	13	0.0001	0.005					0.0005 U	
CHLOROFORM	9	35	0.0001	0.005	0.0003	0.002	2	70	0.0005 U	0.0008 U
DICHLOROBROMOMETHANE	0	13	0.0001	0.005					0.0005 U	
DICHLORODIFLUOROMETHANE	0	13	0.0001	0.005					0.0005 U	
ETHYLBENZENE	31	35	0.0001	0.0001	0.0001	0.28	280	700	0.038	0.01
METHYL ACETATE	0	13	0.0003	0.015					0.0015 U	
METHYL BROMIDE	0	13	0.0001	0.005					0.0005 U	

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	Number of Detects	Number of Samples	Minimum SQL for Non-Detects (mg/L)	Maximum SQL for Non-Detects (mg/L)	Minimum Detection (mg/L)	Maximum Detection (mg/L)	Maximum Detection (µg/L)	GWSL VI (ug/L)	CPS-01 CPS-1-072612 7/26/2012 -	CPS-03A CPS-03A 061812 6/18/2012 -
METHYL CHLORIDE	0	13	0.0002	0.01					0.001 U	
METHYL ETHYL KETONE	0	13	0.001	0.05					0.005 U	
METHYL ISOBUTYL KETONE	0	13	0.001	0.05					0.005 U	
METHYLENE CHLORIDE	1	35	0.0002	0.01	0.003	0.003	3	920	0.001 U	0.002 U
METHYL-T-BUTYL ETHER	10	13	0.0001	0.005	0.0003	0.0014	1.4	580	0.0005	
NAPHTHALENE	7	13	0.0001	0.0005	0.0005	0.036	36	300	0.0031	
STYRENE	0	13	0.0001	0.005					0.0005 U	
t-Butyl Alcohol	1	13	0.004	0.2	0.013	0.013	13	na	0.02 U	
TETRACHLOROETHYLENE	27	35	0.0001	0.005	0.0001	0.003	3	31	0.0005 U	0.001 J
TOLUENE	31	35	0.0001	0.0001	0.0002	4	4000	330,000	0.06	0.057
TRICHLOROETHYLENE	32	35	0.0001	0.005	0.0002	0.007	7	2	0.0008	0.004 J
TRICHLOROFLUOROMETHANE	0	13	0.0001	0.005					0.0005 U	
VINYL CHLORIDE	16	35	0.00008	0.004	0.0001	0.015	**15**	1	0.0029	0.001 U
XYLENES,TOTAL	32	35	0.0001	0.0001	0.0003	1.2	1200	8,600	0.17	0.033
1,2,4,5-TETRACHLOROBENZENE	0	6	0.0005	0.0005						
1,4-DIOXANE	5	6	0.0009	0.0009	0.002	0.039	39	na		

All concentrations mg/L unless otherwise specified
GWSL VI - NJDEP March 2013 Generic Vapor Intrusion Groundwater Screening Level
mg/L - milligrams per liter
µg/l - micrograms per liter
Bolded and underlined indicates maximum concentration greater than GWSL VI

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	CPS-03A CPS-03A-012012 1/20/2012 -	CPS-03A CPS-03A-021612 2/16/2012 -	CPS-03A CPS-03A-042712 4/27/2012 -	CPS-03A CPS-03A-051612 5/16/2012 -	CPS-03A CPS-03A-071812 7/18/2012 -	CPS-03A CPS-03A-072712 7/27/2012 -	CPS-03A CPS-03A-081712 8/17/2012 -	CPS-03A CPS-03A-091712 9/17/2012 -
1,1,1-TRICHLOROETHANE	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0001 U	0.0008 U	0.0008 U
1,1,2,2-TETRACHLOROETHANE	0.003 J	0.003 J	0.002 J	0.002 J	0.002 J	0.0019	0.002 J	0.002 J
1,1,2-TRICHLOROETHANE	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0008 U	0.0001 U	0.0008 U	0.0008 U
1,1-DICHLOROETHANE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0002	0.001 U	0.001 U
1,1-DICHLOROETHYLENE						0.0006		
1,2,4-TRICHLOROBENZENE	0.2	0.2	0.14	0.17	0.14	0.16	0.16	0.15
1,2-CIS-DICHLOROETHYLENE	0.028	0.023	0.01	0.011	0.034	0.036	0.048	0.028
1,2-DIBROMOETHANE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U
1,2-DICHLOROBENZENE	0.2	0.18	0.14	0.15	0.13	0.14	0.13	0.13
1,2-DICHLOROETHANE	0.02	0.018	0.017	0.018	0.014	0.015	0.015	0.013
1,2-DICHLOROPROPANE						0.0001 U		
1,2-TRANS-DICHLOROETHYLENE	0.004 J	0.004 J	0.001 J	0.001 J	0.005 J	0.006	0.007	0.005
1,3-CIS-DICHLOROPROPYLENE						0.0001 U		
1,3-DICHLOROBENZENE	0.009	0.006	0.004 J	0.004 J	0.004 J	0.0038	0.003 J	0.003 J
1,3-TRANS-DICHLOROPROPYLENE						0.0001 U		
1,4-DICHLOROBENZENE	0.028	0.021	0.013	0.013	0.013	0.014	0.013	0.012
1,4-DIOXANE	0.07 U	0.07 U	0.07 U	0.07 U	0.07 U	0.02 U	0.07 U	0.07 U
ACETONE	0.006 U	0.006 U	0.006 U	0.006 U	0.006 U	0.0067	0.006 U	0.006 U
ACROLEIN						0.004 U		
ACRYLONITRILE						0.001 U		
BENZENE	0.032	0.027	0.012	0.015	0.03	0.03	0.038	0.026
BROMOFORM						0.0001 U		
CARBON DISULFIDE						0.0006		
CARBON TETRACHLORIDE	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0001 U	0.001 U	0.001 U
CHLOROBENZENE	0.14	0.12	0.064	0.078	0.091	0.088	0.093	0.081
CHLORODIBROMOMETHANE						0.0001 U		
CHLOROETHANE						0.0001 U		
CHLOROFORM	0.001 J	0.001 J	0.0008 U	0.001 J	0.0008 U	0.0007	0.0008 U	0.0008 U
DICHLOROBROMOMETHANE						0.0001 U		
DICHLORODIFLUOROMETHANE						0.0001 U		
ETHYLBENZENE	0.017	0.014	0.008	0.009	0.009	0.0098	0.009	0.007
METHYL ACETATE						0.0003 U		
METHYL BROMIDE						0.0001 U		

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	CPS-03A CPS-03A-012012 1/20/2012 -	CPS-03A CPS-03A-021612 2/16/2012 -	CPS-03A CPS-03A-042712 4/27/2012 -	CPS-03A CPS-03A-051612 5/16/2012 -	CPS-03A CPS-03A-071812 7/18/2012 -	CPS-03A CPS-03A-072712 7/27/2012 -	CPS-03A CPS-03A-081712 8/17/2012 -	CPS-03A CPS-03A-091712 9/17/2012 -
METHYL CHLORIDE						0.0002 U		
METHYL ETHYL KETONE						0.001 U		
METHYL ISOBUTYL KETONE						0.001 U		
METHYLENE CHLORIDE	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0002 U	0.002 U	0.002 U
METHYL-T-BUTYL ETHER						0.0005		
NAPHTHALENE						0.0009		
STYRENE						0.0001 U		
t-Butyl Alcohol						0.004 U		
TETRACHLOROETHYLENE	0.001 J	0.001 J	0.001 J	0.001 J	0.0009 J	0.0012	0.001 J	0.001 J
TOLUENE	0.11	0.095	0.027	0.033	0.069	0.064	0.087	0.073
TRICHLOROETHYLENE	0.004 J	0.004 J	0.004 J	0.004 J	0.004 J	0.004	0.005 J	0.004 J
TRICHLOROFLUOROMETHANE						0.0001 U		
VINYL CHLORIDE	0.007	0.007	0.001 U	0.002 J	0.008	0.012	0.001 U	0.007
XYLENES,TOTAL	0.058	0.049	0.026	0.027	0.031	0.034	0.031	0.023
1,2,4,5-TETRACHLOROBENZENE								
1,4-DIOXANE								

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	CPS-03A CPS-03A-101911 10/19/2011 -	CPS-03A CPS-03A-111611 11/16/2011 -	CPS-03A CPS-03A-121311 12/13/2011 -	CPS-03A CPS-3A-031912 3/19/2012 -	CPS-03A CPS-3A-042312 4/23/2012 -	CPS-03A CPS-3A-101911 10/19/2011 -	CPS-06 CPS-6-072612 7/26/2012 -	CPS-07 CPS-7-072612 7/26/2012 -
1,1,1-TRICHLOROETHANE		0.0008 U		0.0008 U		0.0008 U	0.005 U	0.0001 U
1,1,2,2-TETRACHLOROETHANE		0.003 J		0.003 J		0.003 J	0.005 U	0.0002
1,1,2-TRICHLOROETHANE		0.0008 U		0.0008 U		0.0008 U	0.005 U	0.0001 U
1,1-DICHLOROETHANE		0.001 U		0.001 U		0.001 U	0.005 U	0.0001
1,1-DICHLOROETHYLENE							0.005 U	0.0023
1,2,4-TRICHLOROBENZENE		0.18		0.18		0.17	0.011	0.019
1,2-CIS-DICHLOROETHYLENE		0.054		0.012		0.075	0.005 U	0.0026
1,2-DIBROMOETHANE		0.001 U		0.001 U		0.001 U		
1,2-DICHLOROBENZENE		0.2		0.17		0.21	0.023	0.0036
1,2-DICHLOROETHANE		0.02		0.019		0.027	0.005 U	0.0052
1,2-DICHLOROPROPANE							0.005 U	0.0001 U
1,2-TRANS-DICHLOROETHYLENE		0.007		0.002 J		0.008	0.005 U	0.0002
1,3-CIS-DICHLOROPROPYLENE							0.005 U	0.0001 U
1,3-DICHLOROBENZENE		0.009		0.005		0.01	0.019	0.0005
1,3-TRANS-DICHLOROPROPYLENE							0.005 U	0.0001 U
1,4-DICHLOROBENZENE		0.029		0.018		0.031	0.043	0.0018
1,4-DIOXANE		0.07 U		0.07 U		0.07 U	1 U	0.02 U
ACETONE		0.006 U		0.006 U		0.006 U	0.15 U	0.003 U
ACROLEIN							0.2 U	0.004 U
ACRYLONITRILE							0.05 U	0.001 U
BENZENE		0.043		0.019		0.063	1.8	0.0017
BROMOFORM							0.005 U	0.0001 U
CARBON DISULFIDE							0.02 U	0.0004 U
CARBON TETRACHLORIDE		0.001 U		0.001 U		0.001 U	0.005 U	0.0001 U
CHLOROBENZENE		0.18		0.084		0.2	8.1	0.0017
CHLORODIBROMOMETHANE							0.005 U	0.0001 U
CHLOROETHANE							0.005 U	0.0001 U
CHLOROFORM		0.001 J		0.001 J		0.002 J	0.005 U	0.0003
DICHLOROBROMOMETHANE							0.005 U	0.0001 U
DICHLORODIFLUOROMETHANE							0.005 U	0.0001 U
ETHYLBENZENE		0.021		0.011		0.025	0.28	0.0004
METHYL ACETATE							0.015 U	0.0003 U
METHYL BROMIDE							0.005 U	0.0001 U

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	CPS-03A CPS-03A-101911 10/19/2011 -	CPS-03A CPS-03A-111611 11/16/2011 -	CPS-03A CPS-03A-121311 12/13/2011 -	CPS-03A CPS-3A-031912 3/19/2012 -	CPS-03A CPS-3A-042312 4/23/2012 -	CPS-03A CPS-3A-101911 10/19/2011 -	CPS-06 CPS-6-072612 7/26/2012 -	CPS-07 CPS-7-072612 7/26/2012 -
METHYL CHLORIDE							0.01 U	0.0002 U
METHYL ETHYL KETONE							0.05 U	0.001 U
METHYL ISOBUTYL KETONE							0.05 U	0.001 U
METHYLENE CHLORIDE		0.002 U		0.002 U		0.002 U	0.01 U	0.0002 U
METHYL-T-BUTYL ETHER							0.005 U	0.0003
NAPHTHALENE							0.036	0.0001 U
STYRENE							0.005 U	0.0001 U
t-Butyl Alcohol							0.2 U	0.004 U
TETRACHLOROETHYLENE		0.001 J		0.001 J		0.001 J	0.005 U	0.0001
TOLUENE		0.16		0.064		0.24	4	0.0001 U
TRICHLOROETHYLENE		0.005 J		0.004 J		0.004 J	0.005 U	0.0015
TRICHLOROFLUOROMETHANE							0.005 U	0.0001 U
VINYL CHLORIDE		0.01		0.001 U		0.015	0.004 U	0.0015
XYLENES,TOTAL		0.074		0.035		0.097	1.2	0.0012
1,2,4,5-TETRACHLOROBENZENE							0.0005 U	0.0005 U
1,4-DIOXANE							0.039	0.005

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	CPS-08 CPS-8-072712 7/27/2012 -	CPS-08 CPS-8-D-072712 7/27/2012 -	IRM-PZ-4 IRM-PZ-4-072612 7/26/2012 -	IRM-PZ-9 IRM-PZ-9-072612 7/26/2012 -	IRM-TP-2 IRM-TP-2-072612 7/26/2012 -	IRM-TP-4 IRM-TP-4-072612 7/26/2012 -	MI-04 MI-04-072612 7/26/2012 -	SRI-GW-16 SRI-GW-16-092512 9/25/2012 7-8 ft	SRI-GW-18 SRI-GW-18-092512 9/25/2012 7-8 ft
1,1,1-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
1,1,2,2-TETRACHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.003	0.0006		0.0001 U	0.0005 U
1,1,2-TRICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
1,1-DICHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0005		0.0001 U	0.0005 U
1,1-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001		0.0001 U	0.0005 U
1,2,4-TRICHLOROBENZENE	0.0001	0.0001 U	0.0015	0.0001 U	0.17	0.008		0.0001 U	0.0005 U
1,2-CIS-DICHLOROETHYLENE	0.0002	0.0002	0.0012	0.0002	0.0024	0.007		0.0004	0.0035
1,2-DIBROMOETHANE									
1,2-DICHLOROBENZENE	0.0001	0.0001 U	0.0049	0.0011	0.59	0.018		0.0001 U	0.0005 U
1,2-DICHLOROETHANE	0.0005 J	0.0004 J	0.0003	0.0001 U	0.005	0.036		0.0035	0.0022
1,2-DICHLOROPROPANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
1,2-TRANS-DICHLOROETHYLENE	0.0001 U	0.0001 U	0.0001	0.0001 U	0.0015	0.0004		0.0001 U	0.0005 U
1,3-CIS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
1,3-DICHLOROBENZENE	0.0001 U	0.0001 U	0.007	0.0005	0.065	0.0022		0.0001 U	0.0005 U
1,3-TRANS-DICHLOROPROPYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
1,4-DICHLOROBENZENE	0.0001 U	0.0001 U	0.021	0.0015	0.18	0.0041		0.0001 U	0.0005 U
1,4-DIOXANE	0.026	0.02 U	0.02 U	0.02 U	0.1 U	0.033		0.14	0.1 U
ACETONE	0.003 U	0.003 U	0.004	0.003 U	0.015 U	0.003 U		0.003 U	0.015 U
ACROLEIN	0.004 U	0.004 U	0.004 U	0.004 U	0.02 U	0.004 U		0.004 U	0.02 U
ACRYLONITRILE	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U
BENZENE	0.0001 U	0.0001 U	0.0096	0.0011	0.0088	0.026		0.0001 U	0.0005
BROMOFORM	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
CARBON DISULFIDE	0.0004 U	0.0004 U	0.0004 U	0.0004 U	0.002 U	0.0009		0.0004 U	0.002 U
CARBON TETRACHLORIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
CHLOROBENZENE	0.0001	0.0001	0.096	0.0091	0.12	0.021		0.0002	0.0005 U
CHLORODIBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
CHLOROETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
CHLOROFORM	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0005		0.0001 U	0.0005 U
DICHLOROBROMOMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
DICHLORODIFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
ETHYLBENZENE	0.0001 U	0.0001 U	0.0003	0.0001 U	0.0077	0.0001		0.0001 U	0.16
METHYL ACETATE	0.0003 U	0.0003 U	0.0003 U	0.0003 U	0.0015 U	0.0003 U		0.0003 U	0.0015 U
METHYL BROMIDE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	CPS-08 CPS-8-072712 7/27/2012 -	CPS-08 CPS-8-D-072712 7/27/2012 -	IRM-PZ-4 IRM-PZ-4-072612 7/26/2012 -	IRM-PZ-9 IRM-PZ-9-072612 7/26/2012 -	IRM-TP-2 IRM-TP-2-072612 7/26/2012 -	IRM-TP-4 IRM-TP-4-072612 7/26/2012 -	MI-04 MI-04-072612 7/26/2012 -	SRI-GW-16 SRI-GW-16-092512 9/25/2012 7-8 ft	SRI-GW-18 SRI-GW-18-092512 9/25/2012 7-8 ft
METHYL CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.001 U	0.0002 U		0.0002 U	0.001 U
METHYL ETHYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U
METHYL ISOBUTYL KETONE	0.001 U	0.001 U	0.001 U	0.001 U	0.005 U	0.001 U		0.001 U	0.005 U
METHYLENE CHLORIDE	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.001 U	0.0002 U		0.0002 U	0.001 U
METHYL-T-BUTYL ETHER	0.001	0.001	0.0001 U	0.0001 U	0.0007	0.0014		0.0013	0.0013
NAPHTHALENE	0.0001 U	0.0001 U	0.011	0.0001 U	0.0036	0.0005		0.0001 U	0.0005 U
STYRENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
t-Butyl Alcohol	0.004 U	0.004 U	0.004 U	0.004 U	0.02 U	0.013		0.004 U	0.02 U
TETRACHLOROETHYLENE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0016	0.0003		0.0001 U	0.0005 U
TOLUENE	0.0001 U	0.0001 U	0.0012	0.0002	0.0025	0.0003		0.0001 U	0.0011
TRICHLOROETHYLENE	0.0002	0.0002	0.0001 U	0.0001 U	0.0024	0.0047		0.0002	0.0016
TRICHLOROFLUOROMETHANE	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0005 U	0.0001 U		0.0001 U	0.0005 U
VINYL CHLORIDE	0.00008 U	0.00008 U	0.0001	0.00008 U	0.0026	0.0021		0.00008 U	0.0004 U
XYLENES,TOTAL	0.0001 U	0.0001 U	0.057	0.0003	0.012	0.0003		0.0001 U	0.52
1,2,4,5-TETRACHLOROBENZENE	0.0005 U	0.0005 U					0.0005 U		
1,4-DIOXANE	0.025 J	0.02 J					0.0009 U		

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	WCC-6S WCC-6S-072712 7/27/2012 -	WE-2RB WE-2Rb 061812 6/18/2012 -	WE-2RB WE-2Rb-012012 1/20/2012 -	WE-2RB WE-2RB-021612 2/16/2012 -	WE-2RB WE-2RB-031912 3/19/2012 -	WE-2RB WE-2RB-042312 4/23/2012 -	WE-2RB WE-2Rb-042712 4/27/2012 -	WE-2RB WE-2RB-051612 5/16/2012 -	WE-2RB WE-2Rb-071812 7/18/2012 -
1,1,1-TRICHLOROETHANE		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U
1,1,2,2-TETRACHLOROETHANE		0.003 J	0.007	0.007	0.006		0.004 J	0.004 J	0.003 J
1,1,2-TRICHLOROETHANE		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U
1,1-DICHLOROETHANE		0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U
1,1-DICHLOROETHYLENE									
1,2,4-TRICHLOROBENZENE		0.3	0.3	0.28	0.26		0.26	0.24	0.24
1,2-CIS-DICHLOROETHYLENE		0.002 J	0.001 J	0.0008 U	0.0009 J		0.0008 U	0.001 J	0.004 J
1,2-DIBROMOETHANE		0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U
1,2-DICHLOROBENZENE		0.072	0.063	0.056	0.063		0.059	0.071	0.07
1,2-DICHLOROETHANE		0.014	0.015	0.014	0.015		0.014	0.012	0.011
1,2-DICHLOROPROPANE									
1,2-TRANS-DICHLOROETHYLENE		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0009 J
1,3-CIS-DICHLOROPROPYLENE									
1,3-DICHLOROBENZENE		0.039	0.036	0.029	0.034		0.032	0.039	0.039
1,3-TRANS-DICHLOROPROPYLENE									
1,4-DICHLOROBENZENE		0.088	0.075	0.064	0.074		0.068	0.088	0.094
1,4-DIOXANE		0.07 U	0.07 U	0.07 U	0.07 U		0.07 U	0.07 U	0.07 U
ACETONE		0.006 U	0.006 U	0.006 U	0.006 U		0.006 U	0.006 U	0.017 J
ACROLEIN									
ACRYLONITRILE									
BENZENE		0.019	0.018	0.013	0.016		0.015	0.021	0.029
BROMOFORM									
CARBON DISULFIDE									
CARBON TETRACHLORIDE		0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.001 U
CHLOROBENZENE		0.44	0.41	0.36	0.37		0.32	0.42	0.47
CHLORODIBROMOMETHANE									
CHLOROETHANE									
CHLOROFORM		0.0008 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	0.0008 U	0.0008 U
DICHLOROBROMOMETHANE									
DICHLORODIFLUOROMETHANE									
ETHYLBENZENE		0.039	0.028	0.017	0.029		0.021	0.038	0.047
METHYL ACETATE									
METHYL BROMIDE									

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	WCC-6S WCC-6S-072712 7/27/2012 -	WE-2RB WE-2Rb 061812 6/18/2012 -	WE-2RB WE-2Rb-012012 1/20/2012 -	WE-2RB WE-2RB-021612 2/16/2012 -	WE-2RB WE-2RB-031912 3/19/2012 -	WE-2RB WE-2RB-042312 4/23/2012 -	WE-2RB WE-2Rb-042712 4/27/2012 -	WE-2RB WE-2RB-051612 5/16/2012 -	WE-2RB WE-2Rb-071812 7/18/2012 -
METHYL CHLORIDE									
METHYL ETHYL KETONE									
METHYL ISOBUTYL KETONE									
METHYLENE CHLORIDE		0.002 U	0.002 U	0.002 U	0.002 U		0.002 U	0.002 U	0.002 U
METHYL-T-BUTYL ETHER									
NAPHTHALENE									
STYRENE									
t-Butyl Alcohol									
TETRACHLOROETHYLENE		0.002 J	0.002 J	0.003 J	0.002 J		0.002 J	0.002 J	0.001 J
TOLUENE		0.15	0.08	0.042	0.071		0.058	0.12	0.29
TRICHLOROETHYLENE		0.004 J	0.006	0.006	0.005		0.005 J	0.004 J	0.003 J
TRICHLOROFLUOROMETHANE									
VINYL CHLORIDE		0.001 U	0.001 U	0.001 U	0.001 U		0.001 U	0.001 U	0.002 J
XYLENES,TOTAL		0.16	0.1	0.058	0.11		0.078	0.15	0.2
1,2,4,5-TETRACHLOROBENZENE	0.0005 U								
1,4-DIOXANE	0.002								

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	WE-2RB WE-2Rb-072712 7/27/2012 -	WE-2RB WE-2RB-081712 8/17/2012 -	WE-2RB WE-2Rb-091712 9/17/2012 -	WE-2RB WE-2RB-101911 10/19/2011 -	WE-2RB WE-2RB-102111 10/21/2011 -	WE-2RB WE-2Rb-111611 11/16/2011 -	WE-2RB WE-2RB-121311 12/13/2011 -
1,1,1-TRICHLOROETHANE	0.0005 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	
1,1,2,2-TETRACHLOROETHANE	0.0036	0.005 J	0.004 J	0.008		0.006	
1,1,2-TRICHLOROETHANE	0.0005 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	
1,1-DICHLOROETHANE	0.0005 U	0.001 U	0.001 U	0.001 U		0.001 U	
1,1-DICHLOROETHYLENE	0.0005 U						
1,2,4-TRICHLOROBENZENE	0.29	0.24	0.27	0.24		0.29	
1,2-CIS-DICHLOROETHYLENE	0.003	0.003 J	0.003 J	0.001 J		0.0009 J	
1,2-DIBROMOETHANE		0.001 U	0.001 U	0.001 U		0.001 U	
1,2-DICHLOROBENZENE	0.066	0.069	0.077	0.052		0.049	
1,2-DICHLOROETHANE	0.011	0.014	0.012	0.017		0.014	
1,2-DICHLOROPROPANE	0.0005 U						
1,2-TRANS-DICHLOROETHYLENE	0.0007	0.0008 U	0.001 J	0.0008 U		0.0008 U	
1,3-CIS-DICHLOROPROPYLENE	0.0005 U						
1,3-DICHLOROBENZENE	0.036	0.037	0.035	0.026		0.026	
1,3-TRANS-DICHLOROPROPYLENE	0.0005 U						
1,4-DICHLOROBENZENE	0.089	0.093	0.09	0.052		0.053	
1,4-DIOXANE	0.1 U	0.07 U	0.07 U	0.07 U		0.07 U	
ACETONE	0.02	0.013 J	0.017 J	0.006 U		0.006 U	
ACROLEIN	0.02 U						
ACRYLONITRILE	0.005 U						
BENZENE	0.025	0.027	0.028	0.015		0.012	
BROMOFORM	0.0005 U						
CARBON DISULFIDE	0.002 U						
CARBON TETRACHLORIDE	0.0005 U	0.001 U	0.001 U	0.001 U		0.001 U	
CHLOROBENZENE	0.53	0.45	0.45	0.34		0.32	
CHLORODIBROMOMETHANE	0.0005 U						
CHLOROETHANE	0.0005 U						
CHLOROFORM	0.0005 U	0.0008 U	0.0008 U	0.0008 U		0.0008 U	
DICHLOROBROMOMETHANE	0.0005 U						
DICHLORODIFLUOROMETHANE	0.0005 U						
ETHYLBENZENE	0.038	0.06	0.05	0.021		0.016	
METHYL ACETATE	0.0015 U						
METHYL BROMIDE	0.0005 U						

Table 6
Comparison of Area 1 Shallow Groundwater Data to Vapor Intrusion Groundwater Screening Levels
First Interim Deliverable - Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

Parameter	WE-2RB WE-2Rb-072712 7/27/2012 -	WE-2RB WE-2RB-081712 8/17/2012 -	WE-2RB WE-2Rb-091712 9/17/2012 -	WE-2RB WE-2RB-101911 10/19/2011 -	WE-2RB WE-2RB-102111 10/21/2011 -	WE-2RB WE-2Rb-111611 11/16/2011 -	WE-2RB WE-2RB-121311 12/13/2011 -
METHYL CHLORIDE	0.001 U						
METHYL ETHYL KETONE	0.005 U						
METHYL ISOBUTYL KETONE	0.005 U						
METHYLENE CHLORIDE	0.001 U	0.002 U	0.003 J	0.002 U		0.002 U	
METHYL-T-BUTYL ETHER	0.0008						
NAPHTHALENE	0.0047						
STYRENE	0.0005 U						
t-Butyl Alcohol	0.02 U						
TETRACHLOROETHYLENE	0.0013	0.002 J	0.001 J	0.003 J		0.002 J	
TOLUENE	0.4	0.29	0.3	0.14		0.066	
TRICHLOROETHYLENE	0.003	0.005 J	0.004 J	0.007		0.006	
TRICHLOROFLUOROMETHANE	0.0005 U						
VINYL CHLORIDE	0.0014	0.001 U	0.002 J	0.001 U		0.001 U	
XYLENES,TOTAL	0.13	0.27	0.22	0.075		0.056	
1,2,4,5-TETRACHLOROBENZENE							
1,4-DIOXANE							

Attachment D-4
USEPA Region 2 Vapor Intrusion Matrices

Attachment D
USEPA VI Matrix Approach
Baseline Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, NJ

Benzene

[Commercial Scenario]

Does the subslab concentration exceed 16 ug/m^3?
No = Vapor intrusion is over for this building
Yes = Proceed to indoor sampling

Onsite	Soil Gas (ug/m^3)	Indoor Air (ug/m^3)	Recommendation
SG-01	20.1	0.93	(1)
SG-02	93.9	1.15	(1)
SG-03	19.2	0.77	(1)

Sub-slab Soil Gas Concentration	**Indoor Air Concentration (ug/m3)**		
	1.6 to < 16	**16 to < 160**	**160 +**
16 to < 160	**(1) No Action**	**(2) Investigate**	**(3) Investigate**
160 to <1600	**(4) Monitor**	**(5) Monitor or Pursue Remediation**	**(6) Investigate or Pursue Remediation**
1600 +	**(7) Monitor or Pursue Remediation**	**(8) Pursue Remediation or Monitor**	**(9) Pursue Remediation**

Prepared by: KMW 10/10/2013
Checked by: LCG 11/6/2013
Revised by: LCG 04/25/2014
Checked by: KMW 05/22/2014

Ethylbenzene

[Commercial Scenario]

Does the subslab concentration exceed 49 ug/m^3?
No = Vapor intrusion is over for this building
Yes = Proceed to indoor sampling

Onsite	Soil Gas (ug/m^3)	Indoor Air (ug/m^3)	Recommendation
SG-01	73	0.65 J	(1)
SG-02	221.1	0.83 J	(1)
SG-04	64.7	0.96	(1)

Sub-slab Soil Gas Concentration	**Indoor Air Concentration (ug/m3)**		
	4.9 to < 49	**49 to < 490**	**490 +**
49 to < 490	**(1) No Action**	**(2) Investigate**	**(3) Investigate**
490 to < 4900	**(4) Monitor**	**(5) Monitor or Pursue Remediation**	**(6) Investigate or Pursue Remediation**
4900 +	**(7) Monitor or Pursue Remediation**	**(8) Pursue Remediation or Monitor**	**(9) Pursue Remediation**

Prepared by: KMW 10/10/2013
Checked by: LCG 11/6/2013
Revised by: LCG 04/25/2014
Checked by: KMW 05/22/2014

PCE

Does the subslab concentration exceed 470 ug/m^3? **[Commercial Scenario]**

No = Vapor intrusion is over for this building
Yes = Proceed to indoor sampling

Onsite	Soil Gas (ug/m^3)	Indoor Air (ug/m^3)	Recommendation
SG-01	936	0.14 U	(1)

Sub-slab Soil Gas Concentration	**Indoor Air Concentration (ug/m3)**		
	47 to < 470	**470 to < 4700**	**4700 +**
470 to < 4700	**(1) No Action**	**(2) Investigate**	**(3) Investigate**
4700 to < 47000	**(4) Monitor**	**(5) Monitor or Pursue Remediation**	**(6) Investigate or Pursue Remediation**
47000 +	**(7) Monitor or Pursue Remediation**	**(8) Pursue Remediation or Monitor**	**(9) Pursue Remediation**

Prepared by: KMW 10/10/2013
Checked by: LCG 11/6/2013
Revised by: LCG 04/25/2014
Checked by: KMW 05/22/2014

Chloroform

[Commercial Scenario]

Does the subslab concentration exceed 5.3 ug/m^3?
No = Vapor intrusion is over for this building
Yes = Proceed to indoor sampling

Onsite	Soil Gas (ug/m^3)	Indoor Air (ug/m^3)	Recommendation
SG-01	29.8	0.14 U	(1)
SG-02	202.2	0.14 U	(4)
SG-03	33.7	0.14 U	(1)
SG-04	209	0.14 U	(4)

Sub-slab Soil Gas Concentration	**Indoor Air Concentration (ug/m3)**		
	0.53 to < 5.3	**5.3 to < 53**	**53 +**
5.3 to < 53	**(1) No Action**	**(2) Investigate**	**(3) Investigate**
53 to < 530	**(4) Monitor**	**(5) Monitor or Pursue Remediation**	**(6) Investigate or Pursue Remediation**
530 +	**(7) Monitor or Pursue Remediation**	**(8) Pursue Remediation or Monitor**	**(9) Pursue Remediation**

Prepared by: KMW 10/10/2013
Checked by: LCG 11/6/2013
Revised by: LCG 04/25/2014
Checked by: KMW 05/22/2014

Attachment E
Photolog

Photograph 1: Condition of Pricketts Brook as it passes through the CPS property.

Photograph 2: Condition of Pricketts Brook as it passes through the CPS property.

Photograph 3: Pricketts Brook as it passes from the CPS property to the Madison property.

Photograph 4: Pricketts Brook on the Madison property. Photograph taken towards the fence at the western boundary of the Madison property.

Photograph 5: Close up of Pricketts Brook on the Madison property. Photograph taken towards the fence at the western boundary of the Madison property.

Photograph 6: Prickets Brook channel as it passes under the bridge at the Madison property.

Photograph 7: Looking east towards the CPS property from the bridge on the Madison property.

Photograph 8: Pricketts Brook from outside of the Madison property looking east towards the Madison property boundary fence.

Photograph 9: Pricketts Brook as it passes through a vegetated area towards Pricketts Pond.

Photograph 10: Pricketts Brook as passes through a more wooded area as it moves towards Pricketts Pond.

Photograph 11: Pricketts Brook where it discharges to Pricketts Pond.

Photograph 12: Looking south towards Pricketts Pond

Photograph 13: Close up looking south towards Pricketts Pond

Photograph 14: Close up of ground surface along the edge of Pricketts Pond

Photograph 15: Looking from the southern end of Pricketts Pond towards the northeast

* Photographs were taken on October 4, 2012.

ATTACHMENT F

ProUCL Outputs

(PROVIDED ON CD)

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,1,2,2-TETRACHLOROETHANE

General Statistics

Total Number of Observations	55	Number of Distinct Observations	32
Number of Detects	4	Number of Non-Detects	51
Number of Distinct Detects	4	Number of Distinct Non-Detects	28
Minimum Detect	0.393	Minimum Non-Detect	0.001
Maximum Detect	11	Maximum Non-Detect	16.46
Variance Detects	21.85	Percent Non-Detects	92.73%
Mean Detects	4.198	SD Detects	4.674
Median Detects	2.7	CV Detects	1.113
Skewness Detects	1.641	Kurtosis Detects	3.007
Mean of Logged Detects	0.857	SD of Logged Detects	1.373

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.841	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.338	Standard Error of Mean	0.26
SD	1.602	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.772	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.765	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.117	95% KM Chebyshev UCL	1.47
97.5% KM Chebyshev UCL	1.96	99% KM Chebyshev UCL	2.922

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.253	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.667	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.228	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.402	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1	k star (bias corrected MLE)	0.417
Theta hat (MLE)	4.2	Theta star (bias corrected MLE)	10.08
nu hat (MLE)	7.997	nu star (bias corrected)	3.333
MLE Mean (bias corrected)	4.198	MLE Sd (bias corrected)	6.505

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0444	nu hat (KM)	4.888
Approximate Chi Square Value (4.89, α)	1.101	Adjusted Chi Square Value (4.89, β)	1.055
95% Gamma Approximate KM-UCL (use when n>=50)	1.5	95% Gamma Adjusted KM-UCL (use when n<50)	1.566

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.315
Maximum	11	Median	0.01
SD	1.555	CV	4.944
k hat (MLE)	0.235	k star (bias corrected MLE)	0.234
Theta hat (MLE)	1.338	Theta star (bias corrected MLE)	1.342
nu hat (MLE)	25.86	nu star (bias corrected)	25.78
MLE Mean (bias corrected)	0.315	MLE Sd (bias corrected)	0.65
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (25.78, α)	15.21	Adjusted Chi Square Value (25.78, β)	14.99
95% Gamma Approximate UCL (use when n>=50)	0.533	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.968	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.314	Mean in Log Scale	-5.32
SD in Original Scale	1.555	SD in Log Scale	2.373
95% t UCL (assumes normality of ROS data)	0.665	95% Percentile Bootstrap UCL	0.698
95% BCA Bootstrap UCL	1.016	95% Bootstrap t UCL	1.644
95% H-UCL (Log ROS)	0.328		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.238	95% H-UCL (KM -Log)	0.0697
KM SD (logged)	2.186	95% Critical H Value (KM-Log)	3.982
KM Standard Error of Mean (logged)	0.371		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1.094	Mean in Log Scale	-2.214
SD in Original Scale	2.316	SD in Log Scale	2.759
95% t UCL (Assumes normality)	1.617	95% H-Stat UCL	31.31

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.772	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,3-TRICHLOROBENZENE

General Statistics

Total Number of Observations	27	Number of Distinct Observations	21
Number of Detects	12	Number of Non-Detects	15
Number of Distinct Detects	12	Number of Distinct Non-Detects	9
Minimum Detect	0.0802	Minimum Non-Detect	0.001
Maximum Detect	450	Maximum Non-Detect	7.691
Variance Detects	15996	Percent Non-Detects	55.56%
Mean Detects	86.62	SD Detects	126.5
Median Detects	51.48	CV Detects	1.46
Skewness Detects	2.478	Kurtosis Detects	6.88
Mean of Logged Detects	2.717	SD of Logged Detects	2.85

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.688	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.264	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	38.53	Standard Error of Mean	18.39
SD	91.47	95% KM (BCA) UCL	75.46
95% KM (t) UCL	69.89	95% KM (Percentile Bootstrap) UCL	70.55
95% KM (z) UCL	68.77	95% KM Bootstrap t UCL	111.5
90% KM Chebyshev UCL	93.69	95% KM Chebyshev UCL	118.7
97.5% KM Chebyshev UCL	153.4	99% KM Chebyshev UCL	221.5

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.462	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.808	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.229	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.263	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.38	k star (bias corrected MLE)	0.341
Theta hat (MLE)	227.8	Theta star (bias corrected MLE)	254.2
nu hat (MLE)	9.127	nu star (bias corrected)	8.179
MLE Mean (bias corrected)	86.62	MLE Sd (bias corrected)	148.4

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.177	nu hat (KM)	9.58
Approximate Chi Square Value (9.58, α)	3.681	Adjusted Chi Square Value (9.58, β)	3.45
95% Gamma Approximate KM-UCL (use when n>=50)	100.3	95% Gamma Adjusted KM-UCL (use when n<50)	107

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	38.5
Maximum	450	Median	0.01
SD	93.23	CV	2.421
k hat (MLE)	0.153	k star (bias corrected MLE)	0.161
Theta hat (MLE)	251.3	Theta star (bias corrected MLE)	239.3
nu hat (MLE)	8.273	nu star (bias corrected)	8.687
MLE Mean (bias corrected)	38.5	MLE Sd (bias corrected)	96
		Adjusted Level of Significance (β)	0.0401
Approximate Chi Square Value (8.69, α)	3.139	Adjusted Chi Square Value (8.69, β)	2.929
95% Gamma Approximate UCL (use when n>=50)	106.6	95% Gamma Adjusted UCL (use when n<50)	114.2

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.306	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data Not Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	38.51	Mean in Log Scale	-1.169
SD in Original Scale	93.22	SD in Log Scale	4.189
95% t UCL (assumes normality of ROS data)	69.11	95% Percentile Bootstrap UCL	71.03
95% BCA Bootstrap UCL	83.28	95% Bootstrap t UCL	110.5
95% H-UCL (Log ROS)	1265511		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.393	95% H-UCL (KM -Log)	3.707E+8
KM SD (logged)	5.058	95% Critical H Value (KM-Log)	9.407
KM Standard Error of Mean (logged)	1.044		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	38.98	Mean in Log Scale	-1.087
SD in Original Scale	93.03	SD in Log Scale	4.807
95% t UCL (Assumes normality)	69.52	95% H-Stat UCL	1.635E+8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	69.89	95% GROS Adjusted Gamma UCL	114.2
95% Adjusted Gamma KM-UCL	107		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-TRICHLOROBENZENE

General Statistics

Total Number of Observations	27	Number of Distinct Observations	22
Number of Detects	14	Number of Non-Detects	13
Number of Distinct Detects	14	Number of Distinct Non-Detects	8
Minimum Detect	0.003	Minimum Non-Detect	0.001
Maximum Detect	1145	Maximum Non-Detect	8.049
Variance Detects	124110	Percent Non-Detects	48.15%
Mean Detects	311.2	SD Detects	352.3
Median Detects	282.5	CV Detects	1.132
Skewness Detects	1.157	Kurtosis Detects	0.961
Mean of Logged Detects	3.628	SD of Logged Detects	3.688

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.844	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	161.4	Standard Error of Mean	57.85
SD	289.7	95% KM (BCA) UCL	253.2
95% KM (t) UCL	260.1	95% KM (Percentile Bootstrap) UCL	256.1
95% KM (z) UCL	256.6	95% KM Bootstrap t UCL	302.4
90% KM Chebyshev UCL	335	95% KM Chebyshev UCL	413.6
97.5% KM Chebyshev UCL	522.7	99% KM Chebyshev UCL	737

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.653	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.828	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.263	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.247	Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.323	k star (bias corrected MLE)	0.301
Theta hat (MLE)	964.6	Theta star (bias corrected MLE)	1034
nu hat (MLE)	9.032	nu star (bias corrected)	8.43
MLE Mean (bias corrected)	311.2	MLE Sd (bias corrected)	567.1

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.31	nu hat (KM)	16.77
Approximate Chi Square Value (16.77, α)	8.506	Adjusted Chi Square Value (16.77, β)	8.13
95% Gamma Approximate KM-UCL (use when n>=50)	318.2	95% Gamma Adjusted KM-UCL (use when n<50)	332.9

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.003	Mean	161.4
Maximum	1145	Median	0.01
SD	295.2	CV	1.83
k hat (MLE)	0.143	k star (bias corrected MLE)	0.152
Theta hat (MLE)	1130	Theta star (bias corrected MLE)	1064
nu hat (MLE)	7.712	nu star (bias corrected)	8.189
MLE Mean (bias corrected)	161.4	MLE Sd (bias corrected)	414.3
		Adjusted Level of Significance (β)	0.0401
Approximate Chi Square Value (8.19, α)	2.845	Adjusted Chi Square Value (8.19, β)	2.647
95% Gamma Approximate UCL (use when n>=50)	464.5	95% Gamma Adjusted UCL (use when n<50)	499.2

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.824	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.273	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	161.4	Mean in Log Scale	-0.218
SD in Original Scale	295.2	SD in Log Scale	4.985
95% t UCL (assumes normality of ROS data)	258.3	95% Percentile Bootstrap UCL	260.6
95% BCA Bootstrap UCL	276	95% Bootstrap t UCL	308.4
95% H-UCL (Log ROS)	1.733E+9		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	161.7	Mean in Log Scale	-0.164
SD in Original Scale	295	SD in Log Scale	5.389
95% t UCL (Assumes normality)	258.6	95% H-Stat UCL	6.727E+10

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	260.1	95% KM (Percentile Bootstrap) UCL	256.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-CIS-DICHLOROETHYLENE

General Statistics

Total Number of Observations	55	Number of Distinct Observations	35
Number of Detects	11	Number of Non-Detects	44
Number of Distinct Detects	11	Number of Distinct Non-Detects	25
Minimum Detect	0.15	Minimum Non-Detect	0.001
Maximum Detect	26	Maximum Non-Detect	5.366
Variance Detects	82.81	Percent Non-Detects	80%
Mean Detects	9.437	SD Detects	9.1
Median Detects	6.9	CV Detects	0.964
Skewness Detects	0.829	Kurtosis Detects	-0.317
Mean of Logged Detects	1.286	SD of Logged Detects	1.934

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.885	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.155	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.899	Standard Error of Mean	0.766
SD	5.411	95% KM (BCA) UCL	3.301
95% KM (t) UCL	3.18	95% KM (Percentile Bootstrap) UCL	3.203
95% KM (z) UCL	3.158	95% KM Bootstrap t UCL	3.903
90% KM Chebyshev UCL	4.196	95% KM Chebyshev UCL	5.236
97.5% KM Chebyshev UCL	6.68	99% KM Chebyshev UCL	9.516

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.528	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.771	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.189	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.267	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.638	k star (bias corrected MLE)	0.525
Theta hat (MLE)	14.78	Theta star (bias corrected MLE)	17.98
nu hat (MLE)	14.04	nu star (bias corrected)	11.55
MLE Mean (bias corrected)	9.437	MLE Sd (bias corrected)	13.03

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.123	nu hat (KM)	13.54
Approximate Chi Square Value (13.54, α)	6.261	Adjusted Chi Square Value (13.54, β)	6.127
95% Gamma Approximate KM-UCL (use when n>=50)	4.108	95% Gamma Adjusted KM-UCL (use when n<50)	4.198

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1.895
Maximum	26	Median	0.01
SD	5.461	CV	2.881
k hat (MLE)	0.183	k star (bias corrected MLE)	0.186
Theta hat (MLE)	10.33	Theta star (bias corrected MLE)	10.22
nu hat (MLE)	20.18	nu star (bias corrected)	20.41
MLE Mean (bias corrected)	1.895	MLE Sd (bias corrected)	4.401
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (20.41, α)	11.15	Adjusted Chi Square Value (20.41, β)	10.97
95% Gamma Approximate UCL (use when n>=50)	3.469	95% Gamma Adjusted UCL (use when n<50)	3.527

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.827	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.233	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.898	Mean in Log Scale	-4.04
SD in Original Scale	5.46	SD in Log Scale	3.186
95% t UCL (assumes normality of ROS data)	3.13	95% Percentile Bootstrap UCL	3.122
95% BCA Bootstrap UCL	3.606	95% Bootstrap t UCL	4.005
95% H-UCL (Log ROS)	31.25		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.129	95% H-UCL (KM -Log)	32.72
KM SD (logged)	3.424	95% Critical H Value (KM-Log)	5.908
KM Standard Error of Mean (logged)	0.504		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2.167	Mean in Log Scale	-2.11
SD in Original Scale	5.398	SD in Log Scale	2.976
95% t UCL (Assumes normality)	3.385	95% H-Stat UCL	84.77

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	3.18	95% KM (Percentile Bootstrap) UCL	3.203

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROBENZENE

General Statistics

Total Number of Observations	58	Number of Distinct Observations	46
Number of Detects	36	Number of Non-Detects	22
Number of Distinct Detects	36	Number of Distinct Non-Detects	11
Minimum Detect	0.0043	Minimum Non-Detect	0.001
Maximum Detect	1000	Maximum Non-Detect	0.79
Variance Detects	47932	Percent Non-Detects	37.93%
Mean Detects	157.6	SD Detects	218.9
Median Detects	55.69	CV Detects	1.389
Skewness Detects	2.028	Kurtosis Detects	5.075
Mean of Logged Detects	3.136	SD of Logged Detects	3.032

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.746	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.236	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.148	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	97.84	Standard Error of Mean	24.83
SD	186.5	95% KM (BCA) UCL	139.1
95% KM (t) UCL	139.4	95% KM (Percentile Bootstrap) UCL	141.5
95% KM (z) UCL	138.7	95% KM Bootstrap t UCL	155
90% KM Chebyshev UCL	172.3	95% KM Chebyshev UCL	206.1
97.5% KM Chebyshev UCL	252.9	99% KM Chebyshev UCL	344.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.325	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.846	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.106	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.158	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.35	k star (bias corrected MLE)	0.339
Theta hat (MLE)	451	Theta star (bias corrected MLE)	465.1
nu hat (MLE)	25.16	nu star (bias corrected)	24.4
MLE Mean (bias corrected)	157.6	MLE Sd (bias corrected)	270.8

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.275	nu hat (KM)	31.93
Approximate Chi Square Value (31.93, α)	20.02	Adjusted Chi Square Value (31.93, β)	19.78
95% Gamma Approximate KM-UCL (use when n>=50)	156.1	95% Gamma Adjusted KM-UCL (use when n<50)	158

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0043	Mean	97.84
Maximum	1000	Median	2.884
SD	188.1	CV	1.923
k hat (MLE)	0.172	k star (bias corrected MLE)	0.174
Theta hat (MLE)	569.4	Theta star (bias corrected MLE)	560.9
nu hat (MLE)	19.93	nu star (bias corrected)	20.23
MLE Mean (bias corrected)	97.84	MLE Sd (bias corrected)	234.3
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (20.23, α)	11.02	Adjusted Chi Square Value (20.23, β)	10.85
95% Gamma Approximate UCL (use when n>=50)	179.6	95% Gamma Adjusted UCL (use when n<50)	182.5

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.892	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.935	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.151	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.148	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	97.87	Mean in Log Scale	0.722
SD in Original Scale	188.1	SD in Log Scale	4.001
95% t UCL (assumes normality of ROS data)	139.2	95% Percentile Bootstrap UCL	141.3
95% BCA Bootstrap UCL	148.2	95% Bootstrap t UCL	156.1
95% H-UCL (Log ROS)	258342		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	97.86	Mean in Log Scale	0.28
SD in Original Scale	188.1	SD in Log Scale	4.606
95% t UCL (Assumes normality)	139.2	95% H-Stat UCL	6926020

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	139.1	95% GROS Approximate Gamma UCL	179.6
95% Approximate Gamma KM-UCL	156.1		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROETHANE

General Statistics

Total Number of Observations	55	Number of Distinct Observations	33
Number of Detects	7	Number of Non-Detects	48
Number of Distinct Detects	6	Number of Distinct Non-Detects	27
Minimum Detect	0.0731	Minimum Non-Detect	0.001
Maximum Detect	9.5	Maximum Non-Detect	5.902
Variance Detects	13.43	Percent Non-Detects	87.27%
Mean Detects	3.731	SD Detects	3.664
Median Detects	1.8	CV Detects	0.982
Skewness Detects	0.674	Kurtosis Detects	-1.217
Mean of Logged Detects	0.502	SD of Logged Detects	1.752

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.889	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.272	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.494	Standard Error of Mean	0.255
SD	1.74	95% KM (BCA) UCL	0.996
95% KM (t) UCL	0.921	95% KM (Percentile Bootstrap) UCL	0.932
95% KM (z) UCL	0.914	95% KM Bootstrap t UCL	1.066
90% KM Chebyshev UCL	1.259	95% KM Chebyshev UCL	1.606
97.5% KM Chebyshev UCL	2.087	99% KM Chebyshev UCL	3.032

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.27	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.182	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.323	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.737	k star (bias corrected MLE)	0.516
Theta hat (MLE)	5.065	Theta star (bias corrected MLE)	7.229
nu hat (MLE)	10.31	nu star (bias corrected)	7.226
MLE Mean (bias corrected)	3.731	MLE Sd (bias corrected)	5.193

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0807	nu hat (KM)	8.879
Approximate Chi Square Value (8.88, α)	3.254	Adjusted Chi Square Value (8.88, β)	3.163
95% Gamma Approximate KM-UCL (use when n>=50)	1.349	95% Gamma Adjusted KM-UCL (use when n<50)	1.388

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.484
Maximum	9.5	Median	0.01
SD	1.749	CV	3.616
k hat (MLE)	0.224	k star (bias corrected MLE)	0.224
Theta hat (MLE)	2.16	Theta star (bias corrected MLE)	2.161
nu hat (MLE)	24.63	nu star (bias corrected)	24.62
MLE Mean (bias corrected)	0.484	MLE Sd (bias corrected)	1.022
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (24.62, α)	14.32	Adjusted Chi Square Value (24.62, β)	14.11
95% Gamma Approximate UCL (use when n>=50)	0.831	95% Gamma Adjusted UCL (use when n<50)	0.844

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.9	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.481	Mean in Log Scale	-5.212
SD in Original Scale	1.749	SD in Log Scale	2.746
95% t UCL (assumes normality of ROS data)	0.876	95% Percentile Bootstrap UCL	0.894
95% BCA Bootstrap UCL	1.081	95% Bootstrap t UCL	1.367
95% H-UCL (Log ROS)	1.48		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.696	95% H-UCL (KM -Log)	0.735
KM SD (logged)	2.691	95% Critical H Value (KM-Log)	4.83
KM Standard Error of Mean (logged)	0.465		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.849	Mean in Log Scale	-2.329
SD in Original Scale	1.806	SD in Log Scale	2.702
95% t UCL (Assumes normality)	1.257	95% H-Stat UCL	22.24

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.921	95% KM (Percentile Bootstrap) UCL	0.932

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,3-DICHLOROBENZENE

General Statistics

Total Number of Observations	57	Number of Distinct Observations	35
Number of Detects	12	Number of Non-Detects	45
Number of Distinct Detects	12	Number of Distinct Non-Detects	23
Minimum Detect	0.004	Minimum Non-Detect	0.001
Maximum Detect	6	Maximum Non-Detect	6.439
Variance Detects	2.888	Percent Non-Detects	78.95%
Mean Detects	0.996	SD Detects	1.699
Median Detects	0.432	CV Detects	1.707
Skewness Detects	2.747	Kurtosis Detects	7.941
Mean of Logged Detects	-1.263	SD of Logged Detects	2.017

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.602	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.324	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.241	Standard Error of Mean	0.122
SD	0.862	95% KM (BCA) UCL	0.474
95% KM (t) UCL	0.445	95% KM (Percentile Bootstrap) UCL	0.46
95% KM (z) UCL	0.441	95% KM Bootstrap t UCL	0.888
90% KM Chebyshev UCL	0.607	95% KM Chebyshev UCL	0.773
97.5% KM Chebyshev UCL	1.003	99% KM Chebyshev UCL	1.455

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.303	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.785	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.16	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.259	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.504	k star (bias corrected MLE)	0.433
Theta hat (MLE)	1.976	Theta star (bias corrected MLE)	2.297
nu hat (MLE)	12.09	nu star (bias corrected)	10.4
MLE Mean (bias corrected)	0.996	MLE Sd (bias corrected)	1.512

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.078	nu hat (KM)	8.887
Approximate Chi Square Value (8.89, α)	3.259	Adjusted Chi Square Value (8.89, β)	3.171
95% Gamma Approximate KM-UCL (use when n>=50)	0.656	95% Gamma Adjusted KM-UCL (use when n<50)	0.674

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	0.218
Maximum	6	Median	0.01
SD	0.855	CV	3.932
k hat (MLE)	0.292	k star (bias corrected MLE)	0.288
Theta hat (MLE)	0.746	Theta star (bias corrected MLE)	0.756
nu hat (MLE)	33.24	nu star (bias corrected)	32.82
MLE Mean (bias corrected)	0.218	MLE Sd (bias corrected)	0.405
		Adjusted Level of Significance (β)	0.0458
Approximate Chi Square Value (32.82, α)	20.72	Adjusted Chi Square Value (32.82, β)	20.47
95% Gamma Approximate UCL (use when n>=50)	0.344	95% Gamma Adjusted UCL (use when n<50)	0.349

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.172	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.214	Mean in Log Scale	-5.092
SD in Original Scale	0.856	SD in Log Scale	2.567
95% t UCL (assumes normality of ROS data)	0.404	95% Percentile Bootstrap UCL	0.429
95% BCA Bootstrap UCL	0.567	95% Bootstrap t UCL	0.981
95% H-UCL (Log ROS)	0.861		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.049	95% H-UCL (KM -Log)	1.146
KM SD (logged)	2.631	95% Critical H Value (KM-Log)	4.903
KM Standard Error of Mean (logged)	0.479		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.583	Mean in Log Scale	-2.415
SD in Original Scale	1.097	SD in Log Scale	2.513
95% t UCL (Assumes normality)	0.826	95% H-Stat UCL	10.24

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.445	95% GROS Approximate Gamma UCL	0.344
95% Approximate Gamma KM-UCL	0.656		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,4-DICHLOROBENZENE

General Statistics

Total Number of Observations	57	Number of Distinct Observations	45
Number of Detects	29	Number of Non-Detects	28
Number of Distinct Detects	29	Number of Distinct Non-Detects	17
Minimum Detect	0.003	Minimum Non-Detect	0.001
Maximum Detect	54	Maximum Non-Detect	6.797
Variance Detects	122.7	Percent Non-Detects	49.12%
Mean Detects	6.426	SD Detects	11.08
Median Detects	2.8	CV Detects	1.724
Skewness Detects	3.267	Kurtosis Detects	12.33
Mean of Logged Detects	0.265	SD of Logged Detects	2.415

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.593	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.288	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.335	Standard Error of Mean	1.133
SD	8.391	95% KM (BCA) UCL	5.212
95% KM (t) UCL	5.229	95% KM (Percentile Bootstrap) UCL	5.379
95% KM (z) UCL	5.197	95% KM Bootstrap t UCL	6.894
90% KM Chebyshev UCL	6.732	95% KM Chebyshev UCL	8.271
97.5% KM Chebyshev UCL	10.41	99% KM Chebyshev UCL	14.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.361	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.831	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.105	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.174	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.411	k star (bias corrected MLE)	0.391
Theta hat (MLE)	15.65	Theta star (bias corrected MLE)	16.43
nu hat (MLE)	23.82	nu star (bias corrected)	22.69
MLE Mean (bias corrected)	6.426	MLE Sd (bias corrected)	10.27

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.158	nu hat (KM)	18
Approximate Chi Square Value (18.00, α)	9.394	Adjusted Chi Square Value (18.00, β)	9.232
95% Gamma Approximate KM-UCL (use when n>=50)	6.391	95% Gamma Adjusted KM-UCL (use when n<50)	6.503

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.003	Mean	3.274
Maximum	54	Median	0.01
SD	8.475	CV	2.588
k hat (MLE)	0.219	k star (bias corrected MLE)	0.219
Theta hat (MLE)	14.95	Theta star (bias corrected MLE)	14.94
nu hat (MLE)	24.96	nu star (bias corrected)	24.98
MLE Mean (bias corrected)	3.274	MLE Sd (bias corrected)	6.995
		Adjusted Level of Significance (β)	0.0458
Approximate Chi Square Value (24.98, α)	14.6	Adjusted Chi Square Value (24.98, β)	14.39
95% Gamma Approximate UCL (use when n>=50)	5.604	95% Gamma Adjusted UCL (use when n<50)	5.684

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.929	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.173	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data Not Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.28	Mean in Log Scale	-2.043
SD in Original Scale	8.473	SD in Log Scale	3.065
95% t UCL (assumes normality of ROS data)	5.158	95% Percentile Bootstrap UCL	5.362
95% BCA Bootstrap UCL	6.448	95% Bootstrap t UCL	7.485
95% H-UCL (Log ROS)	137.2		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.598	95% H-UCL (KM -Log)	1663
KM SD (logged)	3.692	95% Critical H Value (KM-Log)	6.485
KM Standard Error of Mean (logged)	0.554		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	3.517	Mean in Log Scale	-1.395
SD in Original Scale	8.412	SD in Log Scale	3.102
95% t UCL (Assumes normality)	5.38	95% H-Stat UCL	309.4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	5.212	95% GROS Approximate Gamma UCL	5.604
95% Approximate Gamma KM-UCL	6.391		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZENE

General Statistics

Total Number of Observations	55	Number of Distinct Observations	40
Number of Detects	19	Number of Non-Detects	36
Number of Distinct Detects	17	Number of Distinct Non-Detects	24
Minimum Detect	0.006	Minimum Non-Detect	5.0000E-4
Maximum Detect	19	Maximum Non-Detect	4.114
Variance Detects	28.39	Percent Non-Detects	65.45%
Mean Detects	3.845	SD Detects	5.328
Median Detects	1.2	CV Detects	1.386
Skewness Detects	1.755	Kurtosis Detects	2.606
Mean of Logged Detects	0.0295	SD of Logged Detects	2.153

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.738	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.308	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.359	Standard Error of Mean	0.492
SD	3.546	95% KM (BCA) UCL	2.237
95% KM (t) UCL	2.182	95% KM (Percentile Bootstrap) UCL	2.194
95% KM (z) UCL	2.168	95% KM Bootstrap t UCL	2.666
90% KM Chebyshev UCL	2.834	95% KM Chebyshev UCL	3.502
97.5% KM Chebyshev UCL	4.43	99% KM Chebyshev UCL	6.251

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.282	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.806	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.171	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.21	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.485	k star (bias corrected MLE)	0.443
Theta hat (MLE)	7.935	Theta star (bias corrected MLE)	8.677
nu hat (MLE)	18.41	nu star (bias corrected)	16.84
MLE Mean (bias corrected)	3.845	MLE Sd (bias corrected)	5.776

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.147	nu hat (KM)	16.15
Approximate Chi Square Value (16.15, α)	8.069	Adjusted Chi Square Value (16.15, β)	7.915
95% Gamma Approximate KM-UCL (use when n>=50)	2.72	95% Gamma Adjusted KM-UCL (use when n<50)	2.773

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.006	Mean	1.335
Maximum	19	Median	0.01
SD	3.585	CV	2.685
k hat (MLE)	0.22	k star (bias corrected MLE)	0.22
Theta hat (MLE)	6.063	Theta star (bias corrected MLE)	6.06
nu hat (MLE)	24.22	nu star (bias corrected)	24.23
MLE Mean (bias corrected)	1.335	MLE Sd (bias corrected)	2.844
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (24.23, α)	14.02	Adjusted Chi Square Value (24.23, β)	13.81
95% Gamma Approximate UCL (use when n>=50)	2.306	95% Gamma Adjusted UCL (use when n<50)	2.341

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.144	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.336	Mean in Log Scale	-3.306
SD in Original Scale	3.584	SD in Log Scale	2.916
95% t UCL (assumes normality of ROS data)	2.145	95% Percentile Bootstrap UCL	2.197
95% BCA Bootstrap UCL	2.418	95% Bootstrap t UCL	2.654
95% H-UCL (Log ROS)	19.95		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.172	95% H-UCL (KM -Log)	369.9
KM SD (logged)	3.711	95% Critical H Value (KM-Log)	6.339
KM Standard Error of Mean (logged)	0.63		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1.538	Mean in Log Scale	-1.937
SD in Original Scale	3.538	SD in Log Scale	2.869
95% t UCL (Assumes normality)	2.337	95% H-Stat UCL	64.35

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	2.182	95% GROS Approximate Gamma UCL	2.306
95% Approximate Gamma KM-UCL	2.72		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHLOROBENZENE

General Statistics

Total Number of Observations	58	Number of Distinct Observations	43
Number of Detects	27	Number of Non-Detects	31
Number of Distinct Detects	24	Number of Distinct Non-Detects	21
Minimum Detect	0.015	Minimum Non-Detect	0.001
Maximum Detect	42	Maximum Non-Detect	8.764
Variance Detects	102.5	Percent Non-Detects	53.45%
Mean Detects	4.486	SD Detects	10.12
Median Detects	1.41	CV Detects	2.257
Skewness Detects	3.326	Kurtosis Detects	10.32
Mean of Logged Detects	0.0438	SD of Logged Detects	1.85

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.441	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.377	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.179	Standard Error of Mean	0.956
SD	7.128	95% KM (BCA) UCL	4.101
95% KM (t) UCL	3.777	95% KM (Percentile Bootstrap) UCL	3.867
95% KM (z) UCL	3.751	95% KM Bootstrap t UCL	8.633
90% KM Chebyshev UCL	5.046	95% KM Chebyshev UCL	6.345
97.5% KM Chebyshev UCL	8.147	99% KM Chebyshev UCL	11.69

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.168	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.82	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.181	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.179	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.444	k star (bias corrected MLE)	0.419
Theta hat (MLE)	10.1	Theta star (bias corrected MLE)	10.69
nu hat (MLE)	23.98	nu star (bias corrected)	22.65
MLE Mean (bias corrected)	4.486	MLE Sd (bias corrected)	6.926

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0935	nu hat (KM)	10.85
Approximate Chi Square Value (10.85, α)	4.477	Adjusted Chi Square Value (10.85, β)	4.373
95% Gamma Approximate KM-UCL (use when n>=50)	5.28	95% Gamma Adjusted KM-UCL (use when n<50)	5.406

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.093
Maximum	42	Median	0.01
SD	7.199	CV	3.439
k hat (MLE)	0.227	k star (bias corrected MLE)	0.227
Theta hat (MLE)	9.227	Theta star (bias corrected MLE)	9.237
nu hat (MLE)	26.32	nu star (bias corrected)	26.29
MLE Mean (bias corrected)	2.093	MLE Sd (bias corrected)	4.397
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (26.29, α)	15.6	Adjusted Chi Square Value (26.29, β)	15.39
95% Gamma Approximate UCL (use when n>=50)	3.527	95% Gamma Adjusted UCL (use when n<50)	3.576

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.973	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.112	Mean in Log Scale	-1.902
SD in Original Scale	7.194	SD in Log Scale	2.353
95% t UCL (assumes normality of ROS data)	3.691	95% Percentile Bootstrap UCL	3.673
95% BCA Bootstrap UCL	4.647	95% Bootstrap t UCL	9.346
95% H-UCL (Log ROS)	9.522		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.828	95% H-UCL (KM -Log)	386.7
KM SD (logged)	3.45	95% Critical H Value (KM-Log)	6.202
KM Standard Error of Mean (logged)	0.544		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2.452	Mean in Log Scale	-1.441
SD in Original Scale	7.158	SD in Log Scale	2.815
95% t UCL (Assumes normality)	4.023	95% H-Stat UCL	88.53

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 6.345

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CYCLOHEXANE, METHYL-

General Statistics

Total Number of Observations	11	Number of Distinct Observations	6
Number of Detects	5	Number of Non-Detects	6
Number of Distinct Detects	5	Number of Distinct Non-Detects	1
Minimum Detect	0.002	Minimum Non-Detect	0.001
Maximum Detect	210	Maximum Non-Detect	0.001
Variance Detects	8790	Percent Non-Detects	54.55%
Mean Detects	42.29	SD Detects	93.76
Median Detects	0.19	CV Detects	2.217
Skewness Detects	2.236	Kurtosis Detects	4.999
Mean of Logged Detects	-1.072	SD of Logged Detects	4.282

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.556	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.469	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	19.22	Standard Error of Mean	20.34
SD	60.33	95% KM (BCA) UCL	57.29
95% KM (t) UCL	56.08	95% KM (Percentile Bootstrap) UCL	57.3
95% KM (z) UCL	52.67	95% KM Bootstrap t UCL	15562
90% KM Chebyshev UCL	80.23	95% KM Chebyshev UCL	107.9
97.5% KM Chebyshev UCL	146.2	99% KM Chebyshev UCL	221.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.546	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.814	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.343	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.158	k star (bias corrected MLE)	0.197
Theta hat (MLE)	267.1	Theta star (bias corrected MLE)	215
nu hat (MLE)	1.583	nu star (bias corrected)	1.967
MLE Mean (bias corrected)	42.29	MLE Sd (bias corrected)	95.36

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.102	nu hat (KM)	2.233
Approximate Chi Square Value (2.23, α)	0.187	Adjusted Chi Square Value (2.23, β)	0.137
95% Gamma Approximate KM-UCL (use when n>=50)	229.5	95% Gamma Adjusted KM-UCL (use when n<50)	313.3

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	19.23
Maximum	210	Median	0.01
SD	63.27	CV	3.291
k hat (MLE)	0.131	k star (bias corrected MLE)	0.156
Theta hat (MLE)	146.2	Theta star (bias corrected MLE)	123.1
nu hat (MLE)	2.893	nu star (bias corrected)	3.437
MLE Mean (bias corrected)	19.23	MLE Sd (bias corrected)	48.64
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (3.44, α)	0.513	Adjusted Chi Square Value (3.44, β)	0.366
95% Gamma Approximate UCL (use when n>=50)	128.8	95% Gamma Adjusted UCL (use when n<50)	180.5

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.975	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.185	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	19.22	Mean in Log Scale	-8.783
SD in Original Scale	63.27	SD in Log Scale	8.541
95% t UCL (assumes normality of ROS data)	53.8	95% Percentile Bootstrap UCL	57.38
95% BCA Bootstrap UCL	76.58	95% Bootstrap t UCL	21114
95% H-UCL (Log ROS)	2.948E+36		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.255	95% H-UCL (KM -Log)	3607146
KM SD (logged)	3.887	95% Critical H Value (KM-Log)	9.598
KM Standard Error of Mean (logged)	1.31		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	19.22	Mean in Log Scale	-4.633
SD in Original Scale	63.27	SD in Log Scale	4.354
95% t UCL (Assumes normality)	53.8	95% H-Stat UCL	3.281E+8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	56.08	95% GROS Adjusted Gamma UCL	180.5
95% Adjusted Gamma KM-UCL	313.3		

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ETHYLBENZENE

General Statistics

Total Number of Observations	57	Number of Distinct Observations	47
Number of Detects	37	Number of Non-Detects	20
Number of Distinct Detects	37	Number of Distinct Non-Detects	10
Minimum Detect	0.009	Minimum Non-Detect	0.001
Maximum Detect	67	Maximum Non-Detect	0.79
Variance Detects	258.5	Percent Non-Detects	35.09%
Mean Detects	9.378	SD Detects	16.08
Median Detects	2.4	CV Detects	1.715
Skewness Detects	2.591	Kurtosis Detects	6.634
Mean of Logged Detects	0.889	SD of Logged Detects	1.992

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.607	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.283	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	6.091	Standard Error of Mean	1.818
SD	13.54	95% KM (BCA) UCL	9.197
95% KM (t) UCL	9.131	95% KM (Percentile Bootstrap) UCL	9.106
95% KM (z) UCL	9.081	95% KM Bootstrap t UCL	10.95
90% KM Chebyshev UCL	11.54	95% KM Chebyshev UCL	14.01
97.5% KM Chebyshev UCL	17.44	99% KM Chebyshev UCL	24.18

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.867	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.818	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.152	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.154	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.475	k star (bias corrected MLE)	0.454
Theta hat (MLE)	19.75	Theta star (bias corrected MLE)	20.64
nu hat (MLE)	35.13	nu star (bias corrected)	33.62
MLE Mean (bias corrected)	9.378	MLE Sd (bias corrected)	13.91

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.202	nu hat (KM)	23.08
Approximate Chi Square Value (23.08, α)	13.15	Adjusted Chi Square Value (23.08, β)	12.96
95% Gamma Approximate KM-UCL (use when n>=50)	10.69	95% Gamma Adjusted KM-UCL (use when n<50)	10.85

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.009	Mean	6.091
Maximum	67	Median	0.97
SD	13.66	CV	2.242
k hat (MLE)	0.25	k star (bias corrected MLE)	0.248
Theta hat (MLE)	24.39	Theta star (bias corrected MLE)	24.54
nu hat (MLE)	28.46	nu star (bias corrected)	28.3
MLE Mean (bias corrected)	6.091	MLE Sd (bias corrected)	12.22
		Adjusted Level of Significance (β)	0.0458
Approximate Chi Square Value (28.30, α)	17.16	Adjusted Chi Square Value (28.30, β)	16.94
95% Gamma Approximate UCL (use when n>=50)	10.04	95% Gamma Adjusted UCL (use when n<50)	10.18

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.941	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.116	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	6.103	Mean in Log Scale	-0.624
SD in Original Scale	13.65	SD in Log Scale	2.671
95% t UCL (assumes normality of ROS data)	9.127	95% Percentile Bootstrap UCL	9.197
95% BCA Bootstrap UCL	10.42	95% Bootstrap t UCL	11.05
95% H-UCL (Log ROS)	111.4		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.627	95% H-UCL (KM -Log)	10360
KM SD (logged)	3.85	95% Critical H Value (KM-Log)	6.726
KM Standard Error of Mean (logged)	0.536		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	6.107	Mean in Log Scale	-0.904
SD in Original Scale	13.65	SD in Log Scale	3.233
95% t UCL (Assumes normality)	9.131	95% H-Stat UCL	916.9

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	9.197	95% GROS Approximate Gamma UCL	10.04
95% Approximate Gamma KM-UCL	10.69		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

METHYLENE CHLORIDE

General Statistics

Total Number of Observations	55	Number of Distinct Observations	40
Number of Detects	13	Number of Non-Detects	42
Number of Distinct Detects	12	Number of Distinct Non-Detects	28
Minimum Detect	0.007	Minimum Non-Detect	0.002
Maximum Detect	51	Maximum Non-Detect	12
Variance Detects	236	Percent Non-Detects	76.36%
Mean Detects	9.094	SD Detects	15.36
Median Detects	3.1	CV Detects	1.689
Skewness Detects	2.303	Kurtosis Detects	4.677
Mean of Logged Detects	0.763	SD of Logged Detects	2.33

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.609	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.368	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.226	Standard Error of Mean	1.145
SD	8.145	95% KM (BCA) UCL	4.365
95% KM (t) UCL	4.143	95% KM (Percentile Bootstrap) UCL	4.308
95% KM (z) UCL	4.11	95% KM Bootstrap t UCL	10.18
90% KM Chebyshev UCL	5.663	95% KM Chebyshev UCL	7.219
97.5% KM Chebyshev UCL	9.379	99% KM Chebyshev UCL	13.62

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.411	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.8	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.198	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.252	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.448	k star (bias corrected MLE)	0.396
Theta hat (MLE)	20.32	Theta star (bias corrected MLE)	22.99
nu hat (MLE)	11.64	nu star (bias corrected)	10.28
MLE Mean (bias corrected)	9.094	MLE Sd (bias corrected)	14.46

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0747	nu hat (KM)	8.219
Approximate Chi Square Value (8.22, α)	2.863	Adjusted Chi Square Value (8.22, β)	2.778
95% Gamma Approximate KM-UCL (use when n>=50)	6.393	95% Gamma Adjusted KM-UCL (use when n<50)	6.587

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.007	Mean	2.157
Maximum	51	Median	0.01
SD	8.222	CV	3.812
k hat (MLE)	0.182	k star (bias corrected MLE)	0.184
Theta hat (MLE)	11.86	Theta star (bias corrected MLE)	11.72
nu hat (MLE)	20.01	nu star (bias corrected)	20.25
MLE Mean (bias corrected)	2.157	MLE Sd (bias corrected)	5.027
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (20.25, α)	11.04	Adjusted Chi Square Value (20.25, β)	10.85
95% Gamma Approximate UCL (use when n>=50)	3.958	95% Gamma Adjusted UCL (use when n<50)	4.025

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.197	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.157	Mean in Log Scale	-3.917
SD in Original Scale	8.222	SD in Log Scale	3.103
95% t UCL (assumes normality of ROS data)	4.012	95% Percentile Bootstrap UCL	4.327
95% BCA Bootstrap UCL	5.306	95% Bootstrap t UCL	10.48
95% H-UCL (Log ROS)	24.24		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.095	95% H-UCL (KM -Log)	35.77
KM SD (logged)	3.227	95% Critical H Value (KM-Log)	5.612
KM Standard Error of Mean (logged)	0.531		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2.782	Mean in Log Scale	-1.416
SD in Original Scale	8.171	SD in Log Scale	2.759
95% t UCL (Assumes normality)	4.626	95% H-Stat UCL	69.37

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	4.143	95% GROS Approximate Gamma UCL	3.958
95% Approximate Gamma KM-UCL	6.393		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

O-XYLENE

General Statistics

Total Number of Observations	55	Number of Distinct Observations	45
Number of Detects	38	Number of Non-Detects	17
Number of Distinct Detects	35	Number of Distinct Non-Detects	10
Minimum Detect	0.003	Minimum Non-Detect	0.001
Maximum Detect	110	Maximum Non-Detect	7.155
Variance Detects	451	Percent Non-Detects	30.91%
Mean Detects	12.97	SD Detects	21.24
Median Detects	3.28	CV Detects	1.638
Skewness Detects	3.027	Kurtosis Detects	11.4
Mean of Logged Detects	1.142	SD of Logged Detects	2.297

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.636	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.938	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.271	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.144	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	8.982	Standard Error of Mean	2.516
SD	18.41	95% KM (BCA) UCL	13.5
95% KM (t) UCL	13.19	95% KM (Percentile Bootstrap) UCL	13.33
95% KM (z) UCL	13.12	95% KM Bootstrap t UCL	16.19
90% KM Chebyshev UCL	16.53	95% KM Chebyshev UCL	19.95
97.5% KM Chebyshev UCL	24.69	99% KM Chebyshev UCL	34.02

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.541	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.823	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.133	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.152	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.454	k star (bias corrected MLE)	0.436
Theta hat (MLE)	28.57	Theta star (bias corrected MLE)	29.77
nu hat (MLE)	34.5	nu star (bias corrected)	33.11
MLE Mean (bias corrected)	12.97	MLE Sd (bias corrected)	19.65

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.238	nu hat (KM)	26.18
Approximate Chi Square Value (26.18, α)	15.52	Adjusted Chi Square Value (26.18, β)	15.3
95% Gamma Approximate KM-UCL (use when n>=50)	15.15	95% Gamma Adjusted KM-UCL (use when n<50)	15.37

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.003	Mean	8.963
Maximum	110	Median	1.8
SD	18.59	CV	2.074
k hat (MLE)	0.251	k star (bias corrected MLE)	0.249
Theta hat (MLE)	35.7	Theta star (bias corrected MLE)	35.93
nu hat (MLE)	27.61	nu star (bias corrected)	27.44
MLE Mean (bias corrected)	8.963	MLE Sd (bias corrected)	17.94
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (27.44, α)	16.49	Adjusted Chi Square Value (27.44, β)	16.26
95% Gamma Approximate UCL (use when n>=50)	14.91	95% Gamma Adjusted UCL (use when n<50)	15.12

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.887	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.938	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.158	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.144	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	8.976	Mean in Log Scale	-0.242
SD in Original Scale	18.58	SD in Log Scale	2.871
95% t UCL (assumes normality of ROS data)	13.17	95% Percentile Bootstrap UCL	13.41
95% BCA Bootstrap UCL	15.56	95% Bootstrap t UCL	15.61
95% H-UCL (Log ROS)	353.3		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	9.036	Mean in Log Scale	-0.471
SD in Original Scale	18.56	SD in Log Scale	3.391
95% t UCL (Assumes normality)	13.22	95% H-Stat UCL	2923

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	13.5	95% GROS Approximate Gamma UCL	14.91
95% Approximate Gamma KM-UCL	15.15		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

P-ISOPROPYLTOLUENE

General Statistics

Total Number of Observations	16	Number of Distinct Observations	16
Number of Detects	1	Number of Non-Detects	15
Number of Distinct Detects	1	Number of Distinct Non-Detects	15

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable P-ISOPROPYLTOLUENE was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TETRACHLOROETHYLENE

General Statistics

Total Number of Observations	57	Number of Distinct Observations	36
Number of Detects	8	Number of Non-Detects	49
Number of Distinct Detects	8	Number of Distinct Non-Detects	28
Minimum Detect	0.0052	Minimum Non-Detect	0.001
Maximum Detect	5.9	Maximum Non-Detect	5.8
Variance Detects	3.985	Percent Non-Detects	85.96%
Mean Detects	1.03	SD Detects	1.996
Median Detects	0.355	CV Detects	1.939
Skewness Detects	2.673	Kurtosis Detects	7.329
Mean of Logged Detects	-2.014	SD of Logged Detects	2.716

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.567	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.403	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.159	Standard Error of Mean	0.112
SD	0.788	95% KM (BCA) UCL	0.376
95% KM (t) UCL	0.347	95% KM (Percentile Bootstrap) UCL	0.352
95% KM (z) UCL	0.344	95% KM Bootstrap t UCL	0.869
90% KM Chebyshev UCL	0.496	95% KM Chebyshev UCL	0.649
97.5% KM Chebyshev UCL	0.861	99% KM Chebyshev UCL	1.277

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.467	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.792	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.227	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.316	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.332	k star (bias corrected MLE)	0.291
Theta hat (MLE)	3.102	Theta star (bias corrected MLE)	3.541
nu hat (MLE)	5.311	nu star (bias corrected)	4.653
MLE Mean (bias corrected)	1.03	MLE Sd (bias corrected)	1.909

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0408	nu hat (KM)	4.655
Approximate Chi Square Value (4.66, α)	0.996	Adjusted Chi Square Value (4.66, β)	0.955
95% Gamma Approximate KM-UCL (use when n>=50)	0.744	95% Gamma Adjusted KM-UCL (use when n<50)	0.776

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0052	Mean	0.153
Maximum	5.9	Median	0.01
SD	0.791	CV	5.167
k hat (MLE)	0.293	k star (bias corrected MLE)	0.289
Theta hat (MLE)	0.523	Theta star (bias corrected MLE)	0.53
nu hat (MLE)	33.37	nu star (bias corrected)	32.95
MLE Mean (bias corrected)	0.153	MLE Sd (bias corrected)	0.285
		Adjusted Level of Significance (β)	0.0458
Approximate Chi Square Value (32.95, α)	20.83	Adjusted Chi Square Value (32.95, β)	20.58
95% Gamma Approximate UCL (use when n>=50)	0.242	95% Gamma Adjusted UCL (use when n<50)	0.245

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.246	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.145	Mean in Log Scale	-7.391
SD in Original Scale	0.792	SD in Log Scale	2.954
95% t UCL (assumes normality of ROS data)	0.321	95% Percentile Bootstrap UCL	0.341
95% BCA Bootstrap UCL	0.494	95% Bootstrap t UCL	1.059
95% H-UCL (Log ROS)	0.404		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.686	95% H-UCL (KM -Log)	0.0925
KM SD (logged)	2.099	95% Critical H Value (KM-Log)	3.93
KM Standard Error of Mean (logged)	0.396		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.487	Mean in Log Scale	-2.596
SD in Original Scale	0.999	SD in Log Scale	2.463
95% t UCL (Assumes normality)	0.709	95% H-Stat UCL	7.071

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.347	95% GROS Approximate Gamma UCL	0.242
95% Approximate Gamma KM-UCL	0.744		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TOLUENE

General Statistics

Total Number of Observations	65	Number of Distinct Observations	53
Number of Detects	47	Number of Non-Detects	18
Number of Distinct Detects	46	Number of Distinct Non-Detects	8
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	1300	Maximum Non-Detect	0.15
Variance Detects	90804	Percent Non-Detects	27.69%
Mean Detects	150.8	SD Detects	301.3
Median Detects	15.8	CV Detects	1.998
Skewness Detects	2.573	Kurtosis Detects	6.515
Mean of Logged Detects	1.478	SD of Logged Detects	4.073

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.574	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.946	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.129	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	109.1	Standard Error of Mean	32.89
SD	262.3	95% KM (BCA) UCL	163.1
95% KM (t) UCL	164	95% KM (Percentile Bootstrap) UCL	167.3
95% KM (z) UCL	163.2	95% KM Bootstrap t UCL	186.8
90% KM Chebyshev UCL	207.7	95% KM Chebyshev UCL	252.4
97.5% KM Chebyshev UCL	314.5	99% KM Chebyshev UCL	436.3

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.552	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.908	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0796	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.143	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.207	k star (bias corrected MLE)	0.208
Theta hat (MLE)	729	Theta star (bias corrected MLE)	725.6
nu hat (MLE)	19.45	nu star (bias corrected)	19.54
MLE Mean (bias corrected)	150.8	MLE Sd (bias corrected)	330.8

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.173	nu hat (KM)	22.47
Approximate Chi Square Value (22.47, α)	12.69	Adjusted Chi Square Value (22.47, β)	12.52
95% Gamma Approximate KM-UCL (use when n>=50)	193.1	95% Gamma Adjusted KM-UCL (use when n<50)	195.7

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	109.1
Maximum	1300	Median	0.64
SD	264.4	CV	2.424
k hat (MLE)	0.156	k star (bias corrected MLE)	0.159
Theta hat (MLE)	699.1	Theta star (bias corrected MLE)	685.7
nu hat (MLE)	20.28	nu star (bias corrected)	20.68
MLE Mean (bias corrected)	109.1	MLE Sd (bias corrected)	273.5
		Adjusted Level of Significance (β)	0.0463
Approximate Chi Square Value (20.68, α)	11.35	Adjusted Chi Square Value (20.68, β)	11.2
95% Gamma Approximate UCL (use when n>=50)	198.7	95% Gamma Adjusted UCL (use when n<50)	201.4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.921	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.946	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.134	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.129	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	109.1	Mean in Log Scale	-0.65
SD in Original Scale	264.4	SD in Log Scale	5.027
95% t UCL (assumes normality of ROS data)	163.8	95% Percentile Bootstrap UCL	165.1
95% BCA Bootstrap UCL	178.7	95% Bootstrap t UCL	189
95% H-UCL (Log ROS)	11395746		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	109.1	Mean in Log Scale	-0.158
SD in Original Scale	264.4	SD in Log Scale	4.522
95% t UCL (Assumes normality)	163.8	95% H-Stat UCL	724035

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	252.4	95% GROS Approximate Gamma UCL	198.7
95% Approximate Gamma KM-UCL	193.1		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRICHLOROETHYLENE

General Statistics

Total Number of Observations	55	Number of Distinct Observations	36
Number of Detects	11	Number of Non-Detects	44
Number of Distinct Detects	10	Number of Distinct Non-Detects	26
Minimum Detect	0.02	Minimum Non-Detect	0.001
Maximum Detect	15	Maximum Non-Detect	7.691
Variance Detects	26.88	Percent Non-Detects	80%
Mean Detects	4.614	SD Detects	5.184
Median Detects	3.4	CV Detects	1.124
Skewness Detects	0.901	Kurtosis Detects	-0.311
Mean of Logged Detects	0.244	SD of Logged Detects	2.188

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.845	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.952	Standard Error of Mean	0.41
SD	2.883	95% KM (BCA) UCL	1.729
95% KM (t) UCL	1.638	95% KM (Percentile Bootstrap) UCL	1.637
95% KM (z) UCL	1.626	95% KM Bootstrap t UCL	2.005
90% KM Chebyshev UCL	2.181	95% KM Chebyshev UCL	2.738
97.5% KM Chebyshev UCL	3.511	99% KM Chebyshev UCL	5.029

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.47	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.782	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.188	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.269	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.495	k star (bias corrected MLE)	0.421
Theta hat (MLE)	9.318	Theta star (bias corrected MLE)	10.97
nu hat (MLE)	10.89	nu star (bias corrected)	9.255
MLE Mean (bias corrected)	4.614	MLE Sd (bias corrected)	7.113

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.109	nu hat (KM)	11.99
Approximate Chi Square Value (11.99, α)	5.22	Adjusted Chi Square Value (11.99, β)	5.1
95% Gamma Approximate KM-UCL (use when n>=50)	2.186	95% Gamma Adjusted KM-UCL (use when n<50)	2.238

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.931
Maximum	15	Median	0.01
SD	2.904	CV	3.12
k hat (MLE)	0.206	k star (bias corrected MLE)	0.207
Theta hat (MLE)	4.526	Theta star (bias corrected MLE)	4.506
nu hat (MLE)	22.62	nu star (bias corrected)	22.72
MLE Mean (bias corrected)	0.931	MLE Sd (bias corrected)	2.048
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (22.72, α)	12.88	Adjusted Chi Square Value (22.72, β)	12.68
95% Gamma Approximate UCL (use when n>=50)	1.642	95% Gamma Adjusted UCL (use when n<50)	1.668

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.218	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.926	Mean in Log Scale	-5.06
SD in Original Scale	2.905	SD in Log Scale	3.195
95% t UCL (assumes normality of ROS data)	1.582	95% Percentile Bootstrap UCL	1.617
95% BCA Bootstrap UCL	1.808	95% Bootstrap t UCL	2.12
95% H-UCL (Log ROS)	11.71		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.019	95% H-UCL (KM -Log)	7.739
KM SD (logged)	3.094	95% Critical H Value (KM-Log)	5.413
KM Standard Error of Mean (logged)	0.535		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1.346	Mean in Log Scale	-2.067
SD in Original Scale	2.916	SD in Log Scale	2.762
95% t UCL (Assumes normality)	2.004	95% H-Stat UCL	36.66

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.638	95% KM (Percentile Bootstrap) UCL	1.637

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

XYLENES,TOTAL

General Statistics

Total Number of Observations	49	Number of Distinct Observations	46
Number of Detects	40	Number of Non-Detects	9
Number of Distinct Detects	39	Number of Distinct Non-Detects	8
Minimum Detect	0.0062	Minimum Non-Detect	0.12
Maximum Detect	320	Maximum Non-Detect	0.163
Variance Detects	4591	Percent Non-Detects	18.37%
Mean Detects	41.06	SD Detects	67.76
Median Detects	8.893	CV Detects	1.65
Skewness Detects	2.599	Kurtosis Detects	7.577
Mean of Logged Detects	1.919	SD of Logged Detects	2.684

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.652	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.94	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.272	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.14	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	33.52	Standard Error of Mean	9.042
SD	62.5	95% KM (BCA) UCL	48.9
95% KM (t) UCL	48.69	95% KM (Percentile Bootstrap) UCL	49.44
95% KM (z) UCL	48.4	95% KM Bootstrap t UCL	56.68
90% KM Chebyshev UCL	60.65	95% KM Chebyshev UCL	72.94
97.5% KM Chebyshev UCL	89.99	99% KM Chebyshev UCL	123.5

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.266	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.842	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.102	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.15	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.371	k star (bias corrected MLE)	0.36
Theta hat (MLE)	110.7	Theta star (bias corrected MLE)	114.1
nu hat (MLE)	29.67	nu star (bias corrected)	28.78
MLE Mean (bias corrected)	41.06	MLE Sd (bias corrected)	68.46

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.288	nu hat (KM)	28.2
Approximate Chi Square Value (28.20, α)	17.08	Adjusted Chi Square Value (28.20, β)	16.82
95% Gamma Approximate KM-UCL (use when n>=50)	55.34	95% Gamma Adjusted KM-UCL (use when n<50)	56.21

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0062	Mean	33.52
Maximum	320	Median	5.6
SD	63.15	CV	1.884
k hat (MLE)	0.254	k star (bias corrected MLE)	0.252
Theta hat (MLE)	132.1	Theta star (bias corrected MLE)	133.1
nu hat (MLE)	24.87	nu star (bias corrected)	24.68
MLE Mean (bias corrected)	33.52	MLE Sd (bias corrected)	66.79
		Adjusted Level of Significance (β)	0.0451
Approximate Chi Square Value (24.68, α)	14.37	Adjusted Chi Square Value (24.68, β)	14.13
95% Gamma Approximate UCL (use when n>=50)	57.58	95% Gamma Adjusted UCL (use when n<50)	58.55

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.913	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.94	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.148	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.14	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	33.54	Mean in Log Scale	1.12
SD in Original Scale	63.14	SD in Log Scale	2.961
95% t UCL (assumes normality of ROS data)	48.66	95% Percentile Bootstrap UCL	49.2
95% BCA Bootstrap UCL	52.04	95% Bootstrap t UCL	54.74
95% H-UCL (Log ROS)	2088		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	33.53	Mean in Log Scale	1.085
SD in Original Scale	63.14	SD in Log Scale	3.001
95% t UCL (Assumes normality)	48.66	95% H-Stat UCL	2402

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	72.94	95% GROS Adjusted Gamma UCL	58.55
95% Adjusted Gamma KM-UCL	56.21		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)ANTHRACENE

General Statistics

Total Number of Observations	12	Number of Distinct Observations	9
Number of Detects	3	Number of Non-Detects	9
Number of Distinct Detects	3	Number of Distinct Non-Detects	6
Minimum Detect	0.043	Minimum Non-Detect	0.019
Maximum Detect	0.29	Maximum Non-Detect	0.12
Variance Detects	0.0194	Percent Non-Detects	75%
Mean Detects	0.129	SD Detects	0.139
Median Detects	0.055	CV Detects	1.077
Skewness Detects	1.718	Kurtosis Detects	N/A
Mean of Logged Detects	-2.428	SD of Logged Detects	1.038

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.786	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.37	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0471	Standard Error of Mean	0.0263
SD	0.0742	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0942	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0903	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.126	95% KM Chebyshev UCL	0.162
97.5% KM Chebyshev UCL	0.211	99% KM Chebyshev UCL	0.308

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.45	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0892	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	8.699	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.403	nu hat (KM)	9.668
		Adjusted Level of Significance (β)	0.029
Approximate Chi Square Value (9.67, α)	3.735	Adjusted Chi Square Value (9.67, β)	3.193
95% Gamma Approximate KM-UCL (use when n>=50)	0.122	95% Gamma Adjusted KM-UCL (use when n<50)	0.143

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.845	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.342	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0352	Mean in Log Scale	-4.943
SD in Original Scale	0.0822	SD in Log Scale	1.704
95% t UCL (assumes normality of ROS data)	0.0778	95% Percentile Bootstrap UCL	0.0792
95% BCA Bootstrap UCL	0.104	95% Bootstrap t UCL	0.235
95% H-UCL (Log ROS)	0.282		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.564	95% H-UCL (KM -Log)	0.0711
KM SD (logged)	0.79	95% Critical H Value (KM-Log)	2.554
KM Standard Error of Mean (logged)	0.282		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0493	Mean in Log Scale	-3.538
SD in Original Scale	0.0775	SD in Log Scale	0.898
95% t UCL (Assumes normality)	0.0895	95% H-Stat UCL	0.0912

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0942	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	11	Number of Distinct Observations	8
Number of Detects	4	Number of Non-Detects	7
Number of Distinct Detects	4	Number of Distinct Non-Detects	4
Minimum Detect	0.048	Minimum Non-Detect	0.019
Maximum Detect	0.25	Maximum Non-Detect	0.12
Variance Detects	0.00792	Percent Non-Detects	63.64%
Mean Detects	0.122	SD Detects	0.089
Median Detects	0.095	CV Detects	0.73
Skewness Detects	1.528	Kurtosis Detects	2.514
Mean of Logged Detects	-2.289	SD of Logged Detects	0.692

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.871	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.304	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0583	Standard Error of Mean	0.0239
SD	0.0679	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.102	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0976	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.13	95% KM Chebyshev UCL	0.162
97.5% KM Chebyshev UCL	0.207	99% KM Chebyshev UCL	0.296

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.278	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.66	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.239	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.397	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.855	k star (bias corrected MLE)	0.88
Theta hat (MLE)	0.0427	Theta star (bias corrected MLE)	0.139
nu hat (MLE)	22.84	nu star (bias corrected)	7.044
MLE Mean (bias corrected)	0.122	MLE Sd (bias corrected)	0.13

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.738	nu hat (KM)	16.23
Approximate Chi Square Value (16.23, α)	8.123	Adjusted Chi Square Value (16.23, β)	7.207
95% Gamma Approximate KM-UCL (use when n>=50)	0.116	95% Gamma Adjusted KM-UCL (use when n<50)	0.131

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0507
Maximum	0.25	Median	0.01
SD	0.0746	CV	1.471
k hat (MLE)	0.764	k star (bias corrected MLE)	0.616
Theta hat (MLE)	0.0664	Theta star (bias corrected MLE)	0.0823
nu hat (MLE)	16.81	nu star (bias corrected)	13.56
MLE Mean (bias corrected)	0.0507	MLE Sd (bias corrected)	0.0646
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (13.56, α)	6.269	Adjusted Chi Square Value (13.56, β)	5.482
95% Gamma Approximate UCL (use when n>=50)	0.11	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.982	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.203	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0553	Mean in Log Scale	-3.477
SD in Original Scale	0.0721	SD in Log Scale	1.085
95% t UCL (assumes normality of ROS data)	0.0947	95% Percentile Bootstrap UCL	0.0932
95% BCA Bootstrap UCL	0.111	95% Bootstrap t UCL	0.155
95% H-UCL (Log ROS)	0.165		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.313	95% H-UCL (KM -Log)	0.118
KM SD (logged)	0.887	95% Critical H Value (KM-Log)	2.787
KM Standard Error of Mean (logged)	0.318		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0592	Mean in Log Scale	-3.318
SD in Original Scale	0.0708	SD in Log Scale	0.994
95% t UCL (Assumes normality)	0.0979	95% H-Stat UCL	0.152

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.102	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	11	Number of Distinct Observations	8
Number of Detects	5	Number of Non-Detects	6
Number of Distinct Detects	5	Number of Distinct Non-Detects	4
Minimum Detect	0.044	Minimum Non-Detect	0.019
Maximum Detect	0.34	Maximum Non-Detect	0.12
Variance Detects	0.0139	Percent Non-Detects	54.55%
Mean Detects	0.135	SD Detects	0.118
Median Detects	0.09	CV Detects	0.874
Skewness Detects	1.942	Kurtosis Detects	4.003
Mean of Logged Detects	-2.251	SD of Logged Detects	0.75

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.766	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.35	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0734	Standard Error of Mean	0.0308
SD	0.0911	95% KM (BCA) UCL	0.136
95% KM (t) UCL	0.129	95% KM (Percentile Bootstrap) UCL	0.129
95% KM (z) UCL	0.124	95% KM Bootstrap t UCL	0.156
90% KM Chebyshev UCL	0.166	95% KM Chebyshev UCL	0.208
97.5% KM Chebyshev UCL	0.266	99% KM Chebyshev UCL	0.38

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.419	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.684	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.275	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.36	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.174	k star (bias corrected MLE)	1.003
Theta hat (MLE)	0.062	Theta star (bias corrected MLE)	0.134
nu hat (MLE)	21.74	nu star (bias corrected)	10.03
MLE Mean (bias corrected)	0.135	MLE Sd (bias corrected)	0.135

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.65	nu hat (KM)	14.3
Approximate Chi Square Value (14.30, α)	6.777	Adjusted Chi Square Value (14.30, β)	5.953
95% Gamma Approximate KM-UCL (use when n>=50)	0.155	95% Gamma Adjusted KM-UCL (use when n<50)	0.176

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0667
Maximum	0.34	Median	0.01
SD	0.099	CV	1.484
k hat (MLE)	0.726	k star (bias corrected MLE)	0.589
Theta hat (MLE)	0.0919	Theta star (bias corrected MLE)	0.113
nu hat (MLE)	15.97	nu star (bias corrected)	12.95
MLE Mean (bias corrected)	0.0667	MLE Sd (bias corrected)	0.087
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (12.95, α)	5.86	Adjusted Chi Square Value (12.95, β)	5.103
95% Gamma Approximate UCL (use when n>=50)	0.147	95% Gamma Adjusted UCL (use when n<50)	0.169

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.231	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0711	Mean in Log Scale	-3.253
SD in Original Scale	0.0965	SD in Log Scale	1.111
95% t UCL (assumes normality of ROS data)	0.124	95% Percentile Bootstrap UCL	0.122
95% BCA Bootstrap UCL	0.143	95% Bootstrap t UCL	0.199
95% H-UCL (Log ROS)	0.222		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.142	95% H-UCL (KM -Log)	0.166
KM SD (logged)	0.96	95% Critical H Value (KM-Log)	2.921
KM Standard Error of Mean (logged)	0.331		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0745	Mean in Log Scale	-3.146
SD in Original Scale	0.0952	SD in Log Scale	1.066
95% t UCL (Assumes normality)	0.126	95% H-Stat UCL	0.218

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.129	95% KM (Percentile Bootstrap) UCL	0.129

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	11	Number of Distinct Observations	9
Number of Detects	5	Number of Non-Detects	6
Number of Distinct Detects	5	Number of Distinct Non-Detects	4
Minimum Detect	0.074	Minimum Non-Detect	0.037
Maximum Detect	500	Maximum Non-Detect	0.093
Variance Detects	49722	Percent Non-Detects	54.55%
Mean Detects	101.1	SD Detects	223
Median Detects	1.8	CV Detects	2.205
Skewness Detects	2.236	Kurtosis Detects	5
Mean of Logged Detects	1.079	SD of Logged Detects	3.19

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.556	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.471	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	45.98	Standard Error of Mean	48.4
SD	143.6	95% KM (BCA) UCL	136.7
95% KM (t) UCL	133.7	95% KM (Percentile Bootstrap) UCL	136.8
95% KM (z) UCL	125.6	95% KM Bootstrap t UCL	8599
90% KM Chebyshev UCL	191.2	95% KM Chebyshev UCL	257
97.5% KM Chebyshev UCL	348.2	99% KM Chebyshev UCL	527.5

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.809	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.773	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.444	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.388	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.207	k star (bias corrected MLE)	0.216
Theta hat (MLE)	488.7	Theta star (bias corrected MLE)	467.9
nu hat (MLE)	2.069	nu star (bias corrected)	2.161
MLE Mean (bias corrected)	101.1	MLE Sd (bias corrected)	217.5

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.103	nu hat (KM)	2.257
Approximate Chi Square Value (2.26, α)	0.191	Adjusted Chi Square Value (2.26, β)	0.14
95% Gamma Approximate KM-UCL (use when n>=50)	542.6	95% Gamma Adjusted KM-UCL (use when n<50)	743.9

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	45.97
Maximum	500	Median	0.01
SD	150.6	CV	3.276
k hat (MLE)	0.134	k star (bias corrected MLE)	0.158
Theta hat (MLE)	344.1	Theta star (bias corrected MLE)	291.4
nu hat (MLE)	2.939	nu star (bias corrected)	3.471
MLE Mean (bias corrected)	45.97	MLE Sd (bias corrected)	115.7
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (3.47, α)	0.525	Adjusted Chi Square Value (3.47, β)	0.375
95% Gamma Approximate UCL (use when n>=50)	304.2	95% Gamma Adjusted UCL (use when n<50)	425.3

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.87	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.336	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	45.96	Mean in Log Scale	-3.494
SD in Original Scale	150.6	SD in Log Scale	4.984
95% t UCL (assumes normality of ROS data)	128.3	95% Percentile Bootstrap UCL	136.7
95% BCA Bootstrap UCL	182	95% Bootstrap t UCL	10391
95% H-UCL (Log ROS)	1.762E+12		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.261	95% H-UCL (KM -Log)	12620
KM SD (logged)	2.879	95% Critical H Value (KM-Log)	7.203
KM Standard Error of Mean (logged)	0.973		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	45.98	Mean in Log Scale	-1.438
SD in Original Scale	150.6	SD in Log Scale	3.162
95% t UCL (Assumes normality)	128.3	95% H-Stat UCL	92351

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL 527.5

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NAPHTHALENE

General Statistics

Total Number of Observations	11	Number of Distinct Observations	8
Number of Detects	4	Number of Non-Detects	7
Number of Distinct Detects	4	Number of Distinct Non-Detects	4
Minimum Detect	0.091	Minimum Non-Detect	0.018
Maximum Detect	2.3	Maximum Non-Detect	0.04
Variance Detects	1.179	Percent Non-Detects	63.64%
Mean Detects	0.673	SD Detects	1.086
Median Detects	0.15	CV Detects	1.614
Skewness Detects	1.988	Kurtosis Detects	3.957
Mean of Logged Detects	-1.369	SD of Logged Detects	1.509

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.666	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.418	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.256	Standard Error of Mean	0.226
SD	0.649	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.665	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.628	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.934	95% KM Chebyshev UCL	1.241
97.5% KM Chebyshev UCL	1.667	99% KM Chebyshev UCL	2.503

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.669	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.675	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.389	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.408	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.631	k star (bias corrected MLE)	0.324
Theta hat (MLE)	1.067	Theta star (bias corrected MLE)	2.074
nu hat (MLE)	5.045	nu star (bias corrected)	2.595
MLE Mean (bias corrected)	0.673	MLE Sd (bias corrected)	1.181

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.156	nu hat (KM)	3.428
Approximate Chi Square Value (3.43, α)	0.51	Adjusted Chi Square Value (3.43, β)	0.364
95% Gamma Approximate KM-UCL (use when n>=50)	1.722	95% Gamma Adjusted KM-UCL (use when n<50)	2.413

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.251
Maximum	2.3	Median	0.01
SD	0.682	CV	2.719

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

k hat (MLE)	0.332	k star (bias corrected MLE)	0.302
Theta hat (MLE)	0.757	Theta star (bias corrected MLE)	0.832
nu hat (MLE)	7.294	nu star (bias corrected)	6.638
MLE Mean (bias corrected)	0.251	MLE Sd (bias corrected)	0.457
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (6.64, α)	1.974	Adjusted Chi Square Value (6.64, β)	1.588
95% Gamma Approximate UCL (use when n>=50)	0.844	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.798	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.246	Mean in Log Scale	-4.741
SD in Original Scale	0.684	SD in Log Scale	2.944
95% t UCL (assumes normality of ROS data)	0.62	95% Percentile Bootstrap UCL	0.653
95% BCA Bootstrap UCL	0.864	95% Bootstrap t UCL	4.333
95% H-UCL (Log ROS)	627.1		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.054	95% H-UCL (KM -Log)	0.977
KM SD (logged)	1.498	95% Critical H Value (KM-Log)	4.029
KM Standard Error of Mean (logged)	0.522		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.254	Mean in Log Scale	-3.221
SD in Original Scale	0.681	SD in Log Scale	1.712
95% t UCL (Assumes normality)	0.626	95% H-Stat UCL	1.974

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.665	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	1690	Mean	5019
Maximum	8580	Median	5100
SD	2521	Std. Error of Mean	891.5
Coefficient of Variation	0.502	Skewness	-0.0288

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test

Shapiro Wilk Test Statistic	0.953	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.134	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6708	95% Adjusted-CLT UCL (Chen-1995)	6475
		95% Modified-t UCL (Johnson-1978)	6706

Gamma GOF Test

A-D Test Statistic	0.301	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.719	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.175	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.296	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.734	k star (bias corrected MLE)	2.417
Theta hat (MLE)	1344	Theta star (bias corrected MLE)	2077
nu hat (MLE)	59.74	nu star (bias corrected)	38.67
MLE Mean (bias corrected)	5019	MLE Sd (bias corrected)	3228
		Approximate Chi Square Value (0.05)	25.43
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	22.75

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	7633	95% Adjusted Gamma UCL (use when n<50)	8532

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.91	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.18	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.313	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	7.432	Mean of logged Data	8.381
Maximum of Logged Data	9.057	SD of logged Data	0.603

Assuming Lognormal Distribution

95% H-UCL	9337	90% Chebyshev (MVUE) UCL	8409
95% Chebyshev (MVUE) UCL	9907	97.5% Chebyshev (MVUE) UCL	11986
99% Chebyshev (MVUE) UCL	16070		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	6485	95% Jackknife UCL	6708
95% Standard Bootstrap UCL	6406	95% Bootstrap-t UCL	6560
95% Hall's Bootstrap UCL	6327	95% Percentile Bootstrap UCL	6346
95% BCA Bootstrap UCL	6404		
90% Chebyshev(Mean, Sd) UCL	7693	95% Chebyshev(Mean, Sd) UCL	8905
97.5% Chebyshev(Mean, Sd) UCL	10586	99% Chebyshev(Mean, Sd) UCL	13889

Suggested UCL to Use

95% Student's-t UCL 6708

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ANTIMONY

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Number of Detects	3	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	6
Minimum Detect	1.01	Minimum Non-Detect	0.706
Maximum Detect	1.41	Maximum Non-Detect	0.812
Variance Detects	0.052	Percent Non-Detects	66.67%
Mean Detects	1.273	SD Detects	0.228
Median Detects	1.4	CV Detects	0.179
Skewness Detects	-1.728	Kurtosis Detects	N/A
Mean of Logged Detects	0.23	SD of Logged Detects	0.191

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.769	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.377	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.895	Standard Error of Mean	0.118
SD	0.288	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1.114	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1.089	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.248	95% KM Chebyshev UCL	1.408
97.5% KM Chebyshev UCL	1.63	99% KM Chebyshev UCL	2.066

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	43.14	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0295	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	258.9	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	9.643	nu hat (KM)	173.6
		Adjusted Level of Significance (β)	0.0231
Approximate Chi Square Value (173.57, α)	144.1	Adjusted Chi Square Value (173.57, β)	138.4
95% Gamma Approximate KM-UCL (use when n>=50)	1.078	95% Gamma Adjusted KM-UCL (use when n<50)	1.122

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.766	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.378	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.87	Mean in Log Scale	-0.193
SD in Original Scale	0.324	SD in Log Scale	0.331
95% t UCL (assumes normality of ROS data)	1.07	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A	95% Bootstrap t UCL	N/A
95% H-UCL (Log ROS)	1.107		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-0.155	95% H-UCL (KM -Log)	1.092
KM SD (logged)	0.287	95% Critical H Value (KM-Log)	1.997
KM Standard Error of Mean (logged)	0.117		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.672	Mean in Log Scale	-0.584
SD in Original Scale	0.465	SD in Log Scale	0.62
95% t UCL (Assumes normality)	0.961	95% H-Stat UCL	1.162

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.114	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	0.68	Mean	3.297
Maximum	7.82	Median	2.25
SD	2.319	Std. Error of Mean	0.699
Coefficient of Variation	0.703	Skewness	0.744

Normal GOF Test

Shapiro Wilk Test Statistic	0.901	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.22	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4.564	95% Adjusted-CLT UCL (Chen-1995)	4.615
		95% Modified-t UCL (Johnson-1978)	4.59

Gamma GOF Test

A-D Test Statistic	0.317	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.738	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.171	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.258	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.124	k star (bias corrected MLE)	1.606
Theta hat (MLE)	1.552	Theta star (bias corrected MLE)	2.054
nu hat (MLE)	46.73	nu star (bias corrected)	35.32
MLE Mean (bias corrected)	3.297	MLE Sd (bias corrected)	2.602
		Approximate Chi Square Value (0.05)	22.72
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	21.09

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	5.125	95% Adjusted Gamma UCL (use when n<50)	5.523

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.955	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.167	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-0.386	Mean of logged Data	0.94
Maximum of Logged Data	2.057	SD of logged Data	0.78

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Lognormal Distribution

95% H-UCL	6.583	90% Chebyshev (MVUE) UCL	5.822
95% Chebyshev (MVUE) UCL	6.941	97.5% Chebyshev (MVUE) UCL	8.493
99% Chebyshev (MVUE) UCL	11.54		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	4.447	95% Jackknife UCL	4.564
95% Standard Bootstrap UCL	4.356	95% Bootstrap-t UCL	4.765
95% Hall's Bootstrap UCL	4.531	95% Percentile Bootstrap UCL	4.459
95% BCA Bootstrap UCL	4.538		
90% Chebyshev(Mean, Sd) UCL	5.395	95% Chebyshev(Mean, Sd) UCL	6.345
97.5% Chebyshev(Mean, Sd) UCL	7.663	99% Chebyshev(Mean, Sd) UCL	10.25

Suggested UCL to Use

95% Student's-t UCL 4.564

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	0.254	Mean	1.847
Maximum	4.4	Median	1.765
SD	1.417	Std. Error of Mean	0.501
Coefficient of Variation	0.767	Skewness	0.647

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test

Shapiro Wilk Test Statistic	0.944	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.13	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	2.796	95% Adjusted-CLT UCL (Chen-1995)	2.794
		95% Modified-t UCL (Johnson-1978)	2.815

Gamma GOF Test

A-D Test Statistic	0.298	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.729	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.176	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.299	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.453	k star (bias corrected MLE)	0.992
Theta hat (MLE)	1.271	Theta star (bias corrected MLE)	1.862
nu hat (MLE)	23.26	nu star (bias corrected)	15.87
MLE Mean (bias corrected)	1.847	MLE Sd (bias corrected)	1.855
		Approximate Chi Square Value (0.05)	7.869
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	6.497

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	3.724	95% Adjusted Gamma UCL (use when n<50)	4.511

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.89	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.183	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.313	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-1.37	Mean of logged Data	0.232
Maximum of Logged Data	1.482	SD of logged Data	1.063

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Lognormal Distribution

95% H-UCL	9.356	90% Chebyshev (MVUE) UCL	4.339
95% Chebyshev (MVUE) UCL	5.391	97.5% Chebyshev (MVUE) UCL	6.851
99% Chebyshev (MVUE) UCL	9.719		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	2.671	95% Jackknife UCL	2.796
95% Standard Bootstrap UCL	2.635	95% Bootstrap-t UCL	2.922
95% Hall's Bootstrap UCL	3.031	95% Percentile Bootstrap UCL	2.654
95% BCA Bootstrap UCL	2.711		
90% Chebyshev(Mean, Sd) UCL	3.35	95% Chebyshev(Mean, Sd) UCL	4.031
97.5% Chebyshev(Mean, Sd) UCL	4.975	99% Chebyshev(Mean, Sd) UCL	6.831

Suggested UCL to Use

95% Student's-t UCL 2.796

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	3.98	Mean	57.77
Maximum	122	Median	60.4
SD	36.09	Std. Error of Mean	10.88
Coefficient of Variation	0.625	Skewness	-0.0219

Normal GOF Test

Shapiro Wilk Test Statistic	0.962	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.139	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	77.49	95% Adjusted-CLT UCL (Chen-1995)	75.59
		95% Modified-t UCL (Johnson-1978)	77.48

Gamma GOF Test

A-D Test Statistic	0.831	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.744	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.249	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.26	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.425	k star (bias corrected MLE)	1.097
Theta hat (MLE)	40.54	Theta star (bias corrected MLE)	52.66
nu hat (MLE)	31.35	nu star (bias corrected)	24.13
MLE Mean (bias corrected)	57.77	MLE Sd (bias corrected)	55.16
		Approximate Chi Square Value (0.05)	13.95
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	12.7

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	99.94	95% Adjusted Gamma UCL (use when n<50)	109.7

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.756	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.284	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.381	Mean of logged Data	3.666
Maximum of Logged Data	4.804	SD of logged Data	1.186

Assuming Lognormal Distribution

95% H-UCL	279.3	90% Chebyshev (MVUE) UCL	154.4
95% Chebyshev (MVUE) UCL	191.8	97.5% Chebyshev (MVUE) UCL	243.7
99% Chebyshev (MVUE) UCL	345.6		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	75.67	95% Jackknife UCL	77.49
95% Standard Bootstrap UCL	74.43	95% Bootstrap-t UCL	76.28
95% Hall's Bootstrap UCL	76.31	95% Percentile Bootstrap UCL	75.19
95% BCA Bootstrap UCL	73.46		
90% Chebyshev(Mean, Sd) UCL	90.41	95% Chebyshev(Mean, Sd) UCL	105.2
97.5% Chebyshev(Mean, Sd) UCL	125.7	99% Chebyshev(Mean, Sd) UCL	166

Suggested UCL to Use

95% Student's-t UCL	77.49

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MERCURY

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
Number of Detects	6	Number of Non-Detects	3
Number of Distinct Detects	6	Number of Distinct Non-Detects	3
Minimum Detect	0.0396	Minimum Non-Detect	0.0072
Maximum Detect	1.2	Maximum Non-Detect	0.0078
Variance Detects	0.238	Percent Non-Detects	33.33%
Mean Detects	0.447	SD Detects	0.488
Median Detects	0.234	CV Detects	1.091
Skewness Detects	0.96	Kurtosis Detects	-1.038
Mean of Logged Detects	-1.474	SD of Logged Detects	1.369

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.833	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.264	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.3	Standard Error of Mean	0.153
SD	0.418	95% KM (BCA) UCL	0.548
95% KM (t) UCL	0.584	95% KM (Percentile Bootstrap) UCL	0.55
95% KM (z) UCL	0.552	95% KM Bootstrap t UCL	0.971
90% KM Chebyshev UCL	0.759	95% KM Chebyshev UCL	0.966
97.5% KM Chebyshev UCL	1.254	99% KM Chebyshev UCL	1.82

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.311	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.718	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.202	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.342	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.876	k star (bias corrected MLE)	0.549
Theta hat (MLE)	0.51	Theta star (bias corrected MLE)	0.814
nu hat (MLE)	10.52	nu star (bias corrected)	6.592
MLE Mean (bias corrected)	0.447	MLE Sd (bias corrected)	0.603

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.516	nu hat (KM)	9.28
Approximate Chi Square Value (9.28, α)	3.497	Adjusted Chi Square Value (9.28, β)	2.79
95% Gamma Approximate KM-UCL (use when n>=50)	0.797	95% Gamma Adjusted KM-UCL (use when n<50)	0.999

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.301
Maximum	1.2	Median	0.0733
SD	0.443	CV	1.47
k hat (MLE)	0.484	k star (bias corrected MLE)	0.397
Theta hat (MLE)	0.622	Theta star (bias corrected MLE)	0.759
nu hat (MLE)	8.715	nu star (bias corrected)	7.143
MLE Mean (bias corrected)	0.301	MLE Sd (bias corrected)	0.478
		Adjusted Level of Significance (β)	0.0231
Approximate Chi Square Value (7.14, α)	2.25	Adjusted Chi Square Value (7.14, β)	1.716
95% Gamma Approximate UCL (use when n>=50)	0.957	95% Gamma Adjusted UCL (use when n<50)	1.254

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.943	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.175	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.3	Mean in Log Scale	-2.667
SD in Original Scale	0.444	SD in Log Scale	2.09
95% t UCL (assumes normality of ROS data)	0.575	95% Percentile Bootstrap UCL	0.549
95% BCA Bootstrap UCL	0.64	95% Bootstrap t UCL	1.207
95% H-UCL (Log ROS)	49.95		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.628	95% H-UCL (KM -Log)	19.49
KM SD (logged)	1.924	95% Critical H Value (KM-Log)	5.51
KM Standard Error of Mean (logged)	0.702		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.299	Mean in Log Scale	-2.847
SD in Original Scale	0.445	SD in Log Scale	2.326
95% t UCL (Assumes normality)	0.575	95% H-Stat UCL	190.8

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.584	95% KM (Percentile Bootstrap) UCL	0.55

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

THALLIUM

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
Number of Detects	6	Number of Non-Detects	2
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	0.461	Minimum Non-Detect	0.385
Maximum Detect	1.32	Maximum Non-Detect	0.396
Variance Detects	0.109	Percent Non-Detects	25%
Mean Detects	1.016	SD Detects	0.33
Median Detects	1.115	CV Detects	0.325
Skewness Detects	-1.091	Kurtosis Detects	0.325
Mean of Logged Detects	-0.0427	SD of Logged Detects	0.402

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.881	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.279	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.858	Standard Error of Mean	0.146
SD	0.378	95% KM (BCA) UCL	1.082
95% KM (t) UCL	1.135	95% KM (Percentile Bootstrap) UCL	1.083
95% KM (z) UCL	1.099	95% KM Bootstrap t UCL	1.08
90% KM Chebyshev UCL	1.297	95% KM Chebyshev UCL	1.496
97.5% KM Chebyshev UCL	1.772	99% KM Chebyshev UCL	2.314

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.535	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.698	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.314	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.333	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.745	k star (bias corrected MLE)	4.483
Theta hat (MLE)	0.116	Theta star (bias corrected MLE)	0.227
nu hat (MLE)	104.9	nu star (bias corrected)	53.8
MLE Mean (bias corrected)	1.016	MLE Sd (bias corrected)	0.48

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	5.159	nu hat (KM)	82.55
Approximate Chi Square Value (82.55, α)	62.61	Adjusted Chi Square Value (82.55, β)	58.23
95% Gamma Approximate KM-UCL (use when n>=50)	1.131	95% Gamma Adjusted KM-UCL (use when n<50)	1.216

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.376	Mean	0.856
Maximum	1.32	Median	0.952
SD	0.407	CV	0.476
k hat (MLE)	4.293	k star (bias corrected MLE)	2.767
Theta hat (MLE)	0.199	Theta star (bias corrected MLE)	0.309
nu hat (MLE)	68.69	nu star (bias corrected)	44.27
MLE Mean (bias corrected)	0.856	MLE Sd (bias corrected)	0.514
		Adjusted Level of Significance (β)	0.0195
Approximate Chi Square Value (44.27, α)	30.01	Adjusted Chi Square Value (44.27, β)	27.07
95% Gamma Approximate UCL (use when n>=50)	1.262	95% Gamma Adjusted UCL (use when n<50)	1.399

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.82	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.309	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.86	Mean in Log Scale	-0.265
SD in Original Scale	0.401	SD in Log Scale	0.534
95% t UCL (assumes normality of ROS data)	1.129	95% Percentile Bootstrap UCL	1.08
95% BCA Bootstrap UCL	1.08	95% Bootstrap t UCL	1.125
95% H-UCL (Log ROS)	1.44		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-0.271	95% H-UCL (KM -Log)	1.365
KM SD (logged)	0.507	95% Critical H Value (KM-Log)	2.366
KM Standard Error of Mean (logged)	0.196		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.811	Mean in Log Scale	-0.44
SD in Original Scale	0.471	SD in Log Scale	0.811
95% t UCL (Assumes normality)	1.126	95% H-Stat UCL	2.228

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.135	95% KM (Percentile Bootstrap) UCL	1.083

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	8	Number of Distinct Observations	8
		Number of Missing Observations	0
Minimum	8.65	Mean	28.58
Maximum	51.8	Median	28.1
SD	17.42	Std. Error of Mean	6.158
Coefficient of Variation	0.609	Skewness	0.161

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test

Shapiro Wilk Test Statistic	0.895	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.21	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	40.25	95% Adjusted-CLT UCL (Chen-1995)	39.08
		95% Modified-t UCL (Johnson-1978)	40.31

Gamma GOF Test

A-D Test Statistic	0.445	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.722	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.228	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.622	k star (bias corrected MLE)	1.722
Theta hat (MLE)	10.9	Theta star (bias corrected MLE)	16.6
nu hat (MLE)	41.95	nu star (bias corrected)	27.55
MLE Mean (bias corrected)	28.58	MLE Sd (bias corrected)	21.78
		Approximate Chi Square Value (0.05)	16.58
Adjusted Level of Significance	0.0195	Adjusted Chi Square Value	14.47

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	47.5	95% Adjusted Gamma UCL (use when n<50)	54.42

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.883	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.818	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.21	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.313	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output - Area 1 Surface Soil (0-2ft)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 2:50:07 PM
From File	SO-Area1-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	2.158	Mean of logged Data	3.15
Maximum of Logged Data	3.947	SD of logged Data	0.718

Assuming Lognormal Distribution

95% H-UCL	64.12	90% Chebyshev (MVUE) UCL	51.62
95% Chebyshev (MVUE) UCL	61.82	97.5% Chebyshev (MVUE) UCL	75.98
99% Chebyshev (MVUE) UCL	103.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	38.71	95% Jackknife UCL	40.25
95% Standard Bootstrap UCL	37.76	95% Bootstrap-t UCL	40.96
95% Hall's Bootstrap UCL	37.61	95% Percentile Bootstrap UCL	37.8
95% BCA Bootstrap UCL	38.43		
90% Chebyshev(Mean, Sd) UCL	47.05	95% Chebyshev(Mean, Sd) UCL	55.42
97.5% Chebyshev(Mean, Sd) UCL	67.04	99% Chebyshev(Mean, Sd) UCL	89.85

Suggested UCL to Use

95% Student's-t UCL 40.25

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/7/2014 4:43:17 PM
From File	So-Area1-0-2ft-Update_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROPROPANE

General Statistics

Total Number of Observations	71	Number of Distinct Observations	32
		Number of Missing Observations	9
Number of Detects	2	Number of Non-Detects	69
Number of Distinct Detects	2	Number of Distinct Non-Detects	30
Minimum Detect	0.634	Minimum Non-Detect	0
Maximum Detect	13	Maximum Non-Detect	10.2
Variance Detects	76.46	Percent Non-Detects	97.18%
Mean Detects	6.817	SD Detects	8.744
Median Detects	6.817	CV Detects	1.283
Skewness Detects	N/A	Kurtosis Detects	N/A

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.195	Standard Error of Mean	0.257
SD	1.533	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.624	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.618	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.967	95% KM Chebyshev UCL	1.317
97.5% KM Chebyshev UCL	1.802	99% KM Chebyshev UCL	2.756

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Attachment F
ProUCL Output Area 1 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/7/2014 4:43:17 PM
From File	So-Area1-0-2ft-Update_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Statistics on Detected Data Only

k hat (MLE)	0.699	k star (bias corrected MLE)	N/A
Theta hat (MLE)	9.754	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	2.795	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0161	nu hat (KM)	2.29
		Adjusted Level of Significance (β)	0.0466
Approximate Chi Square Value (2.29, α)	0.197	Adjusted Chi Square Value (2.29, β)	0.189
95% Gamma Approximate KM-UCL (use when n>=50)	2.257	95% Gamma Adjusted KM-UCL (use when n<50)	2.356

Gamma (KM) may not be used when k hat (KM) is < 0.1

DL/2 Statistics

Mean in Original Scale	0.586	SD in Original Scale	1.805
95% t UCL (Assumes normality)	0.943		

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	1.802

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/7/2014 4:43:17 PM
From File	So-Area1-0-2ft-Update_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4,5-TETRACHLOROBENZENE

General Statistics

Total Number of Observations	11	Number of Distinct Observations	10
		Number of Missing Observations	69
Number of Detects	2	Number of Non-Detects	9
Number of Distinct Detects	2	Number of Distinct Non-Detects	8
Minimum Detect	0.1	Minimum Non-Detect	0.074
Maximum Detect	2.1	Maximum Non-Detect	0.25
Variance Detects	2	Percent Non-Detects	81.82%
Mean Detects	1.1	SD Detects	1.414
Median Detects	1.1	CV Detects	1.286
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-0.78	SD of Logged Detects	2.153

Warning: Data set has only 2 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.261	Standard Error of Mean	0.248
SD	0.582	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.71	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.669	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.005	95% KM Chebyshev UCL	1.342
97.5% KM Chebyshev UCL	1.81	99% KM Chebyshev UCL	2.729

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Attachment F
ProUCL Output Area 1 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/7/2014 4:43:17 PM
From File	So-Area1-0-2ft-Update_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Statistics on Detected Data Only

k hat (MLE)	0.691	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.591	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	2.766	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.201	nu hat (KM)	4.423
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (4.42, α)	0.896	Adjusted Chi Square Value (4.42, β)	0.67
95% Gamma Approximate KM-UCL (use when n>=50)	1.288	95% Gamma Adjusted KM-UCL (use when n<50)	1.721

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.2	Mean in Log Scale	-7.302
SD in Original Scale	0.631	SD in Log Scale	3.394
95% t UCL (assumes normality of ROS data)	0.545	95% Percentile Bootstrap UCL	0.573
95% BCA Bootstrap UCL	0.773	95% Bootstrap t UCL	614
95% H-UCL (Log ROS)	1788		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.241	Mean in Log Scale	-2.655
SD in Original Scale	0.617	SD in Log Scale	1.2
95% t UCL (Assumes normality)	0.579	95% H-Stat UCL	0.524

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	2.729

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/7/2014 4:43:17 PM
From File	So-Area1-0-2ft-Update_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Attachment F
ProUCL Output Area 1 Surface Soil (0-2ft)
Human Health Risk Assessment
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Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/7/2014 4:43:17 PM
From File	So-Area1-0-2ft-Update_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	11	Number of Distinct Observations	11
		Number of Missing Observations	65
Minimum	4.99	Mean	19.52
Maximum	38	Median	13.3
SD	13.43	Std. Error of Mean	4.049
Coefficient of Variation	0.688	Skewness	0.37

Normal GOF Test

Shapiro Wilk Test Statistic	0.843	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.224	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.86	95% Adjusted-CLT UCL (Chen-1995)	26.67
		95% Modified-t UCL (Johnson-1978)	26.94

Gamma GOF Test

A-D Test Statistic	0.587	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.738	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.195	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.258	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.096	k star (bias corrected MLE)	1.585
Theta hat (MLE)	9.315	Theta star (bias corrected MLE)	12.32
nu hat (MLE)	46.11	nu star (bias corrected)	34.87
MLE Mean (bias corrected)	19.52	MLE Sd (bias corrected)	15.51
		Approximate Chi Square Value (0.05)	22.36
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	20.74

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	30.45	95% Adjusted Gamma UCL (use when n<50)	32.83

Attachment F
ProUCL Output Area 1 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/7/2014 4:43:17 PM
From File	So-Area1-0-2ft-Update_b.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.887	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.186	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.267	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.607	Mean of logged Data	2.715
Maximum of Logged Data	3.638	SD of logged Data	0.784

Assuming Lognormal Distribution

95% H-UCL	39.19	90% Chebyshev (MVUE) UCL	34.54
95% Chebyshev (MVUE) UCL	41.2	97.5% Chebyshev (MVUE) UCL	50.44
99% Chebyshev (MVUE) UCL	68.59		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	26.18	95% Jackknife UCL	26.86
95% Standard Bootstrap UCL	25.88	95% Bootstrap-t UCL	27.12
95% Hall's Bootstrap UCL	24.99	95% Percentile Bootstrap UCL	26
95% BCA Bootstrap UCL	26.05		
90% Chebyshev(Mean, Sd) UCL	31.67	95% Chebyshev(Mean, Sd) UCL	37.17
97.5% Chebyshev(Mean, Sd) UCL	44.81	99% Chebyshev(Mean, Sd) UCL	59.81

Suggested UCL to Use

95% Student's-t UCL	26.86

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,1,2,2-TETRACHLOROETHANE

General Statistics

Total Number of Observations	164	Number of Distinct Observations	71
Number of Detects	14	Number of Non-Detects	150
Number of Distinct Detects	14	Number of Distinct Non-Detects	58
Minimum Detect	0.009	Minimum Non-Detect	0.001
Maximum Detect	170	Maximum Non-Detect	16.46
Variance Detects	2053	Percent Non-Detects	91.46%
Mean Detects	21.78	SD Detects	45.31
Median Detects	2.5	CV Detects	2.08
Skewness Detects	3.077	Kurtosis Detects	10.22
Mean of Logged Detects	0.722	SD of Logged Detects	2.953

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.536	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.87	Standard Error of Mean	1.146
SD	14.13	95% KM (BCA) UCL	4.095
95% KM (t) UCL	3.765	95% KM (Percentile Bootstrap) UCL	3.848
95% KM (z) UCL	3.754	95% KM Bootstrap t UCL	7.805
90% KM Chebyshev UCL	5.306	95% KM Chebyshev UCL	6.863
97.5% KM Chebyshev UCL	9.023	99% KM Chebyshev UCL	13.27

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.388	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.835	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.209	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.248	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.293	k star (bias corrected MLE)	0.278
Theta hat (MLE)	74.24	Theta star (bias corrected MLE)	78.31
nu hat (MLE)	8.215	nu star (bias corrected)	7.788
MLE Mean (bias corrected)	21.78	MLE Sd (bias corrected)	41.3

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0175	nu hat (KM)	5.739
Approximate Chi Square Value (5.74, α)	1.508	Adjusted Chi Square Value (5.74, β)	1.489
95% Gamma Approximate KM-UCL (use when n>=50)	7.115	95% Gamma Adjusted KM-UCL (use when n<50)	7.205

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.009	Mean	1.868
Maximum	170	Median	0.01
SD	14.18	CV	7.588
k hat (MLE)	0.159	k star (bias corrected MLE)	0.161
Theta hat (MLE)	11.71	Theta star (bias corrected MLE)	11.63
nu hat (MLE)	52.32	nu star (bias corrected)	52.69
MLE Mean (bias corrected)	1.868	MLE Sd (bias corrected)	4.662
		Adjusted Level of Significance (β)	0.0485
Approximate Chi Square Value (52.69, α)	37.02	Adjusted Chi Square Value (52.69, β)	36.9
95% Gamma Approximate UCL (use when n>=50)	2.66	95% Gamma Adjusted UCL (use when n<50)	2.668

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.12	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.86	Mean in Log Scale	-11.13
SD in Original Scale	14.18	SD in Log Scale	5.37
95% t UCL (assumes normality of ROS data)	3.692	95% Percentile Bootstrap UCL	3.921
95% BCA Bootstrap UCL	5.181	95% Bootstrap t UCL	8.509
95% H-UCL (Log ROS)	623.9		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.062	95% H-UCL (KM -Log)	0.0753
KM SD (logged)	2.368	95% Critical H Value (KM-Log)	3.624
KM Standard Error of Mean (logged)	0.227		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.271	Mean in Log Scale	-2.51
SD in Original Scale	14.17	SD in Log Scale	2.613
95% t UCL (Assumes normality)	4.102	95% H-Stat UCL	5.517

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	3.765	95% GROS Approximate Gamma UCL	2.66
95% Approximate Gamma KM-UCL	7.115		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,3-TRICHLOROBENZENE

General Statistics

Total Number of Observations	44	Number of Distinct Observations	36
Number of Detects	20	Number of Non-Detects	24
Number of Distinct Detects	20	Number of Distinct Non-Detects	16
Minimum Detect	0.0802	Minimum Non-Detect	0.001
Maximum Detect	450	Maximum Non-Detect	7.691
Variance Detects	10936	Percent Non-Detects	54.55%
Mean Detects	61.07	SD Detects	104.6
Median Detects	23.33	CV Detects	1.712
Skewness Detects	3.005	Kurtosis Detects	10.47
Mean of Logged Detects	2.214	SD of Logged Detects	2.631

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.617	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.905	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.28	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.198	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	27.8	Standard Error of Mean	11.62
SD	75.13	95% KM (BCA) UCL	48.89
95% KM (t) UCL	47.34	95% KM (Percentile Bootstrap) UCL	47.59
95% KM (z) UCL	46.92	95% KM Bootstrap t UCL	68.35
90% KM Chebyshev UCL	62.67	95% KM Chebyshev UCL	78.46
97.5% KM Chebyshev UCL	100.4	99% KM Chebyshev UCL	143.4

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.374	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.833	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.136	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.209	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.354	k star (bias corrected MLE)	0.334
Theta hat (MLE)	172.7	Theta star (bias corrected MLE)	182.9
nu hat (MLE)	14.15	nu star (bias corrected)	13.36
MLE Mean (bias corrected)	61.07	MLE Sd (bias corrected)	105.7

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.137	nu hat (KM)	12.05
Approximate Chi Square Value (12.05, α)	5.261	Adjusted Chi Square Value (12.05, β)	5.109
95% Gamma Approximate KM-UCL (use when n>=50)	63.69	95% Gamma Adjusted KM-UCL (use when n<50)	65.59

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	27.77
Maximum	450	Median	0.01
SD	76.01	CV	2.738
k hat (MLE)	0.158	k star (bias corrected MLE)	0.162
Theta hat (MLE)	175.8	Theta star (bias corrected MLE)	171
nu hat (MLE)	13.9	nu star (bias corrected)	14.29
MLE Mean (bias corrected)	27.77	MLE Sd (bias corrected)	68.92
		Adjusted Level of Significance (β)	0.0445
Approximate Chi Square Value (14.29, α)	6.767	Adjusted Chi Square Value (14.29, β)	6.591
95% Gamma Approximate UCL (use when n>=50)	58.61	95% Gamma Adjusted UCL (use when n<50)	60.18

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.927	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.905	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.176	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.198	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	27.78	Mean in Log Scale	-1.267
SD in Original Scale	76.01	SD in Log Scale	3.821
95% t UCL (assumes normality of ROS data)	47.04	95% Percentile Bootstrap UCL	49.21
95% BCA Bootstrap UCL	56.86	95% Bootstrap t UCL	69.21
95% H-UCL (Log ROS)	17842		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.438	95% H-UCL (KM -Log)	2663868
KM SD (logged)	4.78	95% Critical H Value (KM-Log)	7.968
KM Standard Error of Mean (logged)	0.769		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	28.13	Mean in Log Scale	-1.009
SD in Original Scale	75.88	SD in Log Scale	4.289
95% t UCL (Assumes normality)	47.36	95% H-Stat UCL	395827

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	47.34	95% GROS Adjusted Gamma UCL	60.18
95% Adjusted Gamma KM-UCL	65.59		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-TRICHLOROBENZENE

General Statistics

Total Number of Observations	74	Number of Distinct Observations	53
Number of Detects	35	Number of Non-Detects	39
Number of Distinct Detects	34	Number of Distinct Non-Detects	20
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	1145	Maximum Non-Detect	8.049
Variance Detects	83780	Percent Non-Detects	52.7%
Mean Detects	169.8	SD Detects	289.4
Median Detects	17	CV Detects	1.704
Skewness Detects	2.057	Kurtosis Detects	3.763
Mean of Logged Detects	2.343	SD of Logged Detects	3.519

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.658	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.311	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	80.35	Standard Error of Mean	25.21
SD	213.7	95% KM (BCA) UCL	129.5
95% KM (t) UCL	122.3	95% KM (Percentile Bootstrap) UCL	127.9
95% KM (z) UCL	121.8	95% KM Bootstrap t UCL	138.8
90% KM Chebyshev UCL	156	95% KM Chebyshev UCL	190.2
97.5% KM Chebyshev UCL	237.8	99% KM Chebyshev UCL	331.2

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.535	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.88	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.124	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.163	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.254	k star (bias corrected MLE)	0.251
Theta hat (MLE)	669.2	Theta star (bias corrected MLE)	676.4
nu hat (MLE)	17.76	nu star (bias corrected)	17.58
MLE Mean (bias corrected)	169.8	MLE Sd (bias corrected)	338.9

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.141	nu hat (KM)	20.92
Approximate Chi Square Value (20.92, α)	11.53	Adjusted Chi Square Value (20.92, β)	11.39
95% Gamma Approximate KM-UCL (use when n>=50)	145.8	95% Gamma Adjusted KM-UCL (use when n<50)	147.5

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	80.33
Maximum	1145	Median	0.01
SD	215.2	CV	2.679
k hat (MLE)	0.137	k star (bias corrected MLE)	0.14
Theta hat (MLE)	588.3	Theta star (bias corrected MLE)	573.7
nu hat (MLE)	20.21	nu star (bias corrected)	20.72
MLE Mean (bias corrected)	80.33	MLE Sd (bias corrected)	214.7
		Adjusted Level of Significance (β)	0.0468
Approximate Chi Square Value (20.72, α)	11.39	Adjusted Chi Square Value (20.72, β)	11.25
95% Gamma Approximate UCL (use when n>=50)	146.2	95% Gamma Adjusted UCL (use when n<50)	148

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.115	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	80.33	Mean in Log Scale	-2.074
SD in Original Scale	215.2	SD in Log Scale	5.123
95% t UCL (assumes normality of ROS data)	122	95% Percentile Bootstrap UCL	121.1
95% BCA Bootstrap UCL	134.9	95% Bootstrap t UCL	144.3
95% H-UCL (Log ROS)	6687860		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.387	95% H-UCL (KM -Log)	6314764
KM SD (logged)	5.16	95% Critical H Value (KM-Log)	7.839
KM Standard Error of Mean (logged)	0.617		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	80.52	Mean in Log Scale	-1.455
SD in Original Scale	215.1	SD in Log Scale	4.902
95% t UCL (Assumes normality)	122.2	95% H-Stat UCL	2794385

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	122.3	95% GROS Approximate Gamma UCL	146.2
95% Approximate Gamma KM-UCL	145.8		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-CIS-DICHLOROETHYLENE

General Statistics

Total Number of Observations	163	Number of Distinct Observations	81
Number of Detects	34	Number of Non-Detects	129
Number of Distinct Detects	34	Number of Distinct Non-Detects	52
Minimum Detect	0.0365	Minimum Non-Detect	0.001
Maximum Detect	150	Maximum Non-Detect	5.366
Variance Detects	706.3	Percent Non-Detects	79.14%
Mean Detects	11.05	SD Detects	26.58
Median Detects	1.293	CV Detects	2.405
Skewness Detects	4.641	Kurtosis Detects	23.99
Mean of Logged Detects	0.67	SD of Logged Detects	2.022

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.438	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.339	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.152	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.318	Standard Error of Mean	1.015
SD	12.77	95% KM (BCA) UCL	4.375
95% KM (t) UCL	3.998	95% KM (Percentile Bootstrap) UCL	4.245
95% KM (z) UCL	3.988	95% KM Bootstrap t UCL	6.629
90% KM Chebyshev UCL	5.364	95% KM Chebyshev UCL	6.744
97.5% KM Chebyshev UCL	8.659	99% KM Chebyshev UCL	12.42

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.344	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.838	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.19	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.162	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.383	k star (bias corrected MLE)	0.368
Theta hat (MLE)	28.87	Theta star (bias corrected MLE)	29.98
nu hat (MLE)	26.02	nu star (bias corrected)	25.06
MLE Mean (bias corrected)	11.05	MLE Sd (bias corrected)	18.2

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0329	nu hat (KM)	10.74
Approximate Chi Square Value (10.74, α)	4.409	Adjusted Chi Square Value (10.74, β)	4.372
95% Gamma Approximate KM-UCL (use when n>=50)	5.646	95% Gamma Adjusted KM-UCL (use when n<50)	5.693

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.313
Maximum	150	Median	0.01
SD	12.81	CV	5.539
k hat (MLE)	0.173	k star (bias corrected MLE)	0.174
Theta hat (MLE)	13.35	Theta star (bias corrected MLE)	13.28
nu hat (MLE)	56.47	nu star (bias corrected)	56.77
MLE Mean (bias corrected)	2.313	MLE Sd (bias corrected)	5.542
		Adjusted Level of Significance (β)	0.0485
Approximate Chi Square Value (56.77, α)	40.45	Adjusted Chi Square Value (56.77, β)	40.33
95% Gamma Approximate UCL (use when n>=50)	3.246	95% Gamma Adjusted UCL (use when n<50)	3.255

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.96	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.116	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.152	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.312	Mean in Log Scale	-4.858
SD in Original Scale	12.81	SD in Log Scale	3.574
95% t UCL (assumes normality of ROS data)	3.972	95% Percentile Bootstrap UCL	4.198
95% BCA Bootstrap UCL	5.343	95% Bootstrap t UCL	6.943
95% H-UCL (Log ROS)	19.44		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.093	95% H-UCL (KM -Log)	4.352
KM SD (logged)	3.27	95% Critical H Value (KM-Log)	4.742
KM Standard Error of Mean (logged)	0.289		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.479	Mean in Log Scale	-2.368
SD in Original Scale	12.79	SD in Log Scale	2.759
95% t UCL (Assumes normality)	4.135	95% H-Stat UCL	10.26

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	8.659

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROBENZENE

General Statistics

Total Number of Observations	173	Number of Distinct Observations	118
Number of Detects	103	Number of Non-Detects	70
Number of Distinct Detects	96	Number of Distinct Non-Detects	25
Minimum Detect	0.004	Minimum Non-Detect	0.001
Maximum Detect	8700	Maximum Non-Detect	2
Variance Detects	826161	Percent Non-Detects	40.46%
Mean Detects	215.5	SD Detects	908.9
Median Detects	11	CV Detects	4.218
Skewness Detects	8.378	Kurtosis Detects	76.56
Mean of Logged Detects	2.162	SD of Logged Detects	3.252

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.252	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.406	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0873	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	128.3	Standard Error of Mean	53.93
SD	705.9	95% KM (BCA) UCL	240.3
95% KM (t) UCL	217.5	95% KM (Percentile Bootstrap) UCL	225.1
95% KM (z) UCL	217	95% KM Bootstrap t UCL	438.2
90% KM Chebyshev UCL	290.1	95% KM Chebyshev UCL	363.4
97.5% KM Chebyshev UCL	465.1	99% KM Chebyshev UCL	664.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.564	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.905	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.125	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.0979	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.225	k star (bias corrected MLE)	0.225
Theta hat (MLE)	957.6	Theta star (bias corrected MLE)	957.9
nu hat (MLE)	46.35	nu star (bias corrected)	46.33
MLE Mean (bias corrected)	215.5	MLE Sd (bias corrected)	454.3

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.033	nu hat (KM)	11.43
Approximate Chi Square Value (11.43, α)	4.853	Adjusted Chi Square Value (11.43, β)	4.817
95% Gamma Approximate KM-UCL (use when n>=50)	302.1	95% Gamma Adjusted KM-UCL (use when n<50)	304.4

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	128.3
Maximum	8700	Median	0.22
SD	707.9	CV	5.518
k hat (MLE)	0.143	k star (bias corrected MLE)	0.144
Theta hat (MLE)	899.8	Theta star (bias corrected MLE)	891.1
nu hat (MLE)	49.33	nu star (bias corrected)	49.81
MLE Mean (bias corrected)	128.3	MLE Sd (bias corrected)	338.1
		Adjusted Level of Significance (β)	0.0486
Approximate Chi Square Value (49.81, α)	34.61	Adjusted Chi Square Value (49.81, β)	34.5
95% Gamma Approximate UCL (use when n>=50)	184.7	95% Gamma Adjusted UCL (use when n<50)	185.2

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0737	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0873	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	128.3	Mean in Log Scale	-0.763
SD in Original Scale	707.9	SD in Log Scale	4.532
95% t UCL (assumes normality of ROS data)	217.3	95% Percentile Bootstrap UCL	230.1
95% BCA Bootstrap UCL	284.3	95% Bootstrap t UCL	447.2
95% H-UCL (Log ROS)	122489		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.24	95% H-UCL (KM -Log)	626588
KM SD (logged)	4.902	95% Critical H Value (KM-Log)	6.885
KM Standard Error of Mean (logged)	0.385		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	128.3	Mean in Log Scale	-0.36
SD in Original Scale	707.9	SD in Log Scale	4.232
95% t UCL (Assumes normality)	217.3	95% H-Stat UCL	37620

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 465.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROETHANE

General Statistics

Total Number of Observations	164	Number of Distinct Observations	76
Number of Detects	23	Number of Non-Detects	141
Number of Distinct Detects	20	Number of Distinct Non-Detects	57
Minimum Detect	0.011	Minimum Non-Detect	0.001
Maximum Detect	45	Maximum Non-Detect	5.902
Variance Detects	134.6	Percent Non-Detects	85.98%
Mean Detects	6.819	SD Detects	11.6
Median Detects	1.8	CV Detects	1.701
Skewness Detects	2.464	Kurtosis Detects	5.795
Mean of Logged Detects	0.489	SD of Logged Detects	2.049

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.62	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.279	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.97	Standard Error of Mean	0.388
SD	4.863	95% KM (BCA) UCL	1.736
95% KM (t) UCL	1.612	95% KM (Percentile Bootstrap) UCL	1.659
95% KM (z) UCL	1.609	95% KM Bootstrap t UCL	2.414
90% KM Chebyshev UCL	2.135	95% KM Chebyshev UCL	2.663
97.5% KM Chebyshev UCL	3.396	99% KM Chebyshev UCL	4.835

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.448	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.816	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.192	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.193	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.451	k star (bias corrected MLE)	0.421
Theta hat (MLE)	15.12	Theta star (bias corrected MLE)	16.19
nu hat (MLE)	20.75	nu star (bias corrected)	19.37
MLE Mean (bias corrected)	6.819	MLE Sd (bias corrected)	10.51

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0398	nu hat (KM)	13.04
Approximate Chi Square Value (13.04, α)	5.922	Adjusted Chi Square Value (13.04, β)	5.88
95% Gamma Approximate KM-UCL (use when n>=50)	2.136	95% Gamma Adjusted KM-UCL (use when n<50)	2.152

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.965
Maximum	45	Median	0.01
SD	4.877	CV	5.054
k hat (MLE)	0.192	k star (bias corrected MLE)	0.193
Theta hat (MLE)	5.024	Theta star (bias corrected MLE)	5.009
nu hat (MLE)	63.01	nu star (bias corrected)	63.19
MLE Mean (bias corrected)	0.965	MLE Sd (bias corrected)	2.199
		Adjusted Level of Significance (β)	0.0485
Approximate Chi Square Value (63.19, α)	45.9	Adjusted Chi Square Value (63.19, β)	45.77
95% Gamma Approximate UCL (use when n>=50)	1.328	95% Gamma Adjusted UCL (use when n<50)	1.332

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.972	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0933	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.961	Mean in Log Scale	-6.255
SD in Original Scale	4.878	SD in Log Scale	3.644
95% t UCL (assumes normality of ROS data)	1.592	95% Percentile Bootstrap UCL	1.659
95% BCA Bootstrap UCL	1.861	95% Bootstrap t UCL	2.494
95% H-UCL (Log ROS)	6.524		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.616	95% H-UCL (KM -Log)	0.424
KM SD (logged)	2.778	95% Critical H Value (KM-Log)	4.127
KM Standard Error of Mean (logged)	0.258		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1.187	Mean in Log Scale	-2.526
SD in Original Scale	4.862	SD in Log Scale	2.601
95% t UCL (Assumes normality)	1.815	95% H-Stat UCL	5.223

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.612	95% GROS Approximate Gamma UCL	1.328
95% Approximate Gamma KM-UCL	2.136		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,3-DICHLOROBENZENE

General Statistics

Total Number of Observations	173	Number of Distinct Observations	87
Number of Detects	44	Number of Non-Detects	129
Number of Distinct Detects	37	Number of Distinct Non-Detects	54
Minimum Detect	0.0037	Minimum Non-Detect	0.001
Maximum Detect	27	Maximum Non-Detect	6.439
Variance Detects	19.72	Percent Non-Detects	74.57%
Mean Detects	1.569	SD Detects	4.441
Median Detects	0.22	CV Detects	2.831
Skewness Detects	4.814	Kurtosis Detects	26.03
Mean of Logged Detects	-1.518	SD of Logged Detects	2.112

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.391	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.944	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.366	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.134	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.422	Standard Error of Mean	0.178
SD	2.316	95% KM (BCA) UCL	0.755
95% KM (t) UCL	0.717	95% KM (Percentile Bootstrap) UCL	0.745
95% KM (z) UCL	0.716	95% KM Bootstrap t UCL	1.188
90% KM Chebyshev UCL	0.957	95% KM Chebyshev UCL	1.2
97.5% KM Chebyshev UCL	1.536	99% KM Chebyshev UCL	2.197

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.332	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.851	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.144	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.343	k star (bias corrected MLE)	0.335
Theta hat (MLE)	4.577	Theta star (bias corrected MLE)	4.69
nu hat (MLE)	30.16	nu star (bias corrected)	29.44
MLE Mean (bias corrected)	1.569	MLE Sd (bias corrected)	2.713

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0332	nu hat (KM)	11.5
Approximate Chi Square Value (11.50, α)	4.897	Adjusted Chi Square Value (11.50, β)	4.861
95% Gamma Approximate KM-UCL (use when n>=50)	0.991	95% Gamma Adjusted KM-UCL (use when n<50)	0.998

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0037	Mean	0.407
Maximum	27	Median	0.01
SD	2.323	CV	5.714
k hat (MLE)	0.244	k star (bias corrected MLE)	0.244
Theta hat (MLE)	1.665	Theta star (bias corrected MLE)	1.667
nu hat (MLE)	84.49	nu star (bias corrected)	84.36
MLE Mean (bias corrected)	0.407	MLE Sd (bias corrected)	0.823
		Adjusted Level of Significance (β)	0.0486
Approximate Chi Square Value (84.36, α)	64.19	Adjusted Chi Square Value (84.36, β)	64.04
95% Gamma Approximate UCL (use when n>=50)	0.534	95% Gamma Adjusted UCL (use when n<50)	0.535

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.944	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.126	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.134	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.405	Mean in Log Scale	-4.967
SD in Original Scale	2.323	SD in Log Scale	2.761
95% t UCL (assumes normality of ROS data)	0.697	95% Percentile Bootstrap UCL	0.72
95% BCA Bootstrap UCL	0.902	95% Bootstrap t UCL	1.179
95% H-UCL (Log ROS)	0.75		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.696	95% H-UCL (KM -Log)	0.653
KM SD (logged)	2.636	95% Critical H Value (KM-Log)	3.963
KM Standard Error of Mean (logged)	0.273		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.621	Mean in Log Scale	-2.588
SD in Original Scale	2.349	SD in Log Scale	2.364
95% t UCL (Assumes normality)	0.916	95% H-Stat UCL	2.362

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	1.536

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,4-DICHLOROBENZENE

General Statistics

Total Number of Observations	183	Number of Distinct Observations	114
Number of Detects	93	Number of Non-Detects	90
Number of Distinct Detects	81	Number of Distinct Non-Detects	38
Minimum Detect	0.003	Minimum Non-Detect	0.001
Maximum Detect	220	Maximum Non-Detect	6.797
Variance Detects	901.6	Percent Non-Detects	49.18%
Mean Detects	8.068	SD Detects	30.03
Median Detects	0.74	CV Detects	3.722
Skewness Detects	6.053	Kurtosis Detects	38.28
Mean of Logged Detects	-0.462	SD of Logged Detects	2.487

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.288	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.394	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0919	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	4.128	Standard Error of Mean	1.61
SD	21.66	95% KM (BCA) UCL	7.026
95% KM (t) UCL	6.79	95% KM (Percentile Bootstrap) UCL	7.073
95% KM (z) UCL	6.776	95% KM Bootstrap t UCL	13.19
90% KM Chebyshev UCL	8.958	95% KM Chebyshev UCL	11.15
97.5% KM Chebyshev UCL	14.18	99% KM Chebyshev UCL	20.15

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.177	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.88	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.159	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.101	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.274	k star (bias corrected MLE)	0.273
Theta hat (MLE)	29.4	Theta star (bias corrected MLE)	29.58
nu hat (MLE)	51.04	nu star (bias corrected)	50.72
MLE Mean (bias corrected)	8.068	MLE Sd (bias corrected)	15.45

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0363	nu hat (KM)	13.29
Approximate Chi Square Value (13.29, α)	6.087	Adjusted Chi Square Value (13.29, β)	6.048
95% Gamma Approximate KM-UCL (use when n>=50)	9.011	95% Gamma Adjusted KM-UCL (use when n<50)	9.069

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.003	Mean	4.105
Maximum	220	Median	0.01
SD	21.73	CV	5.293
k hat (MLE)	0.19	k star (bias corrected MLE)	0.19
Theta hat (MLE)	21.64	Theta star (bias corrected MLE)	21.58
nu hat (MLE)	69.42	nu star (bias corrected)	69.62
MLE Mean (bias corrected)	4.105	MLE Sd (bias corrected)	9.412
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (69.62, α)	51.41	Adjusted Chi Square Value (69.62, β)	51.29
95% Gamma Approximate UCL (use when n>=50)	5.559	95% Gamma Adjusted UCL (use when n<50)	5.572

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.045	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0919	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	4.107	Mean in Log Scale	-2.801
SD in Original Scale	21.73	SD in Log Scale	3.218
95% t UCL (assumes normality of ROS data)	6.763	95% Percentile Bootstrap UCL	7.008
95% BCA Bootstrap UCL	8.214	95% Bootstrap t UCL	12.91
95% H-UCL (Log ROS)	33.13		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.882	95% H-UCL (KM -Log)	46.1
KM SD (logged)	3.323	95% Critical H Value (KM-Log)	4.845
KM Standard Error of Mean (logged)	0.279		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	4.235	Mean in Log Scale	-1.834
SD in Original Scale	21.71	SD in Log Scale	2.843
95% t UCL (Assumes normality)	6.888	95% H-Stat UCL	22.18

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	14.18

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZENE

General Statistics

Total Number of Observations	166	Number of Distinct Observations	100
Number of Detects	70	Number of Non-Detects	96
Number of Distinct Detects	62	Number of Distinct Non-Detects	42
Minimum Detect	0.001	Minimum Non-Detect	5.0000E-4
Maximum Detect	98	Maximum Non-Detect	4.114
Variance Detects	147.1	Percent Non-Detects	57.83%
Mean Detects	4.132	SD Detects	12.13
Median Detects	0.738	CV Detects	2.936
Skewness Detects	6.958	Kurtosis Detects	53.63
Mean of Logged Detects	-0.429	SD of Logged Detects	2.374

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.34	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.367	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.106	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.764	Standard Error of Mean	0.632
SD	8.079	95% KM (BCA) UCL	3.081
95% KM (t) UCL	2.809	95% KM (Percentile Bootstrap) UCL	2.966
95% KM (z) UCL	2.803	95% KM Bootstrap t UCL	4.548
90% KM Chebyshev UCL	3.659	95% KM Chebyshev UCL	4.517
97.5% KM Chebyshev UCL	5.709	99% KM Chebyshev UCL	8.049

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.115	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.851	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.134	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.115	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.362	k star (bias corrected MLE)	0.356
Theta hat (MLE)	11.41	Theta star (bias corrected MLE)	11.61
nu hat (MLE)	50.68	nu star (bias corrected)	49.84
MLE Mean (bias corrected)	4.132	MLE Sd (bias corrected)	6.924

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0477	nu hat (KM)	15.83
Approximate Chi Square Value (15.83, α)	7.842	Adjusted Chi Square Value (15.83, β)	7.793
95% Gamma Approximate KM-UCL (use when n>=50)	3.561	95% Gamma Adjusted KM-UCL (use when n<50)	3.583

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	1.748
Maximum	98	Median	0.01
SD	8.106	CV	4.637
k hat (MLE)	0.214	k star (bias corrected MLE)	0.214
Theta hat (MLE)	8.168	Theta star (bias corrected MLE)	8.162
nu hat (MLE)	71.05	nu star (bias corrected)	71.1
MLE Mean (bias corrected)	1.748	MLE Sd (bias corrected)	3.777
		Adjusted Level of Significance (β)	0.0486
Approximate Chi Square Value (71.10, α)	52.68	Adjusted Chi Square Value (71.10, β)	52.55
95% Gamma Approximate UCL (use when n>=50)	2.359	95% Gamma Adjusted UCL (use when n<50)	2.365

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0919	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.106	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.749	Mean in Log Scale	-3.353
SD in Original Scale	8.106	SD in Log Scale	3.204
95% t UCL (assumes normality of ROS data)	2.789	95% Percentile Bootstrap UCL	2.93
95% BCA Bootstrap UCL	3.693	95% Bootstrap t UCL	4.454
95% H-UCL (Log ROS)	19		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.823	95% H-UCL (KM -Log)	74.21
KM SD (logged)	3.646	95% Critical H Value (KM-Log)	5.229
KM Standard Error of Mean (logged)	0.336		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1.86	Mean in Log Scale	-2.076
SD in Original Scale	8.087	SD in Log Scale	2.83
95% t UCL (Assumes normality)	2.898	95% H-Stat UCL	17.34

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	5.709

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHLOROBENZENE

General Statistics

Total Number of Observations	186	Number of Distinct Observations	121
Number of Detects	108	Number of Non-Detects	78
Number of Distinct Detects	88	Number of Distinct Non-Detects	43
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	310	Maximum Non-Detect	8.764
Variance Detects	965.1	Percent Non-Detects	41.94%
Mean Detects	6.674	SD Detects	31.07
Median Detects	0.91	CV Detects	4.655
Skewness Detects	8.97	Kurtosis Detects	86.92
Mean of Logged Detects	-0.502	SD of Logged Detects	2.459

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.222	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.415	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0853	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.925	Standard Error of Mean	1.752
SD	23.79	95% KM (BCA) UCL	7.408
95% KM (t) UCL	6.822	95% KM (Percentile Bootstrap) UCL	7.375
95% KM (z) UCL	6.808	95% KM Bootstrap t UCL	13.16
90% KM Chebyshev UCL	9.182	95% KM Chebyshev UCL	11.56
97.5% KM Chebyshev UCL	14.87	99% KM Chebyshev UCL	21.36

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.402	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.873	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.186	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.0951	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.289	k star (bias corrected MLE)	0.287
Theta hat (MLE)	23.09	Theta star (bias corrected MLE)	23.24
nu hat (MLE)	62.43	nu star (bias corrected)	62.03
MLE Mean (bias corrected)	6.674	MLE Sd (bias corrected)	12.45

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0272	nu hat (KM)	10.13
Approximate Chi Square Value (10.13, α)	4.024	Adjusted Chi Square Value (10.13, β)	3.994
95% Gamma Approximate KM-UCL (use when n>=50)	9.883	95% Gamma Adjusted KM-UCL (use when n<50)	9.957

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	3.879
Maximum	310	Median	0.036
SD	23.86	CV	6.149
k hat (MLE)	0.205	k star (bias corrected MLE)	0.205
Theta hat (MLE)	18.93	Theta star (bias corrected MLE)	18.91
nu hat (MLE)	76.22	nu star (bias corrected)	76.32
MLE Mean (bias corrected)	3.879	MLE Sd (bias corrected)	8.565
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (76.32, α)	57.2	Adjusted Chi Square Value (76.32, β)	57.07
95% Gamma Approximate UCL (use when n>=50)	5.176	95% Gamma Adjusted UCL (use when n<50)	5.188

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.124	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0853	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.886	Mean in Log Scale	-2.19
SD in Original Scale	23.85	SD in Log Scale	2.912
95% t UCL (assumes normality of ROS data)	6.777	95% Percentile Bootstrap UCL	7.277
95% BCA Bootstrap UCL	9.389	95% Bootstrap t UCL	13.55
95% H-UCL (Log ROS)	19.6		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	4.062	Mean in Log Scale	-1.425
SD in Original Scale	23.83	SD in Log Scale	2.699
95% t UCL (Assumes normality)	6.951	95% H-Stat UCL	20.55

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	14.87

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CYCLOHEXANE, METHYL-

General Statistics

Total Number of Observations	14	Number of Distinct Observations	7
Number of Detects	5	Number of Non-Detects	9
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	0.002	Minimum Non-Detect	0.001
Maximum Detect	210	Maximum Non-Detect	0.073
Variance Detects	8790	Percent Non-Detects	64.29%
Mean Detects	42.29	SD Detects	93.76
Median Detects	0.19	CV Detects	2.217
Skewness Detects	2.236	Kurtosis Detects	4.999
Mean of Logged Detects	-1.072	SD of Logged Detects	4.282

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.556	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.469	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	15.1	Standard Error of Mean	16.15
SD	54.06	95% KM (BCA) UCL	45.09
95% KM (t) UCL	43.71	95% KM (Percentile Bootstrap) UCL	45.03
95% KM (z) UCL	41.67	95% KM Bootstrap t UCL	12062
90% KM Chebyshev UCL	63.56	95% KM Chebyshev UCL	85.51
97.5% KM Chebyshev UCL	116	99% KM Chebyshev UCL	175.8

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.546	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.814	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.343	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.158	k star (bias corrected MLE)	0.197
Theta hat (MLE)	267.1	Theta star (bias corrected MLE)	215
nu hat (MLE)	1.583	nu star (bias corrected)	1.967
MLE Mean (bias corrected)	42.29	MLE Sd (bias corrected)	95.36

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0781	nu hat (KM)	2.186
Approximate Chi Square Value (2.19, α)	0.179	Adjusted Chi Square Value (2.19, β)	0.139
95% Gamma Approximate KM-UCL (use when n>=50)	184.7	95% Gamma Adjusted KM-UCL (use when n<50)	236.7

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	15.11
Maximum	210	Median	0.01
SD	56.09	CV	3.713
k hat (MLE)	0.13	k star (bias corrected MLE)	0.149
Theta hat (MLE)	116.7	Theta star (bias corrected MLE)	101.1
nu hat (MLE)	3.627	nu star (bias corrected)	4.183
MLE Mean (bias corrected)	15.11	MLE Sd (bias corrected)	39.09
		Adjusted Level of Significance (β)	0.0312
Approximate Chi Square Value (4.18, α)	0.795	Adjusted Chi Square Value (4.18, β)	0.624
95% Gamma Approximate UCL (use when n>=50)	79.47	95% Gamma Adjusted UCL (use when n<50)	101.3

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.975	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.185	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	15.1	Mean in Log Scale	-9.807
SD in Original Scale	56.1	SD in Log Scale	8.057
95% t UCL (assumes normality of ROS data)	41.65	95% Percentile Bootstrap UCL	45.04
95% BCA Bootstrap UCL	60.19	95% Bootstrap t UCL	16482
95% H-UCL (Log ROS)	8.287E+26		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.791	95% H-UCL (KM -Log)	17443
KM SD (logged)	3.61	95% Critical H Value (KM-Log)	8.032
KM Standard Error of Mean (logged)	1.083		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	15.11	Mean in Log Scale	-4.963
SD in Original Scale	56.1	SD in Log Scale	3.995
95% t UCL (Assumes normality)	41.66	95% H-Stat UCL	370598

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	43.71	95% GROS Adjusted Gamma UCL	101.3
95% Adjusted Gamma KM-UCL	236.7		

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ETHYLBENZENE

General Statistics

Total Number of Observations	183	Number of Distinct Observations	119
Number of Detects	115	Number of Non-Detects	68
Number of Distinct Detects	100	Number of Distinct Non-Detects	22
Minimum Detect	0.0025	Minimum Non-Detect	0.001
Maximum Detect	77	Maximum Non-Detect	3.017
Variance Detects	223.4	Percent Non-Detects	37.16%
Mean Detects	8.359	SD Detects	14.95
Median Detects	1.9	CV Detects	1.788
Skewness Detects	2.658	Kurtosis Detects	7.202
Mean of Logged Detects	0.384	SD of Logged Detects	2.396

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.604	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.288	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0826	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	5.265	Standard Error of Mean	0.925
SD	12.46	95% KM (BCA) UCL	6.96
95% KM (t) UCL	6.795	95% KM (Percentile Bootstrap) UCL	6.809
95% KM (z) UCL	6.788	95% KM Bootstrap t UCL	7.18
90% KM Chebyshev UCL	8.042	95% KM Chebyshev UCL	9.299
97.5% KM Chebyshev UCL	11.04	99% KM Chebyshev UCL	14.47

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.197	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.848	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.107	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.0919	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.381	k star (bias corrected MLE)	0.377
Theta hat (MLE)	21.93	Theta star (bias corrected MLE)	22.17
nu hat (MLE)	87.67	nu star (bias corrected)	86.72
MLE Mean (bias corrected)	8.359	MLE Sd (bias corrected)	13.61

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.178	nu hat (KM)	65.32
Approximate Chi Square Value (65.32, α)	47.72	Adjusted Chi Square Value (65.32, β)	47.6
95% Gamma Approximate KM-UCL (use when n>=50)	7.207	95% Gamma Adjusted KM-UCL (use when n<50)	7.225

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0025	Mean	5.257
Maximum	77	Median	0.31
SD	12.5	CV	2.378
k hat (MLE)	0.23	k star (bias corrected MLE)	0.23
Theta hat (MLE)	22.85	Theta star (bias corrected MLE)	22.87
nu hat (MLE)	84.18	nu star (bias corrected)	84.14
MLE Mean (bias corrected)	5.257	MLE Sd (bias corrected)	10.96
		Adjusted Level of Significance (β)	0.0487
Approximate Chi Square Value (84.14, α)	64	Adjusted Chi Square Value (84.14, β)	63.86
95% Gamma Approximate UCL (use when n>=50)	6.911	95% Gamma Adjusted UCL (use when n<50)	6.926

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.107	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0826	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	5.263	Mean in Log Scale	-1.397
SD in Original Scale	12.5	SD in Log Scale	3.136
95% t UCL (assumes normality of ROS data)	6.79	95% Percentile Bootstrap UCL	6.863
95% BCA Bootstrap UCL	7.115	95% Bootstrap t UCL	7.091
95% H-UCL (Log ROS)	98.59		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	5.296	Mean in Log Scale	-1.209
SD in Original Scale	12.49	SD in Log Scale	3.181
95% t UCL (Assumes normality)	6.822	95% H-Stat UCL	141.4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	11.04

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

METHYLENE CHLORIDE

General Statistics

Total Number of Observations	165	Number of Distinct Observations	88
Number of Detects	48	Number of Non-Detects	117
Number of Distinct Detects	46	Number of Distinct Non-Detects	45
Minimum Detect	0.0016	Minimum Non-Detect	0.002
Maximum Detect	350	Maximum Non-Detect	12
Variance Detects	3332	Percent Non-Detects	70.91%
Mean Detects	22.75	SD Detects	57.72
Median Detects	4.7	CV Detects	2.537
Skewness Detects	4.669	Kurtosis Detects	23.94
Mean of Logged Detects	1.023	SD of Logged Detects	2.825

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.418	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.347	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.128	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	6.655	Standard Error of Mean	2.556
SD	32.49	95% KM (BCA) UCL	11.55
95% KM (t) UCL	10.88	95% KM (Percentile Bootstrap) UCL	11.36
95% KM (z) UCL	10.86	95% KM Bootstrap t UCL	19.63
90% KM Chebyshev UCL	14.32	95% KM Chebyshev UCL	17.8
97.5% KM Chebyshev UCL	22.62	99% KM Chebyshev UCL	32.09

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.998	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.856	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.139	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.138	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.324	k star (bias corrected MLE)	0.318
Theta hat (MLE)	70.23	Theta star (bias corrected MLE)	71.64
nu hat (MLE)	31.1	nu star (bias corrected)	30.49
MLE Mean (bias corrected)	22.75	MLE Sd (bias corrected)	40.37

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.042	nu hat (KM)	13.85
Approximate Chi Square Value (13.85, α)	6.467	Adjusted Chi Square Value (13.85, β)	6.422
95% Gamma Approximate KM-UCL (use when n>=50)	14.25	95% Gamma Adjusted KM-UCL (use when n<50)	14.35

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0016	Mean	6.626
Maximum	350	Median	0.01
SD	32.59	CV	4.919
k hat (MLE)	0.157	k star (bias corrected MLE)	0.158
Theta hat (MLE)	42.17	Theta star (bias corrected MLE)	41.86
nu hat (MLE)	51.85	nu star (bias corrected)	52.24
MLE Mean (bias corrected)	6.626	MLE Sd (bias corrected)	16.65
		Adjusted Level of Significance (β)	0.0485
Approximate Chi Square Value (52.24, α)	36.64	Adjusted Chi Square Value (52.24, β)	36.52
95% Gamma Approximate UCL (use when n>=50)	9.447	95% Gamma Adjusted UCL (use when n<50)	9.477

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.889	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.175	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.128	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	6.628	Mean in Log Scale	-3.839
SD in Original Scale	32.59	SD in Log Scale	3.924
95% t UCL (assumes normality of ROS data)	10.83	95% Percentile Bootstrap UCL	11.05
95% BCA Bootstrap UCL	13.16	95% Bootstrap t UCL	18.54
95% H-UCL (Log ROS)	263		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	6.951	Mean in Log Scale	-1.455
SD in Original Scale	32.54	SD in Log Scale	2.92
95% t UCL (Assumes normality)	11.14	95% H-Stat UCL	44.27

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	22.62

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

O-XYLENE

General Statistics

Total Number of Observations	133	Number of Distinct Observations	84
Number of Detects	83	Number of Non-Detects	50
Number of Distinct Detects	67	Number of Distinct Non-Detects	18
Minimum Detect	0.003	Minimum Non-Detect	0.001
Maximum Detect	110	Maximum Non-Detect	7.155
Variance Detects	565.3	Percent Non-Detects	37.59%
Mean Detects	14.89	SD Detects	23.78
Median Detects	3.8	CV Detects	1.597
Skewness Detects	2.636	Kurtosis Detects	7.455
Mean of Logged Detects	1.446	SD of Logged Detects	1.956

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.634	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.266	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0973	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	9.309	Standard Error of Mean	1.745
SD	20.01	95% KM (BCA) UCL	12.49
95% KM (t) UCL	12.2	95% KM (Percentile Bootstrap) UCL	12.23
95% KM (z) UCL	12.18	95% KM Bootstrap t UCL	13.13
90% KM Chebyshev UCL	14.54	95% KM Chebyshev UCL	16.92
97.5% KM Chebyshev UCL	20.21	99% KM Chebyshev UCL	26.67

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.379	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.818	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.136	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.104	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.505	k star (bias corrected MLE)	0.495
Theta hat (MLE)	29.46	Theta star (bias corrected MLE)	30.07
nu hat (MLE)	83.9	nu star (bias corrected)	82.2
MLE Mean (bias corrected)	14.89	MLE Sd (bias corrected)	21.16

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.216	nu hat (KM)	57.59
Approximate Chi Square Value (57.59, α)	41.14	Adjusted Chi Square Value (57.59, β)	40.99
95% Gamma Approximate KM-UCL (use when n>=50)	13.03	95% Gamma Adjusted KM-UCL (use when n<50)	13.08

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.003	Mean	9.296
Maximum	110	Median	1.1
SD	20.09	CV	2.161
k hat (MLE)	0.235	k star (bias corrected MLE)	0.234
Theta hat (MLE)	39.62	Theta star (bias corrected MLE)	39.67
nu hat (MLE)	62.41	nu star (bias corrected)	62.33
MLE Mean (bias corrected)	9.296	MLE Sd (bias corrected)	19.2
		Adjusted Level of Significance (β)	0.0482
Approximate Chi Square Value (62.33, α)	45.17	Adjusted Chi Square Value (62.33, β)	45.01
95% Gamma Approximate UCL (use when n>=50)	12.83	95% Gamma Adjusted UCL (use when n<50)	12.87

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.092	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0973	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	9.331	Mean in Log Scale	-0.106
SD in Original Scale	20.07	SD in Log Scale	2.611
95% t UCL (assumes normality of ROS data)	12.21	95% Percentile Bootstrap UCL	12.31
95% BCA Bootstrap UCL	12.74	95% Bootstrap t UCL	13
95% H-UCL (Log ROS)	67.86		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.535	95% H-UCL (KM -Log)	14191
KM SD (logged)	4.207	95% Critical H Value (KM-Log)	6.128
KM Standard Error of Mean (logged)	0.374		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	9.363	Mean in Log Scale	-0.291
SD in Original Scale	20.06	SD in Log Scale	2.991
95% t UCL (Assumes normality)	12.24	95% H-Stat UCL	212.2

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	20.21

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

P-ISOPROPYLTOLUENE

General Statistics

Total Number of Observations	30	Number of Distinct Observations	30
Number of Detects	4	Number of Non-Detects	26
Number of Distinct Detects	4	Number of Distinct Non-Detects	26
Minimum Detect	0.114	Minimum Non-Detect	0.0453
Maximum Detect	0.374	Maximum Non-Detect	5.724
Variance Detects	0.0149	Percent Non-Detects	86.67%
Mean Detects	0.24	SD Detects	0.122
Median Detects	0.236	CV Detects	0.508
Skewness Detects	0.103	Kurtosis Detects	-3.907
Mean of Logged Detects	-1.535	SD of Logged Detects	0.553

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.928	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.236	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.102	Standard Error of Mean	0.0324
SD	0.104	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.157	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.155	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.199	95% KM Chebyshev UCL	0.243
97.5% KM Chebyshev UCL	0.305	99% KM Chebyshev UCL	0.425

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.319	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.659	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.265	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.396	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.757	k star (bias corrected MLE)	1.356
Theta hat (MLE)	0.0505	Theta star (bias corrected MLE)	0.177
nu hat (MLE)	38.06	nu star (bias corrected)	10.85
MLE Mean (bias corrected)	0.24	MLE Sd (bias corrected)	0.206

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.956	nu hat (KM)	57.37
Approximate Chi Square Value (57.37, α)	40.95	Adjusted Chi Square Value (57.37, β)	40.15
95% Gamma Approximate KM-UCL (use when n>=50)	0.143	95% Gamma Adjusted KM-UCL (use when n<50)	0.146

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0407
Maximum	0.374	Median	0.01
SD	0.0887	CV	2.18
k hat (MLE)	0.619	k star (bias corrected MLE)	0.579
Theta hat (MLE)	0.0657	Theta star (bias corrected MLE)	0.0703
nu hat (MLE)	37.13	nu star (bias corrected)	34.75
MLE Mean (bias corrected)	0.0407	MLE Sd (bias corrected)	0.0535
		Adjusted Level of Significance (β)	0.041
Approximate Chi Square Value (34.75, α)	22.26	Adjusted Chi Square Value (34.75, β)	21.69
95% Gamma Approximate UCL (use when n>=50)	0.0635	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.243	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0728	Mean in Log Scale	-2.873
SD in Original Scale	0.0779	SD in Log Scale	0.6
95% t UCL (assumes normality of ROS data)	0.097	95% Percentile Bootstrap UCL	0.0985
95% BCA Bootstrap UCL	0.109	95% Bootstrap t UCL	0.144
95% H-UCL (Log ROS)	0.0849		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.635	95% H-UCL (KM -Log)	0.129
KM SD (logged)	0.752	95% Critical H Value (KM-Log)	2.189
KM Standard Error of Mean (logged)	0.235		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.592	Mean in Log Scale	-1.564
SD in Original Scale	0.799	SD in Log Scale	1.651
95% t UCL (Assumes normality)	0.84	95% H-Stat UCL	2.312

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.157	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TETRACHLOROETHYLENE

General Statistics

Total Number of Observations	168	Number of Distinct Observations	76
Number of Detects	21	Number of Non-Detects	147
Number of Distinct Detects	21	Number of Distinct Non-Detects	55
Minimum Detect	0.0021	Minimum Non-Detect	0.001
Maximum Detect	19	Maximum Non-Detect	5.8
Variance Detects	17.94	Percent Non-Detects	87.5%
Mean Detects	2.03	SD Detects	4.235
Median Detects	0.65	CV Detects	2.086
Skewness Detects	3.551	Kurtosis Detects	13.98
Mean of Logged Detects	-1.389	SD of Logged Detects	2.735

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.509	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.358	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.265	Standard Error of Mean	0.128
SD	1.61	95% KM (BCA) UCL	0.513
95% KM (t) UCL	0.476	95% KM (Percentile Bootstrap) UCL	0.483
95% KM (z) UCL	0.475	95% KM Bootstrap t UCL	0.829
90% KM Chebyshev UCL	0.648	95% KM Chebyshev UCL	0.821
97.5% KM Chebyshev UCL	1.062	99% KM Chebyshev UCL	1.535

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.566	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.841	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.168	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.205	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.325	k star (bias corrected MLE)	0.31
Theta hat (MLE)	6.256	Theta star (bias corrected MLE)	6.551
nu hat (MLE)	13.63	nu star (bias corrected)	13.02
MLE Mean (bias corrected)	2.03	MLE Sd (bias corrected)	3.647

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0271	nu hat (KM)	9.112
Approximate Chi Square Value (9.11, α)	3.395	Adjusted Chi Square Value (9.11, β)	3.365
95% Gamma Approximate KM-UCL (use when n>=50)	0.712	95% Gamma Adjusted KM-UCL (use when n<50)	0.718

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0021	Mean	0.263
Maximum	19	Median	0.01
SD	1.612	CV	6.139
k hat (MLE)	0.248	k star (bias corrected MLE)	0.248
Theta hat (MLE)	1.058	Theta star (bias corrected MLE)	1.06
nu hat (MLE)	83.38	nu star (bias corrected)	83.22
MLE Mean (bias corrected)	0.263	MLE Sd (bias corrected)	0.528
		Adjusted Level of Significance (β)	0.0486
Approximate Chi Square Value (83.22, α)	63.2	Adjusted Chi Square Value (83.22, β)	63.05
95% Gamma Approximate UCL (use when n>=50)	0.346	95% Gamma Adjusted UCL (use when n<50)	0.347

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.906	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.198	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.255	Mean in Log Scale	-8.275
SD in Original Scale	1.613	SD in Log Scale	3.805
95% t UCL (assumes normality of ROS data)	0.461	95% Percentile Bootstrap UCL	0.481
95% BCA Bootstrap UCL	0.656	95% Bootstrap t UCL	0.854
95% H-UCL (Log ROS)	1.764		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.459	Mean in Log Scale	-2.811
SD in Original Scale	1.644	SD in Log Scale	2.353
95% t UCL (Assumes normality)	0.668	95% H-Stat UCL	1.852

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.476	95% GROS Approximate Gamma UCL	0.346
95% Approximate Gamma KM-UCL	0.712		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TOLUENE

General Statistics

Total Number of Observations	201	Number of Distinct Observations	140
Number of Detects	146	Number of Non-Detects	55
Number of Distinct Detects	129	Number of Distinct Non-Detects	15
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	2100	Maximum Non-Detect	2
Variance Detects	79946	Percent Non-Detects	27.36%
Mean Detects	121.4	SD Detects	282.7
Median Detects	6.236	CV Detects	2.329
Skewness Detects	3.936	Kurtosis Detects	19.57
Mean of Logged Detects	1.033	SD of Logged Detects	4.103

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.508	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.334	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0733	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	88.2	Standard Error of Mean	17.42
SD	246.2	95% KM (BCA) UCL	118.1
95% KM (t) UCL	117	95% KM (Percentile Bootstrap) UCL	119.1
95% KM (z) UCL	116.9	95% KM Bootstrap t UCL	125.7
90% KM Chebyshev UCL	140.5	95% KM Chebyshev UCL	164.1
97.5% KM Chebyshev UCL	197	99% KM Chebyshev UCL	261.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.017	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.923	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0882	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.0863	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.196	k star (bias corrected MLE)	0.197
Theta hat (MLE)	619.5	Theta star (bias corrected MLE)	617.8
nu hat (MLE)	57.23	nu star (bias corrected)	57.39
MLE Mean (bias corrected)	121.4	MLE Sd (bias corrected)	273.9

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.128	nu hat (KM)	51.6
Approximate Chi Square Value (51.60, α)	36.1	Adjusted Chi Square Value (51.60, β)	36.01
95% Gamma Approximate KM-UCL (use when n>=50)	126.1	95% Gamma Adjusted KM-UCL (use when n<50)	126.4

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	88.2
Maximum	2100	Median	0.34
SD	246.8	CV	2.798
k hat (MLE)	0.154	k star (bias corrected MLE)	0.155
Theta hat (MLE)	574.5	Theta star (bias corrected MLE)	570.7
nu hat (MLE)	61.72	nu star (bias corrected)	62.13
MLE Mean (bias corrected)	88.2	MLE Sd (bias corrected)	224.4
		Adjusted Level of Significance (β)	0.0488
Approximate Chi Square Value (62.13, α)	45	Adjusted Chi Square Value (62.13, β)	44.89
95% Gamma Approximate UCL (use when n>=50)	121.8	95% Gamma Adjusted UCL (use when n<50)	122.1

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.116	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0733	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	88.2	Mean in Log Scale	-0.951
SD in Original Scale	246.8	SD in Log Scale	4.959
95% t UCL (assumes normality of ROS data)	117	95% Percentile Bootstrap UCL	118
95% BCA Bootstrap UCL	128.8	95% Bootstrap t UCL	123.7
95% H-UCL (Log ROS)	925626		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	88.21	Mean in Log Scale	-0.389
SD in Original Scale	246.8	SD in Log Scale	4.358
95% t UCL (Assumes normality)	117	95% H-Stat UCL	57776

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 197

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRICHLOROETHYLENE

General Statistics

Total Number of Observations	160	Number of Distinct Observations	77
Number of Detects	34	Number of Non-Detects	126
Number of Distinct Detects	30	Number of Distinct Non-Detects	49
Minimum Detect	0.02	Minimum Non-Detect	0.001
Maximum Detect	1200	Maximum Non-Detect	7.691
Variance Detects	54614	Percent Non-Detects	78.75%
Mean Detects	67.33	SD Detects	233.7
Median Detects	1.25	CV Detects	3.471
Skewness Detects	4.213	Kurtosis Detects	18.39
Mean of Logged Detects	0.627	SD of Logged Detects	2.617

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.332	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.442	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.152	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	14.33	Standard Error of Mean	8.799
SD	109.6	95% KM (BCA) UCL	29.4
95% KM (t) UCL	28.89	95% KM (Percentile Bootstrap) UCL	31.65
95% KM (z) UCL	28.8	95% KM Bootstrap t UCL	195.5
90% KM Chebyshev UCL	40.72	95% KM Chebyshev UCL	52.68
97.5% KM Chebyshev UCL	69.28	99% KM Chebyshev UCL	101.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.926	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.904	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.293	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.167	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.205	k star (bias corrected MLE)	0.206
Theta hat (MLE)	329	Theta star (bias corrected MLE)	326.5
nu hat (MLE)	13.92	nu star (bias corrected)	14.02
MLE Mean (bias corrected)	67.33	MLE Sd (bias corrected)	148.3

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0171	nu hat (KM)	5.464
Approximate Chi Square Value (5.46, α)	1.372	Adjusted Chi Square Value (5.46, β)	1.354
95% Gamma Approximate KM-UCL (use when n>=50)	57.04	95% Gamma Adjusted KM-UCL (use when n<50)	57.81

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	14.32
Maximum	1200	Median	0.01
SD	110	CV	7.683
k hat (MLE)	0.128	k star (bias corrected MLE)	0.13
Theta hat (MLE)	112.1	Theta star (bias corrected MLE)	110.5
nu hat (MLE)	40.88	nu star (bias corrected)	41.45
MLE Mean (bias corrected)	14.32	MLE Sd (bias corrected)	39.78
		Adjusted Level of Significance (β)	0.0485
Approximate Chi Square Value (41.45, α)	27.69	Adjusted Chi Square Value (41.45, β)	27.59
95% Gamma Approximate UCL (use when n>=50)	21.43	95% Gamma Adjusted UCL (use when n<50)	21.51

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0947	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.152	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	14.31	Mean in Log Scale	-6.266
SD in Original Scale	110	SD in Log Scale	4.543
95% t UCL (assumes normality of ROS data)	28.7	95% Percentile Bootstrap UCL	30.68
95% BCA Bootstrap UCL	39.72	95% Bootstrap t UCL	82.63
95% H-UCL (Log ROS)	639.1		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.963	95% H-UCL (KM -Log)	7.834
KM SD (logged)	3.366	95% Critical H Value (KM-Log)	5.08
KM Standard Error of Mean (logged)	0.309		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	14.54	Mean in Log Scale	-2.265
SD in Original Scale	110	SD in Log Scale	2.873
95% t UCL (Assumes normality)	28.93	95% H-Stat UCL	17.65

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	69.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

XYLENES,TOTAL

General Statistics

Total Number of Observations	176	Number of Distinct Observations	123
Number of Detects	134	Number of Non-Detects	42
Number of Distinct Detects	111	Number of Distinct Non-Detects	16
Minimum Detect	0.002	Minimum Non-Detect	0.001
Maximum Detect	320	Maximum Non-Detect	2.551
Variance Detects	3834	Percent Non-Detects	23.86%
Mean Detects	33.72	SD Detects	61.92
Median Detects	6.949	CV Detects	1.836
Skewness Detects	2.684	Kurtosis Detects	7.549
Mean of Logged Detects	1.357	SD of Logged Detects	2.796

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.601	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.304	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0765	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	25.68	Standard Error of Mean	4.215
SD	55.71	95% KM (BCA) UCL	33.37
95% KM (t) UCL	32.65	95% KM (Percentile Bootstrap) UCL	32.94
95% KM (z) UCL	32.61	95% KM Bootstrap t UCL	33.79
90% KM Chebyshev UCL	38.32	95% KM Chebyshev UCL	44.05
97.5% KM Chebyshev UCL	52	99% KM Chebyshev UCL	67.62

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.123	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.864	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.109	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.0874	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.316	k star (bias corrected MLE)	0.314
Theta hat (MLE)	106.6	Theta star (bias corrected MLE)	107.3
nu hat (MLE)	84.79	nu star (bias corrected)	84.23
MLE Mean (bias corrected)	33.72	MLE Sd (bias corrected)	60.15

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.213	nu hat (KM)	74.8
Approximate Chi Square Value (74.80, α)	55.88	Adjusted Chi Square Value (74.80, β)	55.75
95% Gamma Approximate KM-UCL (use when n>=50)	34.37	95% Gamma Adjusted KM-UCL (use when n<50)	34.46

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	25.67
Maximum	320	Median	2.107
SD	55.87	CV	2.176
k hat (MLE)	0.219	k star (bias corrected MLE)	0.219
Theta hat (MLE)	117.2	Theta star (bias corrected MLE)	117.2
nu hat (MLE)	77.12	nu star (bias corrected)	77.14
MLE Mean (bias corrected)	25.67	MLE Sd (bias corrected)	54.84
		Adjusted Level of Significance (β)	0.0486
Approximate Chi Square Value (77.14, α)	57.91	Adjusted Chi Square Value (77.14, β)	57.77
95% Gamma Approximate UCL (use when n>=50)	34.2	95% Gamma Adjusted UCL (use when n<50)	34.28

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.1	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0765	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	25.68	Mean in Log Scale	0.0824
SD in Original Scale	55.86	SD in Log Scale	3.417
95% t UCL (assumes normality of ROS data)	32.64	95% Percentile Bootstrap UCL	32.78
95% BCA Bootstrap UCL	33.54	95% Bootstrap t UCL	33.55
95% H-UCL (Log ROS)	1337		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	25.7	Mean in Log Scale	0.133
SD in Original Scale	55.86	SD in Log Scale	3.481
95% t UCL (Assumes normality)	32.66	95% H-Stat UCL	1839

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	52

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)ANTHRACENE

General Statistics

Total Number of Observations	31	Number of Distinct Observations	13
Number of Detects	3	Number of Non-Detects	28
Number of Distinct Detects	3	Number of Distinct Non-Detects	11
Minimum Detect	0.043	Minimum Non-Detect	0.004
Maximum Detect	0.29	Maximum Non-Detect	0.4
Variance Detects	0.0194	Percent Non-Detects	90.32%
Mean Detects	0.129	SD Detects	0.139
Median Detects	0.055	CV Detects	1.077
Skewness Detects	1.718	Kurtosis Detects	N/A
Mean of Logged Detects	-2.428	SD of Logged Detects	1.038

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.786	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.37	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0168	Standard Error of Mean	0.0117
SD	0.0521	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0366	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0359	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0518	95% KM Chebyshev UCL	0.0676
97.5% KM Chebyshev UCL	0.0896	99% KM Chebyshev UCL	0.133

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.45	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0892	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	8.699	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.104	nu hat (KM)	6.42
		Adjusted Level of Significance (β)	0.0413
Approximate Chi Square Value (6.42, α)	1.858	Adjusted Chi Square Value (6.42, β)	1.725
95% Gamma Approximate KM-UCL (use when n>=50)	0.0579	95% Gamma Adjusted KM-UCL (use when n<50)	0.0624

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.845	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.342	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0137	Mean in Log Scale	-6.936
SD in Original Scale	0.0527	SD in Log Scale	2.016
95% t UCL (assumes normality of ROS data)	0.0298	95% Percentile Bootstrap UCL	0.0312
95% BCA Bootstrap UCL	0.0462	95% Bootstrap t UCL	0.322
95% H-UCL (Log ROS)	0.0304		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.2	95% H-UCL (KM -Log)	0.0137
KM SD (logged)	0.978	95% Critical H Value (KM-Log)	2.397
KM Standard Error of Mean (logged)	0.222		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0375	Mean in Log Scale	-3.804
SD in Original Scale	0.0584	SD in Log Scale	0.961
95% t UCL (Assumes normality)	0.0554	95% H-Stat UCL	0.0536

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0366	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	30	Number of Distinct Observations	15
Number of Detects	4	Number of Non-Detects	26
Number of Distinct Detects	4	Number of Distinct Non-Detects	11
Minimum Detect	0.048	Minimum Non-Detect	0.004
Maximum Detect	0.25	Maximum Non-Detect	0.4
Variance Detects	0.00792	Percent Non-Detects	86.67%
Mean Detects	0.122	SD Detects	0.089
Median Detects	0.095	CV Detects	0.73
Skewness Detects	1.528	Kurtosis Detects	2.514
Mean of Logged Detects	-2.289	SD of Logged Detects	0.692

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.871	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.304	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0209	Standard Error of Mean	0.0108
SD	0.0501	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0393	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0387	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0534	95% KM Chebyshev UCL	0.0681
97.5% KM Chebyshev UCL	0.0885	99% KM Chebyshev UCL	0.129

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.278	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.66	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.239	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.397	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.855	k star (bias corrected MLE)	0.88
Theta hat (MLE)	0.0427	Theta star (bias corrected MLE)	0.139
nu hat (MLE)	22.84	nu star (bias corrected)	7.044
MLE Mean (bias corrected)	0.122	MLE Sd (bias corrected)	0.13

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.174	nu hat (KM)	10.44
Approximate Chi Square Value (10.44, α)	4.216	Adjusted Chi Square Value (10.44, β)	3.989
95% Gamma Approximate KM-UCL (use when n>=50)	0.0517	95% Gamma Adjusted KM-UCL (use when n<50)	0.0546

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0249
Maximum	0.25	Median	0.01
SD	0.0482	CV	1.931
k hat (MLE)	0.959	k star (bias corrected MLE)	0.885
Theta hat (MLE)	0.026	Theta star (bias corrected MLE)	0.0282
nu hat (MLE)	57.55	nu star (bias corrected)	53.13
MLE Mean (bias corrected)	0.0249	MLE Sd (bias corrected)	0.0265
		Adjusted Level of Significance (β)	0.041
Approximate Chi Square Value (53.13, α)	37.38	Adjusted Chi Square Value (53.13, β)	36.62
95% Gamma Approximate UCL (use when n>=50)	0.0354	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.982	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.203	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0226	Mean in Log Scale	-4.803
SD in Original Scale	0.0492	SD in Log Scale	1.265
95% t UCL (assumes normality of ROS data)	0.0379	95% Percentile Bootstrap UCL	0.038
95% BCA Bootstrap UCL	0.0485	95% Bootstrap t UCL	0.0629
95% H-UCL (Log ROS)	0.0355		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.052	95% H-UCL (KM -Log)	0.0222
KM SD (logged)	1.158	95% Critical H Value (KM-Log)	2.682
KM Standard Error of Mean (logged)	0.254		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0408	Mean in Log Scale	-3.732
SD in Original Scale	0.0556	SD in Log Scale	1.022
95% t UCL (Assumes normality)	0.0581	95% H-Stat UCL	0.0649

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0393	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	30	Number of Distinct Observations	16
Number of Detects	6	Number of Non-Detects	24
Number of Distinct Detects	6	Number of Distinct Non-Detects	11
Minimum Detect	0.044	Minimum Non-Detect	0.004
Maximum Detect	0.34	Maximum Non-Detect	0.4
Variance Detects	0.0115	Percent Non-Detects	80%
Mean Detects	0.126	SD Detects	0.107
Median Detects	0.087	CV Detects	0.851
Skewness Detects	2.17	Kurtosis Detects	4.985
Mean of Logged Detects	-2.289	SD of Logged Detects	0.678

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.708	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.357	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0302	Standard Error of Mean	0.0137
SD	0.0669	95% KM (BCA) UCL	0.0622
95% KM (t) UCL	0.0535	95% KM (Percentile Bootstrap) UCL	0.0573
95% KM (z) UCL	0.0528	95% KM Bootstrap t UCL	0.0604
90% KM Chebyshev UCL	0.0713	95% KM Chebyshev UCL	0.09
97.5% KM Chebyshev UCL	0.116	99% KM Chebyshev UCL	0.167

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.603	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.703	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.279	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.335	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.426	k star (bias corrected MLE)	1.324
Theta hat (MLE)	0.0521	Theta star (bias corrected MLE)	0.0954
nu hat (MLE)	29.11	nu star (bias corrected)	15.89
MLE Mean (bias corrected)	0.126	MLE Sd (bias corrected)	0.11

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.204	nu hat (KM)	12.25
Approximate Chi Square Value (12.25, α)	5.392	Adjusted Chi Square Value (12.25, β)	5.13
95% Gamma Approximate KM-UCL (use when n>=50)	0.0687	95% Gamma Adjusted KM-UCL (use when n<50)	0.0722

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0333
Maximum	0.34	Median	0.01
SD	0.065	CV	1.955
k hat (MLE)	0.803	k star (bias corrected MLE)	0.745
Theta hat (MLE)	0.0414	Theta star (bias corrected MLE)	0.0447
nu hat (MLE)	48.18	nu star (bias corrected)	44.7
MLE Mean (bias corrected)	0.0333	MLE Sd (bias corrected)	0.0385
		Adjusted Level of Significance (β)	0.041
Approximate Chi Square Value (44.70, α)	30.36	Adjusted Chi Square Value (44.70, β)	29.68
95% Gamma Approximate UCL (use when n>=50)	0.049	95% Gamma Adjusted UCL (use when n<50)	0.0501

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.236	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.035	Mean in Log Scale	-4.114
SD in Original Scale	0.0647	SD in Log Scale	1.111
95% t UCL (assumes normality of ROS data)	0.0551	95% Percentile Bootstrap UCL	0.0567
95% BCA Bootstrap UCL	0.0683	95% Bootstrap t UCL	0.0799
95% H-UCL (Log ROS)	0.052		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.817	95% H-UCL (KM -Log)	0.0431
KM SD (logged)	1.36	95% Critical H Value (KM-Log)	2.962
KM Standard Error of Mean (logged)	0.284		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0485	Mean in Log Scale	-3.62
SD in Original Scale	0.0691	SD in Log Scale	1.096
95% t UCL (Assumes normality)	0.07	95% H-Stat UCL	0.0828

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0535	95% KM (Percentile Bootstrap) UCL	0.0573

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	30	Number of Distinct Observations	23
Number of Detects	14	Number of Non-Detects	16
Number of Distinct Detects	14	Number of Distinct Non-Detects	9
Minimum Detect	0.045	Minimum Non-Detect	0.018
Maximum Detect	500	Maximum Non-Detect	0.69
Variance Detects	17753	Percent Non-Detects	53.33%
Mean Detects	45.44	SD Detects	133.2
Median Detects	1.95	CV Detects	2.932
Skewness Detects	3.533	Kurtosis Detects	12.76
Mean of Logged Detects	0.796	SD of Logged Detects	2.586

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.392	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.433	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	21.22	Standard Error of Mean	17.16
SD	90.59	95% KM (BCA) UCL	53.61
95% KM (t) UCL	50.38	95% KM (Percentile Bootstrap) UCL	53.8
95% KM (z) UCL	49.45	95% KM Bootstrap t UCL	511.3
90% KM Chebyshev UCL	72.71	95% KM Chebyshev UCL	96.03
97.5% KM Chebyshev UCL	128.4	99% KM Chebyshev UCL	192

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.35	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.862	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.305	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.251	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.237	k star (bias corrected MLE)	0.234
Theta hat (MLE)	191.6	Theta star (bias corrected MLE)	194.2
nu hat (MLE)	6.64	nu star (bias corrected)	6.55
MLE Mean (bias corrected)	45.44	MLE Sd (bias corrected)	93.95

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0549	nu hat (KM)	3.292
Approximate Chi Square Value (3.29, α)	0.464	Adjusted Chi Square Value (3.29, β)	0.412
95% Gamma Approximate KM-UCL (use when n>=50)	150.6	95% Gamma Adjusted KM-UCL (use when n<50)	169.7

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	21.21
Maximum	500	Median	0.01
SD	92.14	CV	4.344
k hat (MLE)	0.15	k star (bias corrected MLE)	0.157
Theta hat (MLE)	141.8	Theta star (bias corrected MLE)	135.2
nu hat (MLE)	8.976	nu star (bias corrected)	9.412
MLE Mean (bias corrected)	21.21	MLE Sd (bias corrected)	53.55
		Adjusted Level of Significance (β)	0.041
Approximate Chi Square Value (9.41, α)	3.578	Adjusted Chi Square Value (9.41, β)	3.372
95% Gamma Approximate UCL (use when n>=50)	55.8	95% Gamma Adjusted UCL (use when n<50)	59.2

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.965	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.144	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	21.21	Mean in Log Scale	-2.918
SD in Original Scale	92.14	SD in Log Scale	4.06
95% t UCL (assumes normality of ROS data)	49.79	95% Percentile Bootstrap UCL	53.94
95% BCA Bootstrap UCL	77.3	95% Bootstrap t UCL	530.1
95% H-UCL (Log ROS)	54197		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.735	95% H-UCL (KM -Log)	249.1
KM SD (logged)	2.928	95% Critical H Value (KM-Log)	5.459
KM Standard Error of Mean (logged)	0.557		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	21.23	Mean in Log Scale	-1.6
SD in Original Scale	92.13	SD in Log Scale	2.926
95% t UCL (Assumes normality)	49.81	95% H-Stat UCL	282.9

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL 192

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NAPHTHALENE

General Statistics

Total Number of Observations	30	Number of Distinct Observations	16
Number of Detects	6	Number of Non-Detects	24
Number of Distinct Detects	6	Number of Distinct Non-Detects	10
Minimum Detect	0.091	Minimum Non-Detect	0.004
Maximum Detect	5.3	Maximum Non-Detect	0.14
Variance Detects	4.229	Percent Non-Detects	80%
Mean Detects	1.472	SD Detects	2.057
Median Detects	0.52	CV Detects	1.397
Skewness Detects	1.695	Kurtosis Detects	2.563
Mean of Logged Detects	-0.664	SD of Logged Detects	1.703

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.765	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.287	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.298	Standard Error of Mean	0.205
SD	1.024	95% KM (BCA) UCL	0.631
95% KM (t) UCL	0.646	95% KM (Percentile Bootstrap) UCL	0.636
95% KM (z) UCL	0.635	95% KM Bootstrap t UCL	1.385
90% KM Chebyshev UCL	0.912	95% KM Chebyshev UCL	1.191
97.5% KM Chebyshev UCL	1.577	99% KM Chebyshev UCL	2.336

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.389	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.731	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.254	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.347	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.59	k star (bias corrected MLE)	0.406
Theta hat (MLE)	2.496	Theta star (bias corrected MLE)	3.625
nu hat (MLE)	7.077	nu star (bias corrected)	4.872
MLE Mean (bias corrected)	1.472	MLE Sd (bias corrected)	2.31

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0845	nu hat (KM)	5.071
Approximate Chi Square Value (5.07, α)	1.185	Adjusted Chi Square Value (5.07, β)	1.082
95% Gamma Approximate KM-UCL (use when n>=50)	1.274	95% Gamma Adjusted KM-UCL (use when n<50)	1.396

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.302
Maximum	5.3	Median	0.01
SD	1.041	CV	3.442
k hat (MLE)	0.268	k star (bias corrected MLE)	0.263
Theta hat (MLE)	1.128	Theta star (bias corrected MLE)	1.148
nu hat (MLE)	16.08	nu star (bias corrected)	15.8
MLE Mean (bias corrected)	0.302	MLE Sd (bias corrected)	0.589
		Adjusted Level of Significance (β)	0.041
Approximate Chi Square Value (15.80, α)	7.825	Adjusted Chi Square Value (15.80, β)	7.501
95% Gamma Approximate UCL (use when n>=50)	0.611	95% Gamma Adjusted UCL (use when n<50)	0.637

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.211	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.296	Mean in Log Scale	-6.395
SD in Original Scale	1.043	SD in Log Scale	3.449
95% t UCL (assumes normality of ROS data)	0.619	95% Percentile Bootstrap UCL	0.649
95% BCA Bootstrap UCL	0.901	95% Bootstrap t UCL	2.061
95% H-UCL (Log ROS)	37.12		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.541	95% H-UCL (KM -Log)	0.425
KM SD (logged)	2.066	95% Critical H Value (KM-Log)	4.041
KM Standard Error of Mean (logged)	0.414		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.31	Mean in Log Scale	-3.463
SD in Original Scale	1.039	SD in Log Scale	1.72
95% t UCL (Assumes normality)	0.632	95% H-Stat UCL	0.42

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.646	95% KM (Percentile Bootstrap) UCL	0.636

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	31	Number of Distinct Observations	31
		Number of Missing Observations	0
Minimum	2.1	Mean	2985
Maximum	11600	Median	2580
SD	3027	Std. Error of Mean	543.6
Coefficient of Variation	1.014	Skewness	1.112

Normal GOF Test

Shapiro Wilk Test Statistic	0.873	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.162	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.159	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3908	95% Adjusted-CLT UCL (Chen-1995)	3995
		95% Modified-t UCL (Johnson-1978)	3926

Gamma GOF Test

A-D Test Statistic	1.614	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.824	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.178	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.168	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.434	k star (bias corrected MLE)	0.414
Theta hat (MLE)	6877	Theta star (bias corrected MLE)	7218
nu hat (MLE)	26.91	nu star (bias corrected)	25.64
MLE Mean (bias corrected)	2985	MLE Sd (bias corrected)	4642
		Approximate Chi Square Value (0.05)	15.1
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	14.65

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	5068	95% Adjusted Gamma UCL (use when n<50)	5223

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.765	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.253	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.159	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	0.742	Mean of logged Data	6.505
Maximum of Logged Data	9.359	SD of logged Data	2.814

Assuming Lognormal Distribution

95% H-UCL	479423	90% Chebyshev (MVUE) UCL	66849
95% Chebyshev (MVUE) UCL	87364	97.5% Chebyshev (MVUE) UCL	115838
99% Chebyshev (MVUE) UCL	171770		

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	3879	95% Jackknife UCL	3908
95% Standard Bootstrap UCL	3881	95% Bootstrap-t UCL	4059
95% Hall's Bootstrap UCL	4020	95% Percentile Bootstrap UCL	3861
95% BCA Bootstrap UCL	4037		
90% Chebyshev(Mean, Sd) UCL	4616	95% Chebyshev(Mean, Sd) UCL	5355
97.5% Chebyshev(Mean, Sd) UCL	6380	99% Chebyshev(Mean, Sd) UCL	8394

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	6380

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ANTIMONY

General Statistics

Total Number of Observations	33	Number of Distinct Observations	30
Number of Detects	8	Number of Non-Detects	25
Number of Distinct Detects	8	Number of Distinct Non-Detects	22
Minimum Detect	1.01	Minimum Non-Detect	0.0063
Maximum Detect	4.03	Maximum Non-Detect	5.97
Variance Detects	1.074	Percent Non-Detects	75.76%
Mean Detects	2.018	SD Detects	1.037
Median Detects	1.505	CV Detects	0.514
Skewness Detects	1.274	Kurtosis Detects	0.758
Mean of Logged Detects	0.601	SD of Logged Detects	0.466

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.842	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.281	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.534	Standard Error of Mean	0.192
SD	0.996	95% KM (BCA) UCL	0.832
95% KM (t) UCL	0.859	95% KM (Percentile Bootstrap) UCL	0.837
95% KM (z) UCL	0.85	95% KM Bootstrap t UCL	0.873
90% KM Chebyshev UCL	1.11	95% KM Chebyshev UCL	1.371
97.5% KM Chebyshev UCL	1.734	99% KM Chebyshev UCL	2.446

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.513	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.719	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.263	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.295	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	5.108	k star (bias corrected MLE)	3.276
Theta hat (MLE)	0.395	Theta star (bias corrected MLE)	0.616
nu hat (MLE)	81.73	nu star (bias corrected)	52.42
MLE Mean (bias corrected)	2.018	MLE Sd (bias corrected)	1.115

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.287	nu hat (KM)	18.94
Approximate Chi Square Value (18.94, α)	10.07	Adjusted Chi Square Value (18.94, β)	9.739
95% Gamma Approximate KM-UCL (use when n>=50)	1.004	95% Gamma Adjusted KM-UCL (use when n<50)	1.038

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.497
Maximum	4.03	Median	0.01
SD	0.999	CV	2.012
k hat (MLE)	0.266	k star (bias corrected MLE)	0.262
Theta hat (MLE)	1.867	Theta star (bias corrected MLE)	1.895
nu hat (MLE)	17.56	nu star (bias corrected)	17.3
MLE Mean (bias corrected)	0.497	MLE Sd (bias corrected)	0.97
		Adjusted Level of Significance (β)	0.0419
Approximate Chi Square Value (17.30, α)	8.883	Adjusted Chi Square Value (17.30, β)	8.573
95% Gamma Approximate UCL (use when n>=50)	0.967	95% Gamma Adjusted UCL (use when n<50)	1.002

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.915	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.236	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.739	Mean in Log Scale	-0.71
SD in Original Scale	0.882	SD in Log Scale	0.805
95% t UCL (assumes normality of ROS data)	0.999	95% Percentile Bootstrap UCL	1.011
95% BCA Bootstrap UCL	1.066	95% Bootstrap t UCL	1.148
95% H-UCL (Log ROS)	0.932		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.526	95% H-UCL (KM -Log)	5.572
KM SD (logged)	2.517	95% Critical H Value (KM-Log)	4.665
KM Standard Error of Mean (logged)	0.514		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.844	Mean in Log Scale	-1.387
SD in Original Scale	0.97	SD in Log Scale	2.361
95% t UCL (Assumes normality)	1.13	95% H-Stat UCL	25.65

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.859	95% KM (Percentile Bootstrap) UCL	0.837

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	40	Number of Distinct Observations	37
Number of Detects	28	Number of Non-Detects	12
Number of Distinct Detects	27	Number of Distinct Non-Detects	10
Minimum Detect	0.0019	Minimum Non-Detect	0.0011
Maximum Detect	32.8	Maximum Non-Detect	5.67
Variance Detects	42.53	Percent Non-Detects	30%
Mean Detects	3.781	SD Detects	6.522
Median Detects	1.95	CV Detects	1.725
Skewness Detects	3.73	Kurtosis Detects	15.38
Mean of Logged Detects	-0.0611	SD of Logged Detects	2.666

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.522	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.311	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.747	Standard Error of Mean	0.903
SD	5.598	95% KM (BCA) UCL	4.359
95% KM (t) UCL	4.269	95% KM (Percentile Bootstrap) UCL	4.377
95% KM (z) UCL	4.232	95% KM Bootstrap t UCL	6.931
90% KM Chebyshev UCL	5.456	95% KM Chebyshev UCL	6.684
97.5% KM Chebyshev UCL	8.387	99% KM Chebyshev UCL	11.73

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.616	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.819	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.206	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.176	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.462	k star (bias corrected MLE)	0.437
Theta hat (MLE)	8.18	Theta star (bias corrected MLE)	8.662
nu hat (MLE)	25.89	nu star (bias corrected)	24.45
MLE Mean (bias corrected)	3.781	MLE Sd (bias corrected)	5.723

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.241	nu hat (KM)	19.26
Approximate Chi Square Value (19.26, α)	10.3	Adjusted Chi Square Value (19.26, β)	10.06
95% Gamma Approximate KM-UCL (use when n>=50)	5.133	95% Gamma Adjusted KM-UCL (use when n<50)	5.258

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0019	Mean	2.65
Maximum	32.8	Median	1.19
SD	5.702	CV	2.152
k hat (MLE)	0.289	k star (bias corrected MLE)	0.284
Theta hat (MLE)	9.163	Theta star (bias corrected MLE)	9.325
nu hat (MLE)	23.14	nu star (bias corrected)	22.73
MLE Mean (bias corrected)	2.65	MLE Sd (bias corrected)	4.971
		Adjusted Level of Significance (β)	0.044
Approximate Chi Square Value (22.73, α)	12.89	Adjusted Chi Square Value (22.73, β)	12.61
95% Gamma Approximate UCL (use when n>=50)	4.673	95% Gamma Adjusted UCL (use when n<50)	4.777

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.717	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.309	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.662	Mean in Log Scale	-1.129
SD in Original Scale	5.696	SD in Log Scale	2.85
95% t UCL (assumes normality of ROS data)	4.179	95% Percentile Bootstrap UCL	4.259
95% BCA Bootstrap UCL	5.37	95% Bootstrap t UCL	6.559
95% H-UCL (Log ROS)	191.4		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.831	Mean in Log Scale	-0.689
SD in Original Scale	5.636	SD in Log Scale	2.966
95% t UCL (Assumes normality)	4.332	95% H-Stat UCL	499.3

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	11.73

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT

General Statistics

Total Number of Observations	31	Number of Distinct Observations	31
Number of Detects	16	Number of Non-Detects	15
Number of Distinct Detects	16	Number of Distinct Non-Detects	15
Minimum Detect	0.0065	Minimum Non-Detect	0.0053
Maximum Detect	4.4	Maximum Non-Detect	0.237
Variance Detects	1.381	Percent Non-Detects	48.39%
Mean Detects	1.3	SD Detects	1.175
Median Detects	1.084	CV Detects	0.904
Skewness Detects	1.397	Kurtosis Detects	1.992
Mean of Logged Detects	-0.324	SD of Logged Detects	1.519

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.875	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.192	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.222	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.673	Standard Error of Mean	0.193
SD	1.042	95% KM (BCA) UCL	0.997
95% KM (t) UCL	1.002	95% KM (Percentile Bootstrap) UCL	0.996
95% KM (z) UCL	0.991	95% KM Bootstrap t UCL	1.145
90% KM Chebyshev UCL	1.254	95% KM Chebyshev UCL	1.516
97.5% KM Chebyshev UCL	1.881	99% KM Chebyshev UCL	2.597

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.25	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.764	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.118	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.221	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.986	k star (bias corrected MLE)	0.843
Theta hat (MLE)	1.318	Theta star (bias corrected MLE)	1.542
nu hat (MLE)	31.55	nu star (bias corrected)	26.97
MLE Mean (bias corrected)	1.3	MLE Sd (bias corrected)	1.416

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.417	nu hat (KM)	25.87
Approximate Chi Square Value (25.87, α)	15.28	Adjusted Chi Square Value (25.87, β)	14.83
95% Gamma Approximate KM-UCL (use when n>=50)	1.14	95% Gamma Adjusted KM-UCL (use when n<50)	1.175

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0065	Mean	0.676
Maximum	4.4	Median	0.01
SD	1.058	CV	1.566
k hat (MLE)	0.338	k star (bias corrected MLE)	0.326
Theta hat (MLE)	2.001	Theta star (bias corrected MLE)	2.07
nu hat (MLE)	20.93	nu star (bias corrected)	20.24
MLE Mean (bias corrected)	0.676	MLE Sd (bias corrected)	1.183
		Adjusted Level of Significance (β)	0.0413
Approximate Chi Square Value (20.24, α)	11.03	Adjusted Chi Square Value (20.24, β)	10.65
95% Gamma Approximate UCL (use when n>=50)	1.24	95% Gamma Adjusted UCL (use when n<50)	1.284

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.814	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.183	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.222	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.684	Mean in Log Scale	-1.913
SD in Original Scale	1.053	SD in Log Scale	1.986
95% t UCL (assumes normality of ROS data)	1.005	95% Percentile Bootstrap UCL	0.991
95% BCA Bootstrap UCL	1.019	95% Bootstrap t UCL	1.159
95% H-UCL (Log ROS)	4.195		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.694	95% H-UCL (KM -Log)	25.08
KM SD (logged)	2.666	95% Critical H Value (KM-Log)	4.852
KM Standard Error of Mean (logged)	0.495		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.704	Mean in Log Scale	-1.94
SD in Original Scale	1.041	SD in Log Scale	2.38
95% t UCL (Assumes normality)	1.021	95% H-Stat UCL	16.48

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.002	95% KM (Percentile Bootstrap) UCL	0.996

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	41	Number of Distinct Observations	41
		Number of Missing Observations	0
Minimum	0.003	Mean	57.86
Maximum	1310	Median	4.5
SD	204	Std. Error of Mean	31.85
Coefficient of Variation	3.525	Skewness	6.069

Normal GOF Test

Shapiro Wilk Test Statistic	0.283	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.941	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.388	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.138	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	111.5	95% Adjusted-CLT UCL (Chen-1995)	142.5
		95% Modified-t UCL (Johnson-1978)	116.5

Gamma GOF Test

A-D Test Statistic	0.977	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.879	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.15	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.151	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.26	k star (bias corrected MLE)	0.257
Theta hat (MLE)	222.9	Theta star (bias corrected MLE)	225.3
nu hat (MLE)	21.28	nu star (bias corrected)	21.06
MLE Mean (bias corrected)	57.86	MLE Sd (bias corrected)	114.2
		Approximate Chi Square Value (0.05)	11.64
Adjusted Level of Significance	0.0441	Adjusted Chi Square Value	11.38

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	104.7	95% Adjusted Gamma UCL (use when n<50)	107.1

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.941	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0985	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.138	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-5.809	Mean of logged Data	1.338
Maximum of Logged Data	7.178	SD of logged Data	3.054

Assuming Lognormal Distribution

95% H-UCL	4974	90% Chebyshev (MVUE) UCL	765.6
95% Chebyshev (MVUE) UCL	1002	97.5% Chebyshev (MVUE) UCL	1330
99% Chebyshev (MVUE) UCL	1975		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	110.3	95% Jackknife UCL	111.5
95% Standard Bootstrap UCL	111.1	95% Bootstrap-t UCL	285.2
95% Hall's Bootstrap UCL	300.2	95% Percentile Bootstrap UCL	120
95% BCA Bootstrap UCL	159		
90% Chebyshev(Mean, Sd) UCL	153.4	95% Chebyshev(Mean, Sd) UCL	196.7
97.5% Chebyshev(Mean, Sd) UCL	256.8	99% Chebyshev(Mean, Sd) UCL	374.8

Suggested UCL to Use

95% Adjusted Gamma UCL	107.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MERCURY

General Statistics

Total Number of Observations	32	Number of Distinct Observations	27
Number of Detects	9	Number of Non-Detects	23
Number of Distinct Detects	9	Number of Distinct Non-Detects	18
Minimum Detect	0.0178	Minimum Non-Detect	9.1000E-5
Maximum Detect	1.2	Maximum Non-Detect	0.0144
Variance Detects	0.194	Percent Non-Detects	71.88%
Mean Detects	0.305	SD Detects	0.44
Median Detects	0.0733	CV Detects	1.444
Skewness Detects	1.554	Kurtosis Detects	1.105
Mean of Logged Detects	-2.274	SD of Logged Detects	1.617

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.712	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0858	Standard Error of Mean	0.0486
SD	0.259	95% KM (BCA) UCL	0.176
95% KM (t) UCL	0.168	95% KM (Percentile Bootstrap) UCL	0.169
95% KM (z) UCL	0.166	95% KM Bootstrap t UCL	0.372
90% KM Chebyshev UCL	0.232	95% KM Chebyshev UCL	0.298
97.5% KM Chebyshev UCL	0.39	99% KM Chebyshev UCL	0.57

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.601	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.765	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.212	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.293	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.573	k star (bias corrected MLE)	0.456
Theta hat (MLE)	0.533	Theta star (bias corrected MLE)	0.669
nu hat (MLE)	10.31	nu star (bias corrected)	8.205
MLE Mean (bias corrected)	0.305	MLE Sd (bias corrected)	0.452

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.11	nu hat (KM)	7.01
Approximate Chi Square Value (7.01, α)	2.176	Adjusted Chi Square Value (7.01, β)	2.035
95% Gamma Approximate KM-UCL (use when n>=50)	0.277	95% Gamma Adjusted KM-UCL (use when n<50)	0.296

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.093
Maximum	1.2	Median	0.01
SD	0.261	CV	2.809
k hat (MLE)	0.416	k star (bias corrected MLE)	0.397
Theta hat (MLE)	0.224	Theta star (bias corrected MLE)	0.234
nu hat (MLE)	26.59	nu star (bias corrected)	25.43
MLE Mean (bias corrected)	0.093	MLE Sd (bias corrected)	0.147
		Adjusted Level of Significance (β)	0.0416
Approximate Chi Square Value (25.43, α)	14.94	Adjusted Chi Square Value (25.43, β)	14.51
95% Gamma Approximate UCL (use when n>=50)	0.158	95% Gamma Adjusted UCL (use when n<50)	0.163

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.167	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.086	Mean in Log Scale	-6.521
SD in Original Scale	0.263	SD in Log Scale	2.912
95% t UCL (assumes normality of ROS data)	0.165	95% Percentile Bootstrap UCL	0.169
95% BCA Bootstrap UCL	0.203	95% Bootstrap t UCL	0.367
95% H-UCL (Log ROS)	1.616		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.327	95% H-UCL (KM -Log)	4.147
KM SD (logged)	3.263	95% Critical H Value (KM-Log)	5.847
KM Standard Error of Mean (logged)	0.612		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0888	Mean in Log Scale	-5.37
SD in Original Scale	0.263	SD in Log Scale	2.856
95% t UCL (Assumes normality)	0.168	95% H-Stat UCL	3.93

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.168	95% GROS Adjusted Gamma UCL	0.163
95% Adjusted Gamma KM-UCL	0.296		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

THALLIUM

General Statistics

Total Number of Observations	31	Number of Distinct Observations	22
Number of Detects	6	Number of Non-Detects	25
Number of Distinct Detects	6	Number of Distinct Non-Detects	16
Minimum Detect	0.461	Minimum Non-Detect	0.0011
Maximum Detect	1.32	Maximum Non-Detect	8.66
Variance Detects	0.109	Percent Non-Detects	80.65%
Mean Detects	1.016	SD Detects	0.33
Median Detects	1.115	CV Detects	0.325
Skewness Detects	-1.091	Kurtosis Detects	0.325
Mean of Logged Detects	-0.0427	SD of Logged Detects	0.402

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.881	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.279	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.407	Standard Error of Mean	0.151
SD	0.532	95% KM (BCA) UCL	0.655
95% KM (t) UCL	0.662	95% KM (Percentile Bootstrap) UCL	0.662
95% KM (z) UCL	0.655	95% KM Bootstrap t UCL	0.59
90% KM Chebyshev UCL	0.859	95% KM Chebyshev UCL	1.063
97.5% KM Chebyshev UCL	1.347	99% KM Chebyshev UCL	1.905

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.535	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.698	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.314	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.333	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.745	k star (bias corrected MLE)	4.483
Theta hat (MLE)	0.116	Theta star (bias corrected MLE)	0.227
nu hat (MLE)	104.9	nu star (bias corrected)	53.8
MLE Mean (bias corrected)	1.016	MLE Sd (bias corrected)	0.48

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.584	nu hat (KM)	36.23
Approximate Chi Square Value (36.23, α)	23.45	Adjusted Chi Square Value (36.23, β)	22.88
95% Gamma Approximate KM-UCL (use when n>=50)	0.629	95% Gamma Adjusted KM-UCL (use when n<50)	0.644

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs
GROS may not be used when kstar of detected data is small such as < 0.1
For such situations, GROS method tends to yield inflated values of UCLs and BTVs
For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.504
Maximum	1.32	Median	0.47
SD	0.342	CV	0.678
k hat (MLE)	1.755	k star (bias corrected MLE)	1.606
Theta hat (MLE)	0.287	Theta star (bias corrected MLE)	0.314
nu hat (MLE)	108.8	nu star (bias corrected)	99.6
MLE Mean (bias corrected)	0.504	MLE Sd (bias corrected)	0.397
		Adjusted Level of Significance (β)	0.0413
Approximate Chi Square Value (99.60, α)	77.58	Adjusted Chi Square Value (99.60, β)	76.5
95% Gamma Approximate UCL (use when n>=50)	0.647	95% Gamma Adjusted UCL (use when n<50)	0.656

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.82	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.309	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.544	Mean in Log Scale	-0.728
SD in Original Scale	0.297	SD in Log Scale	0.481
95% t UCL (assumes normality of ROS data)	0.634	95% Percentile Bootstrap UCL	0.632
95% BCA Bootstrap UCL	0.65	95% Bootstrap t UCL	0.661
95% H-UCL (Log ROS)	0.641		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.105	95% H-UCL (KM -Log)	150.2
KM SD (logged)	3.325	95% Critical H Value (KM-Log)	5.914
KM Standard Error of Mean (logged)	0.94		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.758	Mean in Log Scale	-1.837
SD in Original Scale	0.785	SD in Log Scale	3.141
95% t UCL (Assumes normality)	0.998	95% H-Stat UCL	552.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.662	95% KM (Percentile Bootstrap) UCL	0.662

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	29	Number of Distinct Observations	27
		Number of Missing Observations	0
Minimum	0.017	Mean	32.33
Maximum	304	Median	11.2
SD	64.28	Std. Error of Mean	11.94
Coefficient of Variation	1.988	Skewness	3.332

Normal GOF Test

Shapiro Wilk Test Statistic	0.533	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.314	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.63	95% Adjusted-CLT UCL (Chen-1995)	59.85
		95% Modified-t UCL (Johnson-1978)	53.86

Gamma GOF Test

A-D Test Statistic	0.872	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.852	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.152	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.176	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.318	k star (bias corrected MLE)	0.308
Theta hat (MLE)	101.7	Theta star (bias corrected MLE)	105
nu hat (MLE)	18.44	nu star (bias corrected)	17.86
MLE Mean (bias corrected)	32.33	MLE Sd (bias corrected)	58.25
		Approximate Chi Square Value (0.05)	9.291
Adjusted Level of Significance	0.0407	Adjusted Chi Square Value	8.922

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	62.15	95% Adjusted Gamma UCL (use when n<50)	64.72

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.823	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.926	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.244	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.165	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:52:40 PM
From File	SO-Area1-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-4.075	Mean of logged Data	1.327
Maximum of Logged Data	5.717	SD of logged Data	3.105

Assuming Lognormal Distribution

95% H-UCL	13413	90% Chebyshev (MVUE) UCL	769.1
95% Chebyshev (MVUE) UCL	1012	97.5% Chebyshev (MVUE) UCL	1350
99% Chebyshev (MVUE) UCL	2013		

Nonparametric Distribution Free UCL Statistics
Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	51.96	95% Jackknife UCL	52.63
95% Standard Bootstrap UCL	51.45	95% Bootstrap-t UCL	84.29
95% Hall's Bootstrap UCL	124.2	95% Percentile Bootstrap UCL	52.9
95% BCA Bootstrap UCL	62.66		
90% Chebyshev(Mean, Sd) UCL	68.13	95% Chebyshev(Mean, Sd) UCL	84.35
97.5% Chebyshev(Mean, Sd) UCL	106.9	99% Chebyshev(Mean, Sd) UCL	151.1

Suggested UCL to Use

95% Adjusted Gamma UCL	64.72

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:21:34 AM
From File	So-Area1-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROPROPANE

General Statistics

Total Number of Observations	210	Number of Distinct Observations	65
Number of Detects	3	Number of Non-Detects	207
Number of Distinct Detects	3	Number of Distinct Non-Detects	62
Minimum Detect	0.608	Minimum Non-Detect	0
Maximum Detect	13	Maximum Non-Detect	10.2
Variance Detects	51.08	Percent Non-Detects	98.57%
Mean Detects	4.747	SD Detects	7.147
Median Detects	0.634	CV Detects	1.506
Skewness Detects	1.732	Kurtosis Detects	N/A

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.752	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.384	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.069	Standard Error of Mean	0.0758
SD	0.897	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.194	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.194	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.297	95% KM Chebyshev UCL	0.4
97.5% KM Chebyshev UCL	0.543	99% KM Chebyshev UCL	0.824

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.605	k star (bias corrected MLE)	N/A
Theta hat (MLE)	7.85	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	3.628	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.00593	nu hat (KM)	2.489
		Adjusted Level of Significance (β)	0.0489
Approximate Chi Square Value (2.49, α)	0.239	Adjusted Chi Square Value (2.49, β)	0.235
95% Gamma Approximate KM-UCL (use when n>=50)	0.72	95% Gamma Adjusted KM-UCL (use when n<50)	0.731

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
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Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:21:34 AM
From File	So-Area1-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DL/2 Statistics

Mean in Original Scale	0.311	SD in Original Scale	1.11
95% t UCL (Assumes normality)	0.437		

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.194	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

1,2,4,5-TETRACHLOROBENZENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	12
Number of Detects	2	Number of Non-Detects	12
Number of Distinct Detects	2	Number of Distinct Non-Detects	10
Minimum Detect	0.1	Minimum Non-Detect	0.018
Maximum Detect	2.1	Maximum Non-Detect	0.69
Variance Detects	2	Percent Non-Detects	85.71%
Mean Detects	1.1	SD Detects	1.414
Median Detects	1.1	CV Detects	1.286
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-0.78	SD of Logged Detects	2.153

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.174	Standard Error of Mean	0.202
SD	0.535	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.532	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.506	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.78	95% KM Chebyshev UCL	1.055
97.5% KM Chebyshev UCL	1.436	99% KM Chebyshev UCL	2.185

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:21:34 AM
From File	So-Area1-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.691	k star (bias corrected MLE)	N/A
Theta hat (MLE)	1.591	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	2.766	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.105	nu hat (KM)	2.952
		Adjusted Level of Significance (β)	0.0312
Approximate Chi Square Value (2.95, α)	0.358	Adjusted Chi Square Value (2.95, β)	0.269
95% Gamma Approximate KM-UCL (use when n>=50)	1.43	95% Gamma Adjusted KM-UCL (use when n<50)	1.909

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.157	Mean in Log Scale	-8.181
SD in Original Scale	0.56	SD in Log Scale	3.365
95% t UCL (assumes normality of ROS data)	0.422	95% Percentile Bootstrap UCL	0.45
95% BCA Bootstrap UCL	0.607	95% Bootstrap t UCL	595.3
95% H-UCL (Log ROS)	89.3		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.216	Mean in Log Scale	-2.835
SD in Original Scale	0.549	SD in Log Scale	1.385
95% t UCL (Assumes normality)	0.475	95% H-Stat UCL	0.581

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	2.185

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:21:34 AM
From File	So-Area1-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	39	Number of Distinct Observations	37
		Number of Missing Observations	0
Minimum	0.0088	Mean	18.5
Maximum	144	Median	8.02
SD	27.61	Std. Error of Mean	4.422
Coefficient of Variation	1.493	Skewness	3.057

Normal GOF Test

Shapiro Wilk Test Statistic	0.643	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.939	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.283	Lilliefors GOF Test
5% Lilliefors Critical Value	0.142	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	25.96	95% Adjusted-CLT UCL (Chen-1995)	28.09
		95% Modified-t UCL (Johnson-1978)	26.32

Gamma GOF Test

A-D Test Statistic	1.565	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.832	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.197	Kolmogrov-Smirnoff Gamma GOF Test
5% K-S Critical Value	0.151	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.416	k star (bias corrected MLE)	0.401
Theta hat (MLE)	44.43	Theta star (bias corrected MLE)	46.08
nu hat (MLE)	32.48	nu star (bias corrected)	31.32
MLE Mean (bias corrected)	18.5	MLE Sd (bias corrected)	29.2
		Approximate Chi Square Value (0.05)	19.53
Adjusted Level of Significance	0.0437	Adjusted Chi Square Value	19.16

Attachment F
ProUCL Output Area 1 Surface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:21:34 AM
From File	So-Area1-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	29.66	95% Adjusted Gamma UCL (use when n<50)	30.23

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.754	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.939	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.298	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.142	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.733	Mean of logged Data	1.348
Maximum of Logged Data	4.97	SD of logged Data	2.856

Assuming Lognormal Distribution

95% H-UCL	2388	90% Chebyshev (MVUE) UCL	450.7
95% Chebyshev (MVUE) UCL	587.5	97.5% Chebyshev (MVUE) UCL	777.4
99% Chebyshev (MVUE) UCL	1150		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	25.77	95% Jackknife UCL	25.96
95% Standard Bootstrap UCL	25.67	95% Bootstrap-t UCL	30.97
95% Hall's Bootstrap UCL	34.67	95% Percentile Bootstrap UCL	26.37
95% BCA Bootstrap UCL	28.44		
90% Chebyshev(Mean, Sd) UCL	31.77	95% Chebyshev(Mean, Sd) UCL	37.77
97.5% Chebyshev(Mean, Sd) UCL	46.11	99% Chebyshev(Mean, Sd) UCL	62.5

Suggested UCL to Use

97.5% Chebyshev (Mean, Sd) UCL	46.11

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,1,2,2-TETRACHLOROETHANE

General Statistics

Total Number of Observations	109	Number of Distinct Observations	45
Number of Detects	10	Number of Non-Detects	99
Number of Distinct Detects	10	Number of Distinct Non-Detects	36
Minimum Detect	0.009	Minimum Non-Detect	0.001
Maximum Detect	170	Maximum Non-Detect	7.116
Variance Detects	2766	Percent Non-Detects	90.83%
Mean Detects	28.81	SD Detects	52.6
Median Detects	2.05	CV Detects	1.825
Skewness Detects	2.565	Kurtosis Detects	7.099
Mean of Logged Detects	0.668	SD of Logged Detects	3.457

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.611	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.308	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.649	Standard Error of Mean	1.742
SD	17.25	95% KM (BCA) UCL	6.166
95% KM (t) UCL	5.539	95% KM (Percentile Bootstrap) UCL	5.64
95% KM (z) UCL	5.514	95% KM Bootstrap t UCL	12.33
90% KM Chebyshev UCL	7.874	95% KM Chebyshev UCL	10.24
97.5% KM Chebyshev UCL	13.53	99% KM Chebyshev UCL	19.98

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.342	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.829	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.183	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.29	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.262	k star (bias corrected MLE)	0.25
Theta hat (MLE)	110.1	Theta star (bias corrected MLE)	115.3
nu hat (MLE)	5.236	nu star (bias corrected)	4.999
MLE Mean (bias corrected)	28.81	MLE Sd (bias corrected)	57.63

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0236	nu hat (KM)	5.142
Approximate Chi Square Value (5.14, α)	1.219	Adjusted Chi Square Value (5.14, β)	1.194
95% Gamma Approximate KM-UCL (use when n>=50)	11.18	95% Gamma Adjusted KM-UCL (use when n<50)	11.41

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.009	Mean	2.653
Maximum	170	Median	0.01
SD	17.33	CV	6.533
k hat (MLE)	0.151	k star (bias corrected MLE)	0.153
Theta hat (MLE)	17.6	Theta star (bias corrected MLE)	17.38
nu hat (MLE)	32.85	nu star (bias corrected)	33.28
MLE Mean (bias corrected)	2.653	MLE Sd (bias corrected)	6.789
		Adjusted Level of Significance (β)	0.0478
Approximate Chi Square Value (33.28, α)	21.09	Adjusted Chi Square Value (33.28, β)	20.96
95% Gamma Approximate UCL (use when n>=50)	4.186	95% Gamma Adjusted UCL (use when n<50)	4.212

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.914	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.19	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.644	Mean in Log Scale	-12.19
SD in Original Scale	17.33	SD in Log Scale	6.021
95% t UCL (assumes normality of ROS data)	5.398	95% Percentile Bootstrap UCL	5.482
95% BCA Bootstrap UCL	8.369	95% Bootstrap t UCL	12.64
95% H-UCL (Log ROS)	60426		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.963	95% H-UCL (KM -Log)	0.134
KM SD (logged)	2.461	95% Critical H Value (KM-Log)	3.893
KM Standard Error of Mean (logged)	0.302		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.864	Mean in Log Scale	-2.659
SD in Original Scale	17.3	SD in Log Scale	2.536
95% t UCL (Assumes normality)	5.614	95% H-Stat UCL	4.627

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	5.539	95% GROS Approximate Gamma UCL	4.186
95% Approximate Gamma KM-UCL	11.18		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,3-TRICHLOROBENZENE

General Statistics

Total Number of Observations	17	Number of Distinct Observations	16
Number of Detects	8	Number of Non-Detects	9
Number of Distinct Detects	8	Number of Distinct Non-Detects	8
Minimum Detect	0.209	Minimum Non-Detect	0.001
Maximum Detect	123.4	Maximum Non-Detect	2.612
Variance Detects	1748	Percent Non-Detects	52.94%
Mean Detects	22.75	SD Detects	41.81
Median Detects	5.315	CV Detects	1.838
Skewness Detects	2.539	Kurtosis Detects	6.702
Mean of Logged Detects	1.459	SD of Logged Detects	2.221

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.607	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.35	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	10.75	Standard Error of Mean	7.551
SD	29.12	95% KM (BCA) UCL	26.11
95% KM (t) UCL	23.93	95% KM (Percentile Bootstrap) UCL	24.43
95% KM (z) UCL	23.17	95% KM Bootstrap t UCL	59.41
90% KM Chebyshev UCL	33.4	95% KM Chebyshev UCL	43.66
97.5% KM Chebyshev UCL	57.9	99% KM Chebyshev UCL	85.88

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.34	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.781	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.182	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.313	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.396	k star (bias corrected MLE)	0.331
Theta hat (MLE)	57.5	Theta star (bias corrected MLE)	68.81
nu hat (MLE)	6.332	nu star (bias corrected)	5.291
MLE Mean (bias corrected)	22.75	MLE Sd (bias corrected)	39.57

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.136	nu hat (KM)	4.632
Approximate Chi Square Value (4.63, α)	0.986	Adjusted Chi Square Value (4.63, β)	0.825
95% Gamma Approximate KM-UCL (use when n>=50)	50.49	95% Gamma Adjusted KM-UCL (use when n<50)	60.33

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	10.71
Maximum	123.4	Median	0.01
SD	30.03	CV	2.803
k hat (MLE)	0.181	k star (bias corrected MLE)	0.188
Theta hat (MLE)	59.11	Theta star (bias corrected MLE)	56.85
nu hat (MLE)	6.162	nu star (bias corrected)	6.408
MLE Mean (bias corrected)	10.71	MLE Sd (bias corrected)	24.68
		Adjusted Level of Significance (β)	0.0346
Approximate Chi Square Value (6.41, α)	1.852	Adjusted Chi Square Value (6.41, β)	1.607
95% Gamma Approximate UCL (use when n>=50)	37.07	95% Gamma Adjusted UCL (use when n<50)	42.72

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.173	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	10.72	Mean in Log Scale	-1.368
SD in Original Scale	30.03	SD in Log Scale	3.19
95% t UCL (assumes normality of ROS data)	23.44	95% Percentile Bootstrap UCL	24.27
95% BCA Bootstrap UCL	32.09	95% Bootstrap t UCL	63.92
95% H-UCL (Log ROS)	8382		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.44	95% H-UCL (KM -Log)	9340320
KM SD (logged)	4.269	95% Critical H Value (KM-Log)	8.786
KM Standard Error of Mean (logged)	1.195		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	10.9	Mean in Log Scale	-0.884
SD in Original Scale	29.96	SD in Log Scale	3.442
95% t UCL (Assumes normality)	23.58	95% H-Stat UCL	72910

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	23.93	95% GROS Adjusted Gamma UCL	42.72
95% Adjusted Gamma KM-UCL	60.33		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-TRICHLOROBENZENE

General Statistics

Total Number of Observations	47	Number of Distinct Observations	32
Number of Detects	21	Number of Non-Detects	26
Number of Distinct Detects	20	Number of Distinct Non-Detects	13
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	894.7	Maximum Non-Detect	2.733
Variance Detects	38451	Percent Non-Detects	55.32%
Mean Detects	75.62	SD Detects	196.1
Median Detects	2.5	CV Detects	2.593
Skewness Detects	4.005	Kurtosis Detects	17.08
Mean of Logged Detects	1.486	SD of Logged Detects	3.207

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.421	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.351	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	33.8	Standard Error of Mean	19.93
SD	133.3	95% KM (BCA) UCL	74.86
95% KM (t) UCL	67.25	95% KM (Percentile Bootstrap) UCL	71.42
95% KM (z) UCL	66.58	95% KM Bootstrap t UCL	155
90% KM Chebyshev UCL	93.58	95% KM Chebyshev UCL	120.7
97.5% KM Chebyshev UCL	158.2	99% KM Chebyshev UCL	232.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.657	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.871	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.192	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.208	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.25	k star (bias corrected MLE)	0.246
Theta hat (MLE)	302.3	Theta star (bias corrected MLE)	307.2
nu hat (MLE)	10.51	nu star (bias corrected)	10.34
MLE Mean (bias corrected)	75.62	MLE Sd (bias corrected)	152.4

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0643	nu hat (KM)	6.042
Approximate Chi Square Value (6.04, α)	1.661	Adjusted Chi Square Value (6.04, β)	1.59
95% Gamma Approximate KM-UCL (use when n>=50)	122.9	95% Gamma Adjusted KM-UCL (use when n<50)	128.4

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	33.79
Maximum	894.7	Median	0.01
SD	134.8	CV	3.988
k hat (MLE)	0.143	k star (bias corrected MLE)	0.148
Theta hat (MLE)	236	Theta star (bias corrected MLE)	228
nu hat (MLE)	13.46	nu star (bias corrected)	13.93
MLE Mean (bias corrected)	33.79	MLE Sd (bias corrected)	87.77
		Adjusted Level of Significance (β)	0.0449
Approximate Chi Square Value (13.93, α)	6.526	Adjusted Chi Square Value (13.93, β)	6.365
95% Gamma Approximate UCL (use when n>=50)	72.15	95% Gamma Adjusted UCL (use when n<50)	73.98

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.956	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.104	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	33.79	Mean in Log Scale	-2.996
SD in Original Scale	134.8	SD in Log Scale	4.871
95% t UCL (assumes normality of ROS data)	66.79	95% Percentile Bootstrap UCL	69.62
95% BCA Bootstrap UCL	95	95% Bootstrap t UCL	157.1
95% H-UCL (Log ROS)	2046986		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.045	95% H-UCL (KM -Log)	418648
KM SD (logged)	4.651	95% Critical H Value (KM-Log)	7.549
KM Standard Error of Mean (logged)	0.705		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	33.87	Mean in Log Scale	-2.197
SD in Original Scale	134.7	SD in Log Scale	4.492
95% t UCL (Assumes normality)	66.86	95% H-Stat UCL	337123

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	67.25	95% GROS Adjusted Gamma UCL	73.98
95% Adjusted Gamma KM-UCL	128.4		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-CIS-DICHLOROETHYLENE

General Statistics

Total Number of Observations	108	Number of Distinct Observations	53
Number of Detects	23	Number of Non-Detects	85
Number of Distinct Detects	23	Number of Distinct Non-Detects	33
Minimum Detect	0.0365	Minimum Non-Detect	0.001
Maximum Detect	150	Maximum Non-Detect	2.321
Variance Detects	1020	Percent Non-Detects	78.7%
Mean Detects	11.82	SD Detects	31.93
Median Detects	0.8	CV Detects	2.702
Skewness Detects	4.055	Kurtosis Detects	17.56
Mean of Logged Detects	0.376	SD of Logged Detects	2.038

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.41	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.356	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.53	Standard Error of Mean	1.496
SD	15.2	95% KM (BCA) UCL	5.757
95% KM (t) UCL	5.012	95% KM (Percentile Bootstrap) UCL	5.282
95% KM (z) UCL	4.99	95% KM Bootstrap t UCL	12.43
90% KM Chebyshev UCL	7.017	95% KM Chebyshev UCL	9.05
97.5% KM Chebyshev UCL	11.87	99% KM Chebyshev UCL	17.41

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.935	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.843	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.277	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.196	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.325	k star (bias corrected MLE)	0.312
Theta hat (MLE)	36.36	Theta star (bias corrected MLE)	37.93
nu hat (MLE)	14.95	nu star (bias corrected)	14.34
MLE Mean (bias corrected)	11.82	MLE Sd (bias corrected)	21.17

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0277	nu hat (KM)	5.983
Approximate Chi Square Value (5.98, α)	1.631	Adjusted Chi Square Value (5.98, β)	1.601
95% Gamma Approximate KM-UCL (use when n>=50)	9.28	95% Gamma Adjusted KM-UCL (use when n<50)	9.455

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.525
Maximum	150	Median	0.01
SD	15.27	CV	6.049
k hat (MLE)	0.169	k star (bias corrected MLE)	0.17
Theta hat (MLE)	14.95	Theta star (bias corrected MLE)	14.82
nu hat (MLE)	36.49	nu star (bias corrected)	36.81
MLE Mean (bias corrected)	2.525	MLE Sd (bias corrected)	6.117
		Adjusted Level of Significance (β)	0.0478
Approximate Chi Square Value (36.81, α)	23.92	Adjusted Chi Square Value (36.81, β)	23.78
95% Gamma Approximate UCL (use when n>=50)	3.885	95% Gamma Adjusted UCL (use when n<50)	3.908

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.947	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.174	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.522	Mean in Log Scale	-5.165
SD in Original Scale	15.27	SD in Log Scale	3.619
95% t UCL (assumes normality of ROS data)	4.961	95% Percentile Bootstrap UCL	5.148
95% BCA Bootstrap UCL	7.508	95% Bootstrap t UCL	13.06
95% H-UCL (Log ROS)	26.6		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.087	95% H-UCL (KM -Log)	4.312
KM SD (logged)	3.182	95% Critical H Value (KM-Log)	4.836
KM Standard Error of Mean (logged)	0.359		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.637	Mean in Log Scale	-2.499
SD in Original Scale	15.26	SD in Log Scale	2.647
95% t UCL (Assumes normality)	5.073	95% H-Stat UCL	7.855

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	11.87

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROBENZENE

General Statistics

Total Number of Observations	115	Number of Distinct Observations	79
Number of Detects	67	Number of Non-Detects	48
Number of Distinct Detects	64	Number of Distinct Non-Detects	18
Minimum Detect	0.004	Minimum Non-Detect	0.001
Maximum Detect	8700	Maximum Non-Detect	2
Variance Detects	1248571	Percent Non-Detects	41.74%
Mean Detects	246.5	SD Detects	1117
Median Detects	6.487	CV Detects	4.532
Skewness Detects	6.954	Kurtosis Detects	51.68
Mean of Logged Detects	1.639	SD of Logged Detects	3.267

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.245	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.413	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.108	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	143.6	Standard Error of Mean	80.35
SD	855.2	95% KM (BCA) UCL	293.5
95% KM (t) UCL	276.9	95% KM (Percentile Bootstrap) UCL	278.7
95% KM (z) UCL	275.8	95% KM Bootstrap t UCL	789.2
90% KM Chebyshev UCL	384.7	95% KM Chebyshev UCL	493.9
97.5% KM Chebyshev UCL	645.4	99% KM Chebyshev UCL	943.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.816	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.923	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.178	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.121	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.192	k star (bias corrected MLE)	0.193
Theta hat (MLE)	1287	Theta star (bias corrected MLE)	1278
nu hat (MLE)	25.66	nu star (bias corrected)	25.85
MLE Mean (bias corrected)	246.5	MLE Sd (bias corrected)	561.3

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0282	nu hat (KM)	6.489
Approximate Chi Square Value (6.49, α)	1.895	Adjusted Chi Square Value (6.49, β)	1.864
95% Gamma Approximate KM-UCL (use when n>=50)	492	95% Gamma Adjusted KM-UCL (use when n<50)	500.2

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	143.6
Maximum	8700	Median	0.19
SD	858.9	CV	5.98
k hat (MLE)	0.132	k star (bias corrected MLE)	0.134
Theta hat (MLE)	1089	Theta star (bias corrected MLE)	1070
nu hat (MLE)	30.34	nu star (bias corrected)	30.88
MLE Mean (bias corrected)	143.6	MLE Sd (bias corrected)	392
		Adjusted Level of Significance (β)	0.0479
Approximate Chi Square Value (30.88, α)	19.19	Adjusted Chi Square Value (30.88, β)	19.07
95% Gamma Approximate UCL (use when n>=50)	231.2	95% Gamma Adjusted UCL (use when n<50)	232.6

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0492	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.108	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	143.6	Mean in Log Scale	-1.456
SD in Original Scale	858.9	SD in Log Scale	4.627
95% t UCL (assumes normality of ROS data)	276.5	95% Percentile Bootstrap UCL	286.6
95% BCA Bootstrap UCL	461.8	95% Bootstrap t UCL	785.4
95% H-UCL (Log ROS)	202156		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.611	95% H-UCL (KM -Log)	216311
KM SD (logged)	4.665	95% Critical H Value (KM-Log)	6.898
KM Standard Error of Mean (logged)	0.454		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	143.7	Mean in Log Scale	-0.683
SD in Original Scale	858.9	SD in Log Scale	4.013
95% t UCL (Assumes normality)	276.5	95% H-Stat UCL	15104

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 645.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROETHANE

General Statistics

Total Number of Observations	109	Number of Distinct Observations	50
Number of Detects	16	Number of Non-Detects	93
Number of Distinct Detects	15	Number of Distinct Non-Detects	36
Minimum Detect	0.011	Minimum Non-Detect	0.001
Maximum Detect	45	Maximum Non-Detect	5.6
Variance Detects	185.6	Percent Non-Detects	85.32%
Mean Detects	8.171	SD Detects	13.62
Median Detects	1.4	CV Detects	1.667
Skewness Detects	2.012	Kurtosis Detects	3.256
Mean of Logged Detects	0.483	SD of Logged Detects	2.22

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.652	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.305	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.222	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.209	Standard Error of Mean	0.576
SD	5.821	95% KM (BCA) UCL	2.304
95% KM (t) UCL	2.165	95% KM (Percentile Bootstrap) UCL	2.225
95% KM (z) UCL	2.157	95% KM Bootstrap t UCL	3.535
90% KM Chebyshev UCL	2.937	95% KM Chebyshev UCL	3.72
97.5% KM Chebyshev UCL	4.806	99% KM Chebyshev UCL	6.94

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.479	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.816	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.212	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.23	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.406	k star (bias corrected MLE)	0.371
Theta hat (MLE)	20.14	Theta star (bias corrected MLE)	22
nu hat (MLE)	12.99	nu star (bias corrected)	11.88
MLE Mean (bias corrected)	8.171	MLE Sd (bias corrected)	13.41

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0432	nu hat (KM)	9.41
Approximate Chi Square Value (9.41, α)	3.576	Adjusted Chi Square Value (9.41, β)	3.528
95% Gamma Approximate KM-UCL (use when n>=50)	3.182	95% Gamma Adjusted KM-UCL (use when n<50)	3.226

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1.208
Maximum	45	Median	0.01
SD	5.848	CV	4.841
k hat (MLE)	0.184	k star (bias corrected MLE)	0.185
Theta hat (MLE)	6.559	Theta star (bias corrected MLE)	6.522
nu hat (MLE)	40.15	nu star (bias corrected)	40.38
MLE Mean (bias corrected)	1.208	MLE Sd (bias corrected)	2.807
		Adjusted Level of Significance (β)	0.0478
Approximate Chi Square Value (40.38, α)	26.82	Adjusted Chi Square Value (40.38, β)	26.67
95% Gamma Approximate UCL (use when n>=50)	1.819	95% Gamma Adjusted UCL (use when n<50)	1.829

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.106	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.222	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.203	Mean in Log Scale	-6.831
SD in Original Scale	5.849	SD in Log Scale	4.006
95% t UCL (assumes normality of ROS data)	2.132	95% Percentile Bootstrap UCL	2.223
95% BCA Bootstrap UCL	2.592	95% Bootstrap t UCL	3.766
95% H-UCL (Log ROS)	32.79		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.578	95% H-UCL (KM -Log)	0.653
KM SD (logged)	2.818	95% Critical H Value (KM-Log)	4.357
KM Standard Error of Mean (logged)	0.322		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1.358	Mean in Log Scale	-2.625
SD in Original Scale	5.827	SD in Log Scale	2.556
95% t UCL (Assumes normality)	2.284	95% H-Stat UCL	5.095

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	2.165	95% GROS Approximate Gamma UCL	1.819
95% Approximate Gamma KM-UCL	3.182		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,3-DICHLOROBENZENE

General Statistics

Total Number of Observations	116	Number of Distinct Observations	63
Number of Detects	32	Number of Non-Detects	84
Number of Distinct Detects	29	Number of Distinct Non-Detects	36
Minimum Detect	0.0037	Minimum Non-Detect	0.001
Maximum Detect	27	Maximum Non-Detect	5.6
Variance Detects	26.16	Percent Non-Detects	72.41%
Mean Detects	1.784	SD Detects	5.114
Median Detects	0.195	CV Detects	2.867
Skewness Detects	4.3	Kurtosis Detects	20.17
Mean of Logged Detects	-1.613	SD of Logged Detects	2.169

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.391	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.93	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.389	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.157	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.512	Standard Error of Mean	0.26
SD	2.759	95% KM (BCA) UCL	1.015
95% KM (t) UCL	0.944	95% KM (Percentile Bootstrap) UCL	1.012
95% KM (z) UCL	0.941	95% KM Bootstrap t UCL	1.814
90% KM Chebyshev UCL	1.294	95% KM Chebyshev UCL	1.648
97.5% KM Chebyshev UCL	2.139	99% KM Chebyshev UCL	3.104

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.256	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.852	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.237	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.168	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.312	k star (bias corrected MLE)	0.304
Theta hat (MLE)	5.709	Theta star (bias corrected MLE)	5.868
nu hat (MLE)	20	nu star (bias corrected)	19.46
MLE Mean (bias corrected)	1.784	MLE Sd (bias corrected)	3.235

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0345	nu hat (KM)	8.002
Approximate Chi Square Value (8.00, α)	2.736	Adjusted Chi Square Value (8.00, β)	2.698
95% Gamma Approximate KM-UCL (use when n>=50)	1.499	95% Gamma Adjusted KM-UCL (use when n<50)	1.52

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0037	Mean	0.499
Maximum	27	Median	0.01
SD	2.772	CV	5.552
k hat (MLE)	0.233	k star (bias corrected MLE)	0.233
Theta hat (MLE)	2.145	Theta star (bias corrected MLE)	2.147
nu hat (MLE)	54.02	nu star (bias corrected)	53.96
MLE Mean (bias corrected)	0.499	MLE Sd (bias corrected)	1.035
		Adjusted Level of Significance (β)	0.0479
Approximate Chi Square Value (53.96, α)	38.08	Adjusted Chi Square Value (53.96, β)	37.91
95% Gamma Approximate UCL (use when n>=50)	0.708	95% Gamma Adjusted UCL (use when n<50)	0.711

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.93	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.133	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.157	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.498	Mean in Log Scale	-4.828
SD in Original Scale	2.773	SD in Log Scale	2.73
95% t UCL (assumes normality of ROS data)	0.925	95% Percentile Bootstrap UCL	1.002
95% BCA Bootstrap UCL	1.195	95% Bootstrap t UCL	1.888
95% H-UCL (Log ROS)	0.985		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.54	95% H-UCL (KM -Log)	0.931
KM SD (logged)	2.629	95% Critical H Value (KM-Log)	4.132
KM Standard Error of Mean (logged)	0.334		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.64	Mean in Log Scale	-2.673
SD in Original Scale	2.769	SD in Log Scale	2.293
95% t UCL (Assumes normality)	1.066	95% H-Stat UCL	2.109

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	2.139

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,4-DICHLOROBENZENE

General Statistics

Total Number of Observations	126	Number of Distinct Observations	79
Number of Detects	64	Number of Non-Detects	62
Number of Distinct Detects	56	Number of Distinct Non-Detects	26
Minimum Detect	0.004	Minimum Non-Detect	0.001
Maximum Detect	220	Maximum Non-Detect	2.939
Variance Detects	1260	Percent Non-Detects	49.21%
Mean Detects	8.811	SD Detects	35.5
Median Detects	0.45	CV Detects	4.029
Skewness Detects	5.301	Kurtosis Detects	28.19
Mean of Logged Detects	-0.791	SD of Logged Detects	2.467

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.27	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.42	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.111	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	4.496	Standard Error of Mean	2.288
SD	25.48	95% KM (BCA) UCL	8.601
95% KM (t) UCL	8.287	95% KM (Percentile Bootstrap) UCL	8.818
95% KM (z) UCL	8.259	95% KM Bootstrap t UCL	23.45
90% KM Chebyshev UCL	11.36	95% KM Chebyshev UCL	14.47
97.5% KM Chebyshev UCL	18.79	99% KM Chebyshev UCL	27.26

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	5.203	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.894	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.248	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.123	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.241	k star (bias corrected MLE)	0.24
Theta hat (MLE)	36.59	Theta star (bias corrected MLE)	36.72
nu hat (MLE)	30.82	nu star (bias corrected)	30.71
MLE Mean (bias corrected)	8.811	MLE Sd (bias corrected)	17.99

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0311	nu hat (KM)	7.844
Approximate Chi Square Value (7.84, α)	2.645	Adjusted Chi Square Value (7.84, β)	2.61
95% Gamma Approximate KM-UCL (use when n>=50)	13.33	95% Gamma Adjusted KM-UCL (use when n<50)	13.51

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	4.48
Maximum	220	Median	0.01
SD	25.59	CV	5.711
k hat (MLE)	0.18	k star (bias corrected MLE)	0.181
Theta hat (MLE)	24.96	Theta star (bias corrected MLE)	24.82
nu hat (MLE)	45.24	nu star (bias corrected)	45.5
MLE Mean (bias corrected)	4.48	MLE Sd (bias corrected)	10.54
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (45.50, α)	31.03	Adjusted Chi Square Value (45.50, β)	30.89
95% Gamma Approximate UCL (use when n>=50)	6.571	95% Gamma Adjusted UCL (use when n<50)	6.6

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0619	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.111	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	4.482	Mean in Log Scale	-3.037
SD in Original Scale	25.59	SD in Log Scale	3.133
95% t UCL (assumes normality of ROS data)	8.259	95% Percentile Bootstrap UCL	8.707
95% BCA Bootstrap UCL	10.53	95% Bootstrap t UCL	23.63
95% H-UCL (Log ROS)	24.15		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.023	95% H-UCL (KM -Log)	26.01
KM SD (logged)	3.149	95% Critical H Value (KM-Log)	4.701
KM Standard Error of Mean (logged)	0.321		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	4.56	Mean in Log Scale	-2.033
SD in Original Scale	25.57	SD in Log Scale	2.707
95% t UCL (Assumes normality)	8.336	95% H-Stat UCL	13.89

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	18.79

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZENE

General Statistics

Total Number of Observations	111	Number of Distinct Observations	68
Number of Detects	51	Number of Non-Detects	60
Number of Distinct Detects	47	Number of Distinct Non-Detects	25
Minimum Detect	0.001	Minimum Non-Detect	5.0000E-4
Maximum Detect	98	Maximum Non-Detect	1.779
Variance Detects	192.8	Percent Non-Detects	54.05%
Mean Detects	4.238	SD Detects	13.89
Median Detects	0.7	CV Detects	3.276
Skewness Detects	6.419	Kurtosis Detects	43.72
Mean of Logged Detects	-0.6	SD of Logged Detects	2.449

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.307	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.38	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.124	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.963	Standard Error of Mean	0.916
SD	9.553	95% KM (BCA) UCL	3.771
95% KM (t) UCL	3.482	95% KM (Percentile Bootstrap) UCL	3.724
95% KM (z) UCL	3.469	95% KM Bootstrap t UCL	7.315
90% KM Chebyshev UCL	4.71	95% KM Chebyshev UCL	5.955
97.5% KM Chebyshev UCL	7.682	99% KM Chebyshev UCL	11.07

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.245	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.855	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.152	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.134	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.332	k star (bias corrected MLE)	0.325
Theta hat (MLE)	12.77	Theta star (bias corrected MLE)	13.02
nu hat (MLE)	33.85	nu star (bias corrected)	33.19
MLE Mean (bias corrected)	4.238	MLE Sd (bias corrected)	7.429

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0422	nu hat (KM)	9.373
Approximate Chi Square Value (9.37, α)	3.554	Adjusted Chi Square Value (9.37, β)	3.507
95% Gamma Approximate KM-UCL (use when n>=50)	5.177	95% Gamma Adjusted KM-UCL (use when n<50)	5.246

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	1.953
Maximum	98	Median	0.01
SD	9.598	CV	4.915
k hat (MLE)	0.212	k star (bias corrected MLE)	0.213
Theta hat (MLE)	9.198	Theta star (bias corrected MLE)	9.186
nu hat (MLE)	47.13	nu star (bias corrected)	47.19
MLE Mean (bias corrected)	1.953	MLE Sd (bias corrected)	4.235
		Adjusted Level of Significance (β)	0.0478
Approximate Chi Square Value (47.19, α)	32.43	Adjusted Chi Square Value (47.19, β)	32.27
95% Gamma Approximate UCL (use when n>=50)	2.842	95% Gamma Adjusted UCL (use when n<50)	2.856

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0976	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.124	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.952	Mean in Log Scale	-3.359
SD in Original Scale	9.598	SD in Log Scale	3.291
95% t UCL (assumes normality of ROS data)	3.463	95% Percentile Bootstrap UCL	3.677
95% BCA Bootstrap UCL	4.69	95% Bootstrap t UCL	6.915
95% H-UCL (Log ROS)	37.42		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.676	95% H-UCL (KM -Log)	109.8
KM SD (logged)	3.608	95% Critical H Value (KM-Log)	5.422
KM Standard Error of Mean (logged)	0.401		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.019	Mean in Log Scale	-2.145
SD in Original Scale	9.586	SD in Log Scale	2.821
95% t UCL (Assumes normality)	3.528	95% H-Stat UCL	20.3

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	7.682

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHLOROBENZENE

General Statistics

Total Number of Observations	128	Number of Distinct Observations	89
Number of Detects	81	Number of Non-Detects	47
Number of Distinct Detects	70	Number of Distinct Non-Detects	26
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	310	Maximum Non-Detect	5.6
Variance Detects	1255	Percent Non-Detects	36.72%
Mean Detects	7.403	SD Detects	35.43
Median Detects	0.76	CV Detects	4.786
Skewness Detects	8.056	Kurtosis Detects	68.67
Mean of Logged Detects	-0.684	SD of Logged Detects	2.615

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.219	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.423	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0984	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	4.717	Standard Error of Mean	2.511
SD	28.23	95% KM (BCA) UCL	9.734
95% KM (t) UCL	8.878	95% KM (Percentile Bootstrap) UCL	9.112
95% KM (z) UCL	8.848	95% KM Bootstrap t UCL	23.83
90% KM Chebyshev UCL	12.25	95% KM Chebyshev UCL	15.66
97.5% KM Chebyshev UCL	20.4	99% KM Chebyshev UCL	29.7

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.463	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.884	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.197	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.109	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.262	k star (bias corrected MLE)	0.261
Theta hat (MLE)	28.22	Theta star (bias corrected MLE)	28.38
nu hat (MLE)	42.51	nu star (bias corrected)	42.27
MLE Mean (bias corrected)	7.403	MLE Sd (bias corrected)	14.49

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0279	nu hat (KM)	7.147
Approximate Chi Square Value (7.15, α)	2.252	Adjusted Chi Square Value (7.15, β)	2.221
95% Gamma Approximate KM-UCL (use when n>=50)	14.97	95% Gamma Adjusted KM-UCL (use when n<50)	15.18

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	4.689
Maximum	310	Median	0.095
SD	28.35	CV	6.046
k hat (MLE)	0.201	k star (bias corrected MLE)	0.201
Theta hat (MLE)	23.38	Theta star (bias corrected MLE)	23.33
nu hat (MLE)	51.33	nu star (bias corrected)	51.46
MLE Mean (bias corrected)	4.689	MLE Sd (bias corrected)	10.46
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (51.46, α)	35.98	Adjusted Chi Square Value (51.46, β)	35.84
95% Gamma Approximate UCL (use when n>=50)	6.705	95% Gamma Adjusted UCL (use when n<50)	6.732

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.135	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0984	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	4.693	Mean in Log Scale	-2.139
SD in Original Scale	28.35	SD in Log Scale	2.986
95% t UCL (assumes normality of ROS data)	8.845	95% Percentile Bootstrap UCL	9.542
95% BCA Bootstrap UCL	12.44	95% Bootstrap t UCL	22.26
95% H-UCL (Log ROS)	33.45		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	4.791	Mean in Log Scale	-1.417
SD in Original Scale	28.33	SD in Log Scale	2.656
95% t UCL (Assumes normality)	8.941	95% H-Stat UCL	21.53

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	20.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ETHYLBENZENE

General Statistics

Total Number of Observations	126	Number of Distinct Observations	82
Number of Detects	78	Number of Non-Detects	48
Number of Distinct Detects	68	Number of Distinct Non-Detects	16
Minimum Detect	0.0025	Minimum Non-Detect	0.001
Maximum Detect	77	Maximum Non-Detect	3.017
Variance Detects	209.1	Percent Non-Detects	38.1%
Mean Detects	7.876	SD Detects	14.46
Median Detects	1.65	CV Detects	1.836
Skewness Detects	2.743	Kurtosis Detects	8.103
Mean of Logged Detects	0.144	SD of Logged Detects	2.542

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.603	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.295	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.1	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	4.891	Standard Error of Mean	1.07
SD	11.93	95% KM (BCA) UCL	6.731
95% KM (t) UCL	6.663	95% KM (Percentile Bootstrap) UCL	6.786
95% KM (z) UCL	6.65	95% KM Bootstrap t UCL	7.357
90% KM Chebyshev UCL	8.099	95% KM Chebyshev UCL	9.553
97.5% KM Chebyshev UCL	11.57	99% KM Chebyshev UCL	15.53

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.775	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.853	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.0982	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.109	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.35	k star (bias corrected MLE)	0.345
Theta hat (MLE)	22.49	Theta star (bias corrected MLE)	22.81
nu hat (MLE)	54.62	nu star (bias corrected)	53.86
MLE Mean (bias corrected)	7.876	MLE Sd (bias corrected)	13.4

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.168	nu hat (KM)	42.35
Approximate Chi Square Value (42.35, α)	28.43	Adjusted Chi Square Value (42.35, β)	28.3
95% Gamma Approximate KM-UCL (use when n>=50)	7.285	95% Gamma Adjusted KM-UCL (use when n<50)	7.319

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0025	Mean	4.879
Maximum	77	Median	0.107
SD	11.98	CV	2.456
k hat (MLE)	0.223	k star (bias corrected MLE)	0.223
Theta hat (MLE)	21.92	Theta star (bias corrected MLE)	21.92
nu hat (MLE)	56.1	nu star (bias corrected)	56.1
MLE Mean (bias corrected)	4.879	MLE Sd (bias corrected)	10.34
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (56.10, α)	39.88	Adjusted Chi Square Value (56.10, β)	39.73
95% Gamma Approximate UCL (use when n>=50)	6.863	95% Gamma Adjusted UCL (use when n<50)	6.89

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.1	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.1	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	4.884	Mean in Log Scale	-1.73
SD in Original Scale	11.98	SD in Log Scale	3.282
95% t UCL (assumes normality of ROS data)	6.652	95% Percentile Bootstrap UCL	6.773
95% BCA Bootstrap UCL	7.086	95% Bootstrap t UCL	7.345
95% H-UCL (Log ROS)	161.9		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.041	95% H-UCL (KM -Log)	477.3
KM SD (logged)	3.605	95% Critical H Value (KM-Log)	5.302
KM Standard Error of Mean (logged)	0.345		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	4.93	Mean in Log Scale	-1.346
SD in Original Scale	11.96	SD in Log Scale	3.161
95% t UCL (Assumes normality)	6.695	95% H-Stat UCL	145.9

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	6.731	95% GROS Approximate Gamma UCL	6.863
95% Approximate Gamma KM-UCL	7.285		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

METHYLENE CHLORIDE

General Statistics

Total Number of Observations	110	Number of Distinct Observations	61
Number of Detects	35	Number of Non-Detects	75
Number of Distinct Detects	34	Number of Distinct Non-Detects	29
Minimum Detect	0.0016	Minimum Non-Detect	0.002
Maximum Detect	350	Maximum Non-Detect	4.486
Variance Detects	4425	Percent Non-Detects	68.18%
Mean Detects	27.82	SD Detects	66.52
Median Detects	4.9	CV Detects	2.391
Skewness Detects	4.051	Kurtosis Detects	17.62
Mean of Logged Detects	1.119	SD of Logged Detects	3.013

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.448	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.338	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	8.87	Standard Error of Mean	3.791
SD	39.18	95% KM (BCA) UCL	15.77
95% KM (t) UCL	15.16	95% KM (Percentile Bootstrap) UCL	15.69
95% KM (z) UCL	15.11	95% KM Bootstrap t UCL	29.33
90% KM Chebyshev UCL	20.24	95% KM Chebyshev UCL	25.39
97.5% KM Chebyshev UCL	32.54	99% KM Chebyshev UCL	46.59

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.622	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.854	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.11	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.161	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.311	k star (bias corrected MLE)	0.303
Theta hat (MLE)	89.57	Theta star (bias corrected MLE)	91.81
nu hat (MLE)	21.75	nu star (bias corrected)	21.22
MLE Mean (bias corrected)	27.82	MLE Sd (bias corrected)	50.54

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0512	nu hat (KM)	11.27
Approximate Chi Square Value (11.27, α)	4.753	Adjusted Chi Square Value (11.27, β)	4.697
95% Gamma Approximate KM-UCL (use when n>=50)	21.04	95% Gamma Adjusted KM-UCL (use when n<50)	21.29

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0016	Mean	8.86
Maximum	350	Median	0.01
SD	39.37	CV	4.443
k hat (MLE)	0.154	k star (bias corrected MLE)	0.156
Theta hat (MLE)	57.47	Theta star (bias corrected MLE)	56.79
nu hat (MLE)	33.92	nu star (bias corrected)	34.33
MLE Mean (bias corrected)	8.86	MLE Sd (bias corrected)	22.43
		Adjusted Level of Significance (β)	0.0478
Approximate Chi Square Value (34.33, α)	21.92	Adjusted Chi Square Value (34.33, β)	21.79
95% Gamma Approximate UCL (use when n>=50)	13.87	95% Gamma Adjusted UCL (use when n<50)	13.96

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.882	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.176	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	8.862	Mean in Log Scale	-3.728
SD in Original Scale	39.37	SD in Log Scale	4.138
95% t UCL (assumes normality of ROS data)	15.09	95% Percentile Bootstrap UCL	15.86
95% BCA Bootstrap UCL	19.67	95% Bootstrap t UCL	28.79
95% H-UCL (Log ROS)	1437		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	9.036	Mean in Log Scale	-1.474
SD in Original Scale	39.33	SD in Log Scale	3.01
95% t UCL (Assumes normality)	15.26	95% H-Stat UCL	80.27

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	15.16	95% GROS Approximate Gamma UCL	13.87
95% Approximate Gamma KM-UCL	21.04		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

O-XYLENE

General Statistics

Total Number of Observations	78	Number of Distinct Observations	51
Number of Detects	45	Number of Non-Detects	33
Number of Distinct Detects	40	Number of Distinct Non-Detects	12
Minimum Detect	0.31	Minimum Non-Detect	0.001
Maximum Detect	110	Maximum Non-Detect	3.094
Variance Detects	668.3	Percent Non-Detects	42.31%
Mean Detects	16.51	SD Detects	25.85
Median Detects	4.1	CV Detects	1.566
Skewness Detects	2.439	Kurtosis Detects	6.058
Mean of Logged Detects	1.703	SD of Logged Detects	1.595

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.648	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.273	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	9.539	Standard Error of Mean	2.411
SD	21.06	95% KM (BCA) UCL	13.67
95% KM (t) UCL	13.55	95% KM (Percentile Bootstrap) UCL	13.68
95% KM (z) UCL	13.5	95% KM Bootstrap t UCL	14.79
90% KM Chebyshev UCL	16.77	95% KM Chebyshev UCL	20.05
97.5% KM Chebyshev UCL	24.6	99% KM Chebyshev UCL	33.53

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.185	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.807	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.159	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.139	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.566	k star (bias corrected MLE)	0.543
Theta hat (MLE)	29.18	Theta star (bias corrected MLE)	30.41
nu hat (MLE)	50.93	nu star (bias corrected)	48.87
MLE Mean (bias corrected)	16.51	MLE Sd (bias corrected)	22.41

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.205	nu hat (KM)	32.02
Approximate Chi Square Value (32.02, α)	20.09	Adjusted Chi Square Value (32.02, β)	19.91
95% Gamma Approximate KM-UCL (use when n>=50)	15.21	95% Gamma Adjusted KM-UCL (use when n<50)	15.34

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	9.531
Maximum	110	Median	0.761
SD	21.2	CV	2.224
k hat (MLE)	0.224	k star (bias corrected MLE)	0.224
Theta hat (MLE)	42.47	Theta star (bias corrected MLE)	42.49
nu hat (MLE)	35.01	nu star (bias corrected)	34.99
MLE Mean (bias corrected)	9.531	MLE Sd (bias corrected)	20.12
		Adjusted Level of Significance (β)	0.0469
Approximate Chi Square Value (34.99, α)	22.46	Adjusted Chi Square Value (34.99, β)	22.27
95% Gamma Approximate UCL (use when n>=50)	14.85	95% Gamma Adjusted UCL (use when n<50)	14.98

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.962	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0837	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	9.597	Mean in Log Scale	0.0715
SD in Original Scale	21.17	SD in Log Scale	2.35
95% t UCL (assumes normality of ROS data)	13.59	95% Percentile Bootstrap UCL	13.83
95% BCA Bootstrap UCL	14.73	95% Bootstrap t UCL	15.18
95% H-UCL (Log ROS)	48.21		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.854	95% H-UCL (KM -Log)	69353
KM SD (logged)	4.386	95% Critical H Value (KM-Log)	6.764
KM Standard Error of Mean (logged)	0.508		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	9.595	Mean in Log Scale	-0.164
SD in Original Scale	21.17	SD in Log Scale	2.69
95% t UCL (Assumes normality)	13.58	95% H-Stat UCL	120.2

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	24.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

P-ISOPROPYLTOLUENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	14
Number of Detects	3	Number of Non-Detects	11
Number of Distinct Detects	3	Number of Distinct Non-Detects	11
Minimum Detect	0.114	Minimum Non-Detect	0.0453
Maximum Detect	0.374	Maximum Non-Detect	2.475
Variance Detects	0.0191	Percent Non-Detects	78.57%
Mean Detects	0.217	SD Detects	0.138
Median Detects	0.163	CV Detects	0.637
Skewness Detects	1.487	Kurtosis Detects	N/A
Mean of Logged Detects	-1.656	SD of Logged Detects	0.61

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.318	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.119	Standard Error of Mean	0.0522
SD	0.113	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.211	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.205	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.275	95% KM Chebyshev UCL	0.346
97.5% KM Chebyshev UCL	0.445	99% KM Chebyshev UCL	0.638

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	4.046	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0537	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	24.28	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.114	nu hat (KM)	31.19
		Adjusted Level of Significance (β)	0.0312
Approximate Chi Square Value (31.19, α)	19.43	Adjusted Chi Square Value (31.19, β)	18.21
95% Gamma Approximate KM-UCL (use when n>=50)	0.191	95% Gamma Adjusted KM-UCL (use when n<50)	0.204

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.951	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.268	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0792	Mean in Log Scale	-2.918
SD in Original Scale	0.0934	SD in Log Scale	0.822
95% t UCL (assumes normality of ROS data)	0.123	95% Percentile Bootstrap UCL	0.122
95% BCA Bootstrap UCL	0.146	95% Bootstrap t UCL	0.209
95% H-UCL (Log ROS)	0.134		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.478	95% H-UCL (KM -Log)	0.194
KM SD (logged)	0.783	95% Critical H Value (KM-Log)	2.454
KM Standard Error of Mean (logged)	0.363		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.372	Mean in Log Scale	-1.701
SD in Original Scale	0.366	SD in Log Scale	1.473
95% t UCL (Assumes normality)	0.545	95% H-Stat UCL	2.392

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.211	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TETRACHLOROETHYLENE

General Statistics

Total Number of Observations	111	Number of Distinct Observations	46
Number of Detects	13	Number of Non-Detects	98
Number of Distinct Detects	13	Number of Distinct Non-Detects	33
Minimum Detect	0.0021	Minimum Non-Detect	0.001
Maximum Detect	19	Maximum Non-Detect	2.321
Variance Detects	26.5	Percent Non-Detects	88.29%
Mean Detects	2.646	SD Detects	5.147
Median Detects	0.717	CV Detects	1.945
Skewness Detects	3.085	Kurtosis Detects	10.17
Mean of Logged Detects	-1.005	SD of Logged Detects	2.782

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.545	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.318	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.317	Standard Error of Mean	0.187
SD	1.894	95% KM (BCA) UCL	0.663
95% KM (t) UCL	0.628	95% KM (Percentile Bootstrap) UCL	0.647
95% KM (z) UCL	0.625	95% KM Bootstrap t UCL	1.405
90% KM Chebyshev UCL	0.879	95% KM Chebyshev UCL	1.133
97.5% KM Chebyshev UCL	1.487	99% KM Chebyshev UCL	2.18

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.309	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.822	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.153	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.255	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.341	k star (bias corrected MLE)	0.314
Theta hat (MLE)	7.752	Theta star (bias corrected MLE)	8.431
nu hat (MLE)	8.875	nu star (bias corrected)	8.16
MLE Mean (bias corrected)	2.646	MLE Sd (bias corrected)	4.723

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0281	nu hat (KM)	6.236
Approximate Chi Square Value (6.24, α)	1.761	Adjusted Chi Square Value (6.24, β)	1.731
95% Gamma Approximate KM-UCL (use when n>=50)	1.124	95% Gamma Adjusted KM-UCL (use when n<50)	1.144

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0021	Mean	0.319
Maximum	19	Median	0.01
SD	1.901	CV	5.966
k hat (MLE)	0.236	k star (bias corrected MLE)	0.235
Theta hat (MLE)	1.351	Theta star (bias corrected MLE)	1.354
nu hat (MLE)	52.36	nu star (bias corrected)	52.27
MLE Mean (bias corrected)	0.319	MLE Sd (bias corrected)	0.657
		Adjusted Level of Significance (β)	0.0478
Approximate Chi Square Value (52.27, α)	36.67	Adjusted Chi Square Value (52.27, β)	36.5
95% Gamma Approximate UCL (use when n>=50)	0.454	95% Gamma Adjusted UCL (use when n<50)	0.457

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.918	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.201	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.311	Mean in Log Scale	-9.163
SD in Original Scale	1.903	SD in Log Scale	4.328
95% t UCL (assumes normality of ROS data)	0.611	95% Percentile Bootstrap UCL	0.635
95% BCA Bootstrap UCL	0.891	95% Bootstrap t UCL	1.47
95% H-UCL (Log ROS)	17.26		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.895	95% H-UCL (KM -Log)	0.0681
KM SD (logged)	2.215	95% Critical H Value (KM-Log)	3.584
KM Standard Error of Mean (logged)	0.277		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.444	Mean in Log Scale	-2.921
SD in Original Scale	1.895	SD in Log Scale	2.298
95% t UCL (Assumes normality)	0.742	95% H-Stat UCL	1.698

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.628	95% GROS Approximate Gamma UCL	0.454
95% Approximate Gamma KM-UCL	1.124		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TOLUENE

General Statistics

Total Number of Observations	136	Number of Distinct Observations	100
Number of Detects	99	Number of Non-Detects	37
Number of Distinct Detects	91	Number of Distinct Non-Detects	11
Minimum Detect	0.002	Minimum Non-Detect	0.001
Maximum Detect	2100	Maximum Non-Detect	2
Variance Detects	75054	Percent Non-Detects	27.21%
Mean Detects	107.5	SD Detects	274
Median Detects	4.9	CV Detects	2.549
Skewness Detects	4.843	Kurtosis Detects	29.69
Mean of Logged Detects	0.822	SD of Logged Detects	4.121

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.46	**Normal GOF Test on Detected Observations Only**
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.347	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.089	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	78.23	Standard Error of Mean	20.46
SD	237.4	95% KM (BCA) UCL	115.6
95% KM (t) UCL	112.1	95% KM (Percentile Bootstrap) UCL	111.3
95% KM (z) UCL	111.9	95% KM Bootstrap t UCL	131.1
90% KM Chebyshev UCL	139.6	95% KM Chebyshev UCL	167.4
97.5% KM Chebyshev UCL	206	99% KM Chebyshev UCL	281.8

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.601	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.925	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.1	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.1	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.192	k star (bias corrected MLE)	0.193
Theta hat (MLE)	559.5	Theta star (bias corrected MLE)	556.8
nu hat (MLE)	38.03	nu star (bias corrected)	38.21
MLE Mean (bias corrected)	107.5	MLE Sd (bias corrected)	244.6

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.109	nu hat (KM)	29.53
Approximate Chi Square Value (29.53, α)	18.12	Adjusted Chi Square Value (29.53, β)	18.03
95% Gamma Approximate KM-UCL (use when n>=50)	127.5	95% Gamma Adjusted KM-UCL (use when n<50)	128.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	78.23
Maximum	2100	Median	0.315
SD	238.3	CV	3.046
k hat (MLE)	0.153	k star (bias corrected MLE)	0.154
Theta hat (MLE)	511.8	Theta star (bias corrected MLE)	506.7
nu hat (MLE)	41.58	nu star (bias corrected)	41.99
MLE Mean (bias corrected)	78.23	MLE Sd (bias corrected)	199.1
		Adjusted Level of Significance (β)	0.0482
Approximate Chi Square Value (41.99, α)	28.14	Adjusted Chi Square Value (41.99, β)	28.02
95% Gamma Approximate UCL (use when n>=50)	116.7	95% Gamma Adjusted UCL (use when n<50)	117.2

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.127	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.089	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	78.23	Mean in Log Scale	-1.094
SD in Original Scale	238.3	SD in Log Scale	4.91
95% t UCL (assumes normality of ROS data)	112.1	95% Percentile Bootstrap UCL	114
95% BCA Bootstrap UCL	124.3	95% Bootstrap t UCL	133.7
95% H-UCL (Log ROS)	1150760		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	78.24	Mean in Log Scale	-0.499
SD in Original Scale	238.3	SD in Log Scale	4.289
95% t UCL (Assumes normality)	112.1	95% H-Stat UCL	60363

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 206

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRICHLOROETHYLENE

General Statistics

Total Number of Observations	105	Number of Distinct Observations	49
Number of Detects	23	Number of Non-Detects	82
Number of Distinct Detects	21	Number of Distinct Non-Detects	29
Minimum Detect	0.065	Minimum Non-Detect	0.001
Maximum Detect	1200	Maximum Non-Detect	3.326
Variance Detects	79001	Percent Non-Detects	78.1%
Mean Detects	97.33	SD Detects	281.1
Median Detects	1	CV Detects	2.888
Skewness Detects	3.399	Kurtosis Detects	11.74
Mean of Logged Detects	0.81	SD of Logged Detects	2.827

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.405	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.429	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	21.33	Standard Error of Mean	13.45
SD	134.8	95% KM (BCA) UCL	48.1
95% KM (t) UCL	43.66	95% KM (Percentile Bootstrap) UCL	46.49
95% KM (z) UCL	43.46	95% KM Bootstrap t UCL	123.9
90% KM Chebyshev UCL	61.69	95% KM Chebyshev UCL	79.97
97.5% KM Chebyshev UCL	105.3	99% KM Chebyshev UCL	155.2

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.714	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.901	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.327	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.201	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.196	k star (bias corrected MLE)	0.199
Theta hat (MLE)	496.7	Theta star (bias corrected MLE)	488.2
nu hat (MLE)	9.013	nu star (bias corrected)	9.171
MLE Mean (bias corrected)	97.33	MLE Sd (bias corrected)	218

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.025	nu hat (KM)	5.259
Approximate Chi Square Value (5.26, α)	1.274	Adjusted Chi Square Value (5.26, β)	1.247
95% Gamma Approximate KM-UCL (use when n>=50)	88.08	95% Gamma Adjusted KM-UCL (use when n<50)	89.95

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	21.33
Maximum	1200	Median	0.01
SD	135.5	CV	6.351
k hat (MLE)	0.122	k star (bias corrected MLE)	0.125
Theta hat (MLE)	174.7	Theta star (bias corrected MLE)	170.7
nu hat (MLE)	25.64	nu star (bias corrected)	26.24
MLE Mean (bias corrected)	21.33	MLE Sd (bias corrected)	60.33
		Adjusted Level of Significance (β)	0.0477
Approximate Chi Square Value (26.24, α)	15.57	Adjusted Chi Square Value (26.24, β)	15.45
95% Gamma Approximate UCL (use when n>=50)	35.96	95% Gamma Adjusted UCL (use when n<50)	36.22

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.149	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	21.32	Mean in Log Scale	-6.753
SD in Original Scale	135.5	SD in Log Scale	5.063
95% t UCL (assumes normality of ROS data)	43.26	95% Percentile Bootstrap UCL	45.03
95% BCA Bootstrap UCL	61.71	95% Bootstrap t UCL	125.1
95% H-UCL (Log ROS)	16848		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.941	95% H-UCL (KM -Log)	19.57
KM SD (logged)	3.497	95% Critical H Value (KM-Log)	5.246
KM Standard Error of Mean (logged)	0.384		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	21.46	Mean in Log Scale	-2.368
SD in Original Scale	135.4	SD in Log Scale	2.937
95% t UCL (Assumes normality)	43.39	95% H-Stat UCL	25.59

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 105.3

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

XYLENES,TOTAL

General Statistics

Total Number of Observations	127	Number of Distinct Observations	88
Number of Detects	94	Number of Non-Detects	33
Number of Distinct Detects	80	Number of Distinct Non-Detects	11
Minimum Detect	0.002	Minimum Non-Detect	0.001
Maximum Detect	300	Maximum Non-Detect	2.551
Variance Detects	3524	Percent Non-Detects	25.98%
Mean Detects	30.59	SD Detects	59.37
Median Detects	4.842	CV Detects	1.94
Skewness Detects	2.763	Kurtosis Detects	7.902
Mean of Logged Detects	1.118	SD of Logged Detects	2.823

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.578	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	0	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.323	Lilliefors GOF Test
5% Lilliefors Critical Value	0.0914	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	22.65	Standard Error of Mean	4.687
SD	52.54	95% KM (BCA) UCL	30.04
95% KM (t) UCL	30.42	95% KM (Percentile Bootstrap) UCL	30.62
95% KM (z) UCL	30.36	95% KM Bootstrap t UCL	32.01
90% KM Chebyshev UCL	36.71	95% KM Chebyshev UCL	43.08
97.5% KM Chebyshev UCL	51.92	99% KM Chebyshev UCL	69.29

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.209	Anderson-Darling GOF Test
5% A-D Critical Value	0.868	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.117	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.1	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.3	k star (bias corrected MLE)	0.297
Theta hat (MLE)	102.1	Theta star (bias corrected MLE)	103
nu hat (MLE)	56.32	nu star (bias corrected)	55.85
MLE Mean (bias corrected)	30.59	MLE Sd (bias corrected)	56.13

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.186	nu hat (KM)	47.22
Approximate Chi Square Value (47.22, α)	32.45	Adjusted Chi Square Value (47.22, β)	32.31
95% Gamma Approximate KM-UCL (use when n>=50)	32.96	95% Gamma Adjusted KM-UCL (use when n<50)	33.11

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	22.65
Maximum	300	Median	0.64
SD	52.75	CV	2.329
k hat (MLE)	0.209	k star (bias corrected MLE)	0.21
Theta hat (MLE)	108.1	Theta star (bias corrected MLE)	108
nu hat (MLE)	53.19	nu star (bias corrected)	53.27
MLE Mean (bias corrected)	22.65	MLE Sd (bias corrected)	49.45
		Adjusted Level of Significance (β)	0.0481
Approximate Chi Square Value (53.27, α)	37.5	Adjusted Chi Square Value (53.27, β)	37.35
95% Gamma Approximate UCL (use when n>=50)	32.17	95% Gamma Adjusted UCL (use when n<50)	32.3

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.0907	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0914	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	22.65	Mean in Log Scale	-0.327
SD in Original Scale	52.75	SD in Log Scale	3.538
95% t UCL (assumes normality of ROS data)	30.41	95% Percentile Bootstrap UCL	30.21
95% BCA Bootstrap UCL	32.11	95% Bootstrap t UCL	32.08
95% H-UCL (Log ROS)	1949		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-0.634	95% H-UCL (KM -Log)	9272
KM SD (logged)	3.938	95% Critical H Value (KM-Log)	5.746
KM Standard Error of Mean (logged)	0.363		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	22.68	Mean in Log Scale	-0.234
SD in Original Scale	52.74	SD in Log Scale	3.593
95% t UCL (Assumes normality)	30.43	95% H-Stat UCL	2735

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 51.92

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	19	Number of Distinct Observations	10
Number of Detects	1	Number of Non-Detects	18
Number of Distinct Detects	1	Number of Distinct Non-Detects	9

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable BENZO(B)FLUORANTHENE was not processed!

Biphenyl

General Statistics

Total Number of Observations	19	Number of Distinct Observations	14
Number of Detects	9	Number of Non-Detects	10
Number of Distinct Detects	9	Number of Distinct Non-Detects	5
Minimum Detect	0.045	Minimum Non-Detect	0.018
Maximum Detect	96	Maximum Non-Detect	0.69
Variance Detects	973.7	Percent Non-Detects	52.63%
Mean Detects	14.51	SD Detects	31.2
Median Detects	2.1	CV Detects	2.151
Skewness Detects	2.785	Kurtosis Detects	7.945
Mean of Logged Detects	0.638	SD of Logged Detects	2.387

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.533	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.385	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	6.887	Standard Error of Mean	5.232
SD	21.5	95% KM (BCA) UCL	15.86
95% KM (t) UCL	15.96	95% KM (Percentile Bootstrap) UCL	16.18
95% KM (z) UCL	15.49	95% KM Bootstrap t UCL	86.3
90% KM Chebyshev UCL	22.58	95% KM Chebyshev UCL	29.69
97.5% KM Chebyshev UCL	39.56	99% KM Chebyshev UCL	58.94

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.447	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.801	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.218	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.3	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.333	k star (bias corrected MLE)	0.296
Theta hat (MLE)	43.58	Theta star (bias corrected MLE)	49.02
nu hat (MLE)	5.993	nu star (bias corrected)	5.328
MLE Mean (bias corrected)	14.51	MLE Sd (bias corrected)	26.67

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.103	nu hat (KM)	3.899
Approximate Chi Square Value (3.90, α)	0.682	Adjusted Chi Square Value (3.90, β)	0.578

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

95% Gamma Approximate KM-UCL (use when n>=50)	39.36	95% Gamma Adjusted KM-UCL (use when n<50)	46.45

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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	6.878
Maximum	96	Median	0.01
SD	22.09	CV	3.212
k hat (MLE)	0.184	k star (bias corrected MLE)	0.19
Theta hat (MLE)	37.37	Theta star (bias corrected MLE)	36.18
nu hat (MLE)	6.995	nu star (bias corrected)	7.224
MLE Mean (bias corrected)	6.878	MLE Sd (bias corrected)	15.78
		Adjusted Level of Significance (β)	0.0369
Approximate Chi Square Value (7.22, α)	2.294	Adjusted Chi Square Value (7.22, β)	2.059
95% Gamma Approximate UCL (use when n>=50)	21.66	95% Gamma Adjusted UCL (use when n<50)	24.13

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.987	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.14	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	6.876	Mean in Log Scale	-2.741
SD in Original Scale	22.09	SD in Log Scale	3.791
95% t UCL (assumes normality of ROS data)	15.67	95% Percentile Bootstrap UCL	16.57
95% BCA Bootstrap UCL	22.65	95% Bootstrap t UCL	82.89
95% H-UCL (Log ROS)	65816		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-1.771	95% H-UCL (KM -Log)	336.4
KM SD (logged)	2.782	95% Critical H Value (KM-Log)	5.672
KM Standard Error of Mean (logged)	0.681		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	6.899	Mean in Log Scale	-1.694
SD in Original Scale	22.09	SD in Log Scale	2.866
95% t UCL (Assumes normality)	15.69	95% H-Stat UCL	571.5

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	15.96	95% GROS Adjusted Gamma UCL	24.13
95% Adjusted Gamma KM-UCL	46.45		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NAPHTHALENE

General Statistics

Total Number of Observations	19	Number of Distinct Observations	10
Number of Detects	2	Number of Non-Detects	17
Number of Distinct Detects	2	Number of Distinct Non-Detects	8
Minimum Detect	0.84	Minimum Non-Detect	0.004
Maximum Detect	5.3	Maximum Non-Detect	0.14
Variance Detects	9.946	Percent Non-Detects	89.47%
Mean Detects	3.07	SD Detects	3.154
Median Detects	3.07	CV Detects	1.027
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	0.747	SD of Logged Detects	1.303

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.327	Standard Error of Mean	0.385
SD	1.187	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.995	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.96	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.482	95% KM Chebyshev UCL	2.005
97.5% KM Chebyshev UCL	2.732	99% KM Chebyshev UCL	4.158

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.478	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.077	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	5.912	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0758	nu hat (KM)	2.88
		Adjusted Level of Significance (β)	0.0369
Approximate Chi Square Value (2.88, α)	0.338	Adjusted Chi Square Value (2.88, β)	0.279
95% Gamma Approximate KM-UCL (use when n>=50)	2.786	95% Gamma Adjusted KM-UCL (use when n<50)	3.371

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.324	Mean in Log Scale	-8.021
SD in Original Scale	1.22	SD in Log Scale	3.883
95% t UCL (assumes normality of ROS data)	0.809	95% Percentile Bootstrap UCL	0.881
95% BCA Bootstrap UCL	1.439	95% Bootstrap t UCL	271.2
95% H-UCL (Log ROS)	623.6		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.342	Mean in Log Scale	-3.603
SD in Original Scale	1.215	SD in Log Scale	1.756
95% t UCL (Assumes normality)	0.825	95% H-Stat UCL	0.619

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	23	Number of Distinct Observations	23
		Number of Missing Observations	0
Minimum	2.1	Mean	2278
Maximum	11600	Median	1300
SD	2906	Std. Error of Mean	605.9
Coefficient of Variation	1.276	Skewness	1.889

Normal GOF Test

Shapiro Wilk Test Statistic	0.774	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.217	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3318	95% Adjusted-CLT UCL (Chen-1995)	3529
		95% Modified-t UCL (Johnson-1978)	3358

Gamma GOF Test

A-D Test Statistic	1.061	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.836	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.197	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.195	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.357	k star (bias corrected MLE)	0.339
Theta hat (MLE)	6382	Theta star (bias corrected MLE)	6713
nu hat (MLE)	16.42	nu star (bias corrected)	15.61
MLE Mean (bias corrected)	2278	MLE Sd (bias corrected)	3910
		Approximate Chi Square Value (0.05)	7.687
Adjusted Level of Significance	0.0389	Adjusted Chi Square Value	7.285

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	4625	95% Adjusted Gamma UCL (use when n<50)	4880

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.812	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.185	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	0.742	Mean of logged Data	5.853
Maximum of Logged Data	9.359	SD of logged Data	2.994

Assuming Lognormal Distribution

95% H-UCL	1209753	90% Chebyshev (MVUE) UCL	48663
95% Chebyshev (MVUE) UCL	64084	97.5% Chebyshev (MVUE) UCL	85487
99% Chebyshev (MVUE) UCL	127530		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	3274	95% Jackknife UCL	3318
95% Standard Bootstrap UCL	3262	95% Bootstrap-t UCL	3835
95% Hall's Bootstrap UCL	3911	95% Percentile Bootstrap UCL	3354
95% BCA Bootstrap UCL	3542		
90% Chebyshev(Mean, Sd) UCL	4095	95% Chebyshev(Mean, Sd) UCL	4919
97.5% Chebyshev(Mean, Sd) UCL	6061	99% Chebyshev(Mean, Sd) UCL	8306

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	8306

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ANTIMONY

General Statistics

Total Number of Observations	24	Number of Distinct Observations	21
Number of Detects	5	Number of Non-Detects	19
Number of Distinct Detects	5	Number of Distinct Non-Detects	16
Minimum Detect	1.38	Minimum Non-Detect	0.0063
Maximum Detect	4.03	Maximum Non-Detect	5.97
Variance Detects	1.19	Percent Non-Detects	79.17%
Mean Detects	2.464	SD Detects	1.091
Median Detects	2.26	CV Detects	0.443
Skewness Detects	0.679	Kurtosis Detects	-0.872
Mean of Logged Detects	0.823	SD of Logged Detects	0.443

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.936	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.186	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.541	Standard Error of Mean	0.259
SD	1.111	95% KM (BCA) UCL	0.987
95% KM (t) UCL	0.985	95% KM (Percentile Bootstrap) UCL	0.962
95% KM (z) UCL	0.967	95% KM Bootstrap t UCL	0.783
90% KM Chebyshev UCL	1.318	95% KM Chebyshev UCL	1.67
97.5% KM Chebyshev UCL	2.158	99% KM Chebyshev UCL	3.118

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.244	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.68	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.214	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.358	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	6.53	k star (bias corrected MLE)	2.746
Theta hat (MLE)	0.377	Theta star (bias corrected MLE)	0.897
nu hat (MLE)	65.3	nu star (bias corrected)	27.46
MLE Mean (bias corrected)	2.464	MLE Sd (bias corrected)	1.487

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.237	nu hat (KM)	11.36
Approximate Chi Square Value (11.36, α)	4.81	Adjusted Chi Square Value (11.36, β)	4.513
95% Gamma Approximate KM-UCL (use when n>=50)	1.277	95% Gamma Adjusted KM-UCL (use when n<50)	1.361

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.521
Maximum	4.03	Median	0.01
SD	1.115	CV	2.139
k hat (MLE)	0.251	k star (bias corrected MLE)	0.248
Theta hat (MLE)	2.073	Theta star (bias corrected MLE)	2.104
nu hat (MLE)	12.07	nu star (bias corrected)	11.89
MLE Mean (bias corrected)	0.521	MLE Sd (bias corrected)	1.047
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (11.89, α)	5.156	Adjusted Chi Square Value (11.89, β)	4.847
95% Gamma Approximate UCL (use when n>=50)	1.202	95% Gamma Adjusted UCL (use when n<50)	1.279

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.958	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.187	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.776	Mean in Log Scale	-0.729
SD in Original Scale	0.998	SD in Log Scale	0.866
95% t UCL (assumes normality of ROS data)	1.125	95% Percentile Bootstrap UCL	1.1
95% BCA Bootstrap UCL	1.192	95% Bootstrap t UCL	1.367
95% H-UCL (Log ROS)	1.078		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.787	95% H-UCL (KM -Log)	5.149
KM SD (logged)	2.437	95% Critical H Value (KM-Log)	4.836
KM Standard Error of Mean (logged)	0.568		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.909	Mean in Log Scale	-1.687
SD in Original Scale	1.104	SD in Log Scale	2.698
95% t UCL (Assumes normality)	1.295	95% H-Stat UCL	138

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.985	95% KM (Percentile Bootstrap) UCL	0.962

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	29	Number of Distinct Observations	26
Number of Detects	17	Number of Non-Detects	12
Number of Distinct Detects	16	Number of Distinct Non-Detects	10
Minimum Detect	0.0019	Minimum Non-Detect	0.0011
Maximum Detect	32.8	Maximum Non-Detect	5.67
Variance Detects	68.15	Percent Non-Detects	41.38%
Mean Detects	4.094	SD Detects	8.255
Median Detects	1.9	CV Detects	2.016
Skewness Detects	3.138	Kurtosis Detects	10.08
Mean of Logged Detects	-0.709	SD of Logged Detects	3.237

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.494	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.445	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.486	Standard Error of Mean	1.233
SD	6.431	95% KM (BCA) UCL	4.598
95% KM (t) UCL	4.583	95% KM (Percentile Bootstrap) UCL	4.647
95% KM (z) UCL	4.514	95% KM Bootstrap t UCL	12.89
90% KM Chebyshev UCL	6.184	95% KM Chebyshev UCL	7.859
97.5% KM Chebyshev UCL	10.18	99% KM Chebyshev UCL	14.75

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.177	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.837	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.231	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.226	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.322	k star (bias corrected MLE)	0.304
Theta hat (MLE)	12.72	Theta star (bias corrected MLE)	13.46
nu hat (MLE)	10.94	nu star (bias corrected)	10.34
MLE Mean (bias corrected)	4.094	MLE Sd (bias corrected)	7.422

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.149	nu hat (KM)	8.667
Approximate Chi Square Value (8.67, α)	3.127	Adjusted Chi Square Value (8.67, β)	2.931
95% Gamma Approximate KM-UCL (use when n>=50)	6.89	95% Gamma Adjusted KM-UCL (use when n<50)	7.352

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
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Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0019	Mean	2.404
Maximum	32.8	Median	0.01
SD	6.568	CV	2.732
k hat (MLE)	0.226	k star (bias corrected MLE)	0.225
Theta hat (MLE)	10.65	Theta star (bias corrected MLE)	10.67
nu hat (MLE)	13.09	nu star (bias corrected)	13.07
MLE Mean (bias corrected)	2.404	MLE Sd (bias corrected)	5.064
		Adjusted Level of Significance (β)	0.0407
Approximate Chi Square Value (13.07, α)	5.941	Adjusted Chi Square Value (13.07, β)	5.655
95% Gamma Approximate UCL (use when n>=50)	5.29	95% Gamma Adjusted UCL (use when n<50)	5.557

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.761	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.315	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.404	Mean in Log Scale	-2.623
SD in Original Scale	6.568	SD in Log Scale	3.517
95% t UCL (assumes normality of ROS data)	4.479	95% Percentile Bootstrap UCL	4.549
95% BCA Bootstrap UCL	6.084	95% Bootstrap t UCL	13.81
95% H-UCL (Log ROS)	2498		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.654	Mean in Log Scale	-1.307
SD in Original Scale	6.496	SD in Log Scale	3.255
95% t UCL (Assumes normality)	4.706	95% H-Stat UCL	2133

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	14.75

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT

General Statistics

Total Number of Observations	23	Number of Distinct Observations	23
Number of Detects	8	Number of Non-Detects	15
Number of Distinct Detects	8	Number of Distinct Non-Detects	15
Minimum Detect	0.0065	Minimum Non-Detect	0.0053
Maximum Detect	1.47	Maximum Non-Detect	0.237
Variance Detects	0.268	Percent Non-Detects	65.22%
Mean Detects	0.752	SD Detects	0.517
Median Detects	0.61	CV Detects	0.688
Skewness Detects	0.149	Kurtosis Detects	-1.285
Mean of Logged Detects	-0.88	SD of Logged Detects	1.762

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.938	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.265	Standard Error of Mean	0.102
SD	0.456	95% KM (BCA) UCL	0.441
95% KM (t) UCL	0.44	95% KM (Percentile Bootstrap) UCL	0.427
95% KM (z) UCL	0.432	95% KM Bootstrap t UCL	0.465
90% KM Chebyshev UCL	0.57	95% KM Chebyshev UCL	0.708
97.5% KM Chebyshev UCL	0.9	99% KM Chebyshev UCL	1.277

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.648	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.25	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.302	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.972	k star (bias corrected MLE)	0.691
Theta hat (MLE)	0.774	Theta star (bias corrected MLE)	1.089
nu hat (MLE)	15.56	nu star (bias corrected)	11.06
MLE Mean (bias corrected)	0.752	MLE Sd (bias corrected)	0.905

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.338	nu hat (KM)	15.55
Approximate Chi Square Value (15.55, α)	7.648	Adjusted Chi Square Value (15.55, β)	7.248
95% Gamma Approximate KM-UCL (use when n>=50)	0.539	95% Gamma Adjusted KM-UCL (use when n<50)	0.569

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0065	Mean	0.268
Maximum	1.47	Median	0.01
SD	0.465	CV	1.732
k hat (MLE)	0.339	k star (bias corrected MLE)	0.324
Theta hat (MLE)	0.791	Theta star (bias corrected MLE)	0.828
nu hat (MLE)	15.6	nu star (bias corrected)	14.9
MLE Mean (bias corrected)	0.268	MLE Sd (bias corrected)	0.471
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (14.90, α)	7.189	Adjusted Chi Square Value (14.90, β)	6.803
95% Gamma Approximate UCL (use when n>=50)	0.556	95% Gamma Adjusted UCL (use when n<50)	0.587

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.697	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.308	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.265	Mean in Log Scale	-3.725
SD in Original Scale	0.466	SD in Log Scale	2.351
95% t UCL (assumes normality of ROS data)	0.432	95% Percentile Bootstrap UCL	0.429
95% BCA Bootstrap UCL	0.48	95% Bootstrap t UCL	0.482
95% H-UCL (Log ROS)	3.919		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.712	95% H-UCL (KM -Log)	3.029
KM SD (logged)	2.286	95% Critical H Value (KM-Log)	4.531
KM Standard Error of Mean (logged)	0.51		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.306	Mean in Log Scale	-2.696
SD in Original Scale	0.445	SD in Log Scale	2.247
95% t UCL (Assumes normality)	0.466	95% H-Stat UCL	7.164

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.44	95% KM (Percentile Bootstrap) UCL	0.427

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	30	Number of Distinct Observations	30
		Number of Missing Observations	0
Minimum	0.003	Mean	57.9
Maximum	1310	Median	2.255
SD	238.6	Std. Error of Mean	43.56
Coefficient of Variation	4.121	Skewness	5.328

Normal GOF Test

Shapiro Wilk Test Statistic	0.257	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.927	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.427	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.162	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	131.9	95% Adjusted-CLT UCL (Chen-1995)	174.8
		95% Modified-t UCL (Johnson-1978)	139

Gamma GOF Test

A-D Test Statistic	2.009	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.901	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.23	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.177	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.205	k star (bias corrected MLE)	0.207
Theta hat (MLE)	282.3	Theta star (bias corrected MLE)	280
nu hat (MLE)	12.31	nu star (bias corrected)	12.41
MLE Mean (bias corrected)	57.9	MLE Sd (bias corrected)	127.3
		Approximate Chi Square Value (0.05)	5.497
Adjusted Level of Significance	0.041	Adjusted Chi Square Value	5.233

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	130.7	95% Adjusted Gamma UCL (use when n<50)	137.3

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.977	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.927	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.109	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.162	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-5.809	Mean of logged Data	0.485
Maximum of Logged Data	7.178	SD of logged Data	3.094

Assuming Lognormal Distribution

95% H-UCL	5252	90% Chebyshev (MVUE) UCL	326
95% Chebyshev (MVUE) UCL	428.8	97.5% Chebyshev (MVUE) UCL	571.5
99% Chebyshev (MVUE) UCL	851.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	129.6	95% Jackknife UCL	131.9
95% Standard Bootstrap UCL	128.9	95% Bootstrap-t UCL	597.9
95% Hall's Bootstrap UCL	533.3	95% Percentile Bootstrap UCL	142.2
95% BCA Bootstrap UCL	193.7		
90% Chebyshev(Mean, Sd) UCL	188.6	95% Chebyshev(Mean, Sd) UCL	247.8
97.5% Chebyshev(Mean, Sd) UCL	330	99% Chebyshev(Mean, Sd) UCL	491.4

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	491.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MERCURY

General Statistics

Total Number of Observations	23	Number of Distinct Observations	18
Number of Detects	3	Number of Non-Detects	20
Number of Distinct Detects	3	Number of Distinct Non-Detects	15
Minimum Detect	0.0178	Minimum Non-Detect	9.1000E-5
Maximum Detect	0.0235	Maximum Non-Detect	0.0144
Variance Detects	8.3633E-6	Percent Non-Detects	86.96%
Mean Detects	0.0209	SD Detects	0.00289
Median Detects	0.0215	CV Detects	0.138
Skewness Detects	-0.848	Kurtosis Detects	N/A
Mean of Logged Detects	-3.873	SD of Logged Detects	0.142

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.971	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.244	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00281	Standard Error of Mean	0.00181
SD	0.00707	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00591	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00578	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00823	95% KM Chebyshev UCL	0.0107
97.5% KM Chebyshev UCL	0.0141	99% KM Chebyshev UCL	0.0208

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	76.01	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.7539E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	456.1	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.158	nu hat (KM)	7.262
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (7.26, α)	2.316	Adjusted Chi Square Value (7.26, β)	2.118
95% Gamma Approximate KM-UCL (use when n>=50)	0.00881	95% Gamma Adjusted KM-UCL (use when n<50)	0.00963

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.959	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0106	Mean in Log Scale	-4.6
SD in Original Scale	0.00432	SD in Log Scale	0.316
95% t UCL (assumes normality of ROS data)	0.0122	95% Percentile Bootstrap UCL	0.0122
95% BCA Bootstrap UCL	0.0125	95% Bootstrap t UCL	0.0133
95% H-UCL (Log ROS)	0.012		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-8.596	95% H-UCL (KM -Log)	0.00429
KM SD (logged)	1.83	95% Critical H Value (KM-Log)	3.772
KM Standard Error of Mean (logged)	0.467		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.00648	Mean in Log Scale	-6.357
SD in Original Scale	0.00652	SD in Log Scale	2.43
95% t UCL (Assumes normality)	0.00881	95% H-Stat UCL	0.394

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00591	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	21	Number of Distinct Observations	20
		Number of Missing Observations	0
Minimum	0.017	Mean	33.75
Maximum	304	Median	5.95
SD	75.3	Std. Error of Mean	16.43
Coefficient of Variation	2.231	Skewness	2.925

Normal GOF Test

Shapiro Wilk Test Statistic	0.503	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.413	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.09	95% Adjusted-CLT UCL (Chen-1995)	71.99
		95% Modified-t UCL (Johnson-1978)	63.84

Gamma GOF Test

A-D Test Statistic	0.91	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.873	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.189	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.208	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.247	k star (bias corrected MLE)	0.243
Theta hat (MLE)	136.9	Theta star (bias corrected MLE)	138.8
nu hat (MLE)	10.36	nu star (bias corrected)	10.21
MLE Mean (bias corrected)	33.75	MLE Sd (bias corrected)	68.46
		Approximate Chi Square Value (0.05)	4.074
Adjusted Level of Significance	0.0383	Adjusted Chi Square Value	3.78

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	84.6	95% Adjusted Gamma UCL (use when n<50)	91.18

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.854	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.908	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.233	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.193	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 1 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:59:16 PM
From File	SO-Area1-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-4.075	Mean of logged Data	0.632
Maximum of Logged Data	5.717	SD of logged Data	3.389

Assuming Lognormal Distribution

95% H-UCL	87821	90% Chebyshev (MVUE) UCL	653.4
95% Chebyshev (MVUE) UCL	866.1	97.5% Chebyshev (MVUE) UCL	1161
99% Chebyshev (MVUE) UCL	1741		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	60.78	95% Jackknife UCL	62.09
95% Standard Bootstrap UCL	59.91	95% Bootstrap-t UCL	106
95% Hall's Bootstrap UCL	79.12	95% Percentile Bootstrap UCL	62.59
95% BCA Bootstrap UCL	72.11		
90% Chebyshev(Mean, Sd) UCL	83.05	95% Chebyshev(Mean, Sd) UCL	105.4
97.5% Chebyshev(Mean, Sd) UCL	136.4	99% Chebyshev(Mean, Sd) UCL	197.2

Suggested UCL to Use

95% Adjusted Gamma UCL 91.18

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 1 Surface Soil (2-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:46:53 AM
From File	So-Area1-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROPROPANE

General Statistics

Total Number of Observations	139	Number of Distinct Observations	41
		Number of Missing Observations	15
Number of Detects	1	Number of Non-Detects	138
Number of Distinct Detects	1	Number of Distinct Non-Detects	40

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!

It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1,2-DICHLOROPROPANE was not processed!

Attachment F
ProUCL Output Area 1 Surface Soil (2-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:46:53 AM
From File	So-Area1-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	28	Number of Distinct Observations	27
		Number of Missing Observations	0
Minimum	0.0088	Mean	18.1
Maximum	144	Median	7.11
SD	31.71	Std. Error of Mean	5.993
Coefficient of Variation	1.752	Skewness	2.927

Normal GOF Test

Shapiro Wilk Test Statistic	0.59	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.337	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	28.31	95% Adjusted-CLT UCL (Chen-1995)	31.5
		95% Modified-t UCL (Johnson-1978)	28.86

Gamma GOF Test

A-D Test Statistic	1.111	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.848	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.179	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.179	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Attachment F
ProUCL Output Area 1 Surface Soil (2-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:46:53 AM
From File	So-Area1-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Statistics

k hat (MLE)	0.326	k star (bias corrected MLE)	0.315
Theta hat (MLE)	55.48	Theta star (bias corrected MLE)	57.44
nu hat (MLE)	18.27	nu star (bias corrected)	17.65
MLE Mean (bias corrected)	18.1	MLE Sd (bias corrected)	32.24
		Approximate Chi Square Value (0.05)	9.135
Adjusted Level of Significance	0.0404	Adjusted Chi Square Value	8.757

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	34.96	95% Adjusted Gamma UCL (use when n<50)	36.47

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.794	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.924	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.284	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.167	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.733	Mean of logged Data	0.811
Maximum of Logged Data	4.97	SD of logged Data	3.193

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/8/2014 10:46:53 AM
From File	So-Area1-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Lognormal Distribution

95% H-UCL	13168	90% Chebyshev (MVUE) UCL	565.9
95% Chebyshev (MVUE) UCL	746.2	97.5% Chebyshev (MVUE) UCL	996.6
99% Chebyshev (MVUE) UCL	1488		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	27.96	95% Jackknife UCL	28.31
95% Standard Bootstrap UCL	27.85	95% Bootstrap-t UCL	36.37
95% Hall's Bootstrap UCL	33.24	95% Percentile Bootstrap UCL	28.94
95% BCA Bootstrap UCL	32.7		
90% Chebyshev(Mean, Sd) UCL	36.08	95% Chebyshev(Mean, Sd) UCL	44.22
97.5% Chebyshev(Mean, Sd) UCL	55.53	99% Chebyshev(Mean, Sd) UCL	77.73

Suggested UCL to Use

95% Adjusted Gamma UCL	36.47

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

XYLENES,TOTAL

General Statistics

Total Number of Observations	6	Number of Distinct Observations	6
Number of Detects	2	Number of Non-Detects	4
Number of Distinct Detects	2	Number of Distinct Non-Detects	4
Minimum Detect	0.023	Minimum Non-Detect	0.05
Maximum Detect	0.27	Maximum Non-Detect	0.16
Variance Detects	0.0305	Percent Non-Detects	66.67%
Mean Detects	0.147	SD Detects	0.175
Median Detects	0.147	CV Detects	1.192
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-2.541	SD of Logged Detects	1.742

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0642	Standard Error of Mean	0.0531
SD	0.0921	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.171	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.152	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.224	95% KM Chebyshev UCL	0.296
97.5% KM Chebyshev UCL	0.396	99% KM Chebyshev UCL	0.593

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.938	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.156	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	3.752	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.486	nu hat (KM)	5.831
		Adjusted Level of Significance (β)	0.0122
Approximate Chi Square Value (5.83, α)	1.554	Adjusted Chi Square Value (5.83, β)	0.89
95% Gamma Approximate KM-UCL (use when n>=50)	0.241	95% Gamma Adjusted KM-UCL (use when n<50)	0.42

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0642	Mean in Log Scale	-3.362
SD in Original Scale	0.101	SD in Log Scale	1.005
95% t UCL (assumes normality of ROS data)	0.147	95% Percentile Bootstrap UCL	N/A
95% BCA Bootstrap UCL	N/A	95% Bootstrap t UCL	N/A
95% H-UCL (Log ROS)	0.371		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0872	Mean in Log Scale	-2.807
SD in Original Scale	0.0924	SD in Log Scale	0.899
95% t UCL (Assumes normality)	0.163	95% H-Stat UCL	0.41

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.396

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)ANTHRACENE

General Statistics

Total Number of Observations	18	Number of Distinct Observations	12
Number of Detects	5	Number of Non-Detects	13
Number of Distinct Detects	5	Number of Distinct Non-Detects	7
Minimum Detect	0.009	Minimum Non-Detect	0.004
Maximum Detect	1	Maximum Non-Detect	0.041
Variance Detects	0.26	Percent Non-Detects	72.22%
Mean Detects	0.423	SD Detects	0.51
Median Detects	0.1	CV Detects	1.206
Skewness Detects	0.594	Kurtosis Detects	-3.287
Mean of Logged Detects	-2.031	SD of Logged Detects	2.03

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.744	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.337	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.121	Standard Error of Mean	0.0803
SD	0.305	95% KM (BCA) UCL	0.281
95% KM (t) UCL	0.261	95% KM (Percentile Bootstrap) UCL	0.238
95% KM (z) UCL	0.253	95% KM Bootstrap t UCL	1.084
90% KM Chebyshev UCL	0.362	95% KM Chebyshev UCL	0.471
97.5% KM Chebyshev UCL	0.623	99% KM Chebyshev UCL	0.92

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.439	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.709	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.27	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.371	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.537	k star (bias corrected MLE)	0.348
Theta hat (MLE)	0.787	Theta star (bias corrected MLE)	1.215
nu hat (MLE)	5.369	nu star (bias corrected)	3.481
MLE Mean (bias corrected)	0.423	MLE Sd (bias corrected)	0.717

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.159	nu hat (KM)	5.717
Approximate Chi Square Value (5.72, α)	1.497	Adjusted Chi Square Value (5.72, β)	1.301
95% Gamma Approximate KM-UCL (use when n>=50)	0.463	95% Gamma Adjusted KM-UCL (use when n<50)	0.533

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.009	Mean	0.125
Maximum	1	Median	0.01
SD	0.312	CV	2.503
k hat (MLE)	0.369	k star (bias corrected MLE)	0.344
Theta hat (MLE)	0.338	Theta star (bias corrected MLE)	0.362
nu hat (MLE)	13.28	nu star (bias corrected)	12.4
MLE Mean (bias corrected)	0.125	MLE Sd (bias corrected)	0.212
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (12.40, α)	5.489	Adjusted Chi Square Value (12.40, β)	5.054
95% Gamma Approximate UCL (use when n>=50)	0.282	95% Gamma Adjusted UCL (use when n<50)	0.306

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.908	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.237	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.118	Mean in Log Scale	-6.168
SD in Original Scale	0.315	SD in Log Scale	3.126
95% t UCL (assumes normality of ROS data)	0.247	95% Percentile Bootstrap UCL	0.232
95% BCA Bootstrap UCL	0.289	95% Bootstrap t UCL	1.618
95% H-UCL (Log ROS)	35.93		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.387	95% H-UCL (KM -Log)	0.322
KM SD (logged)	1.774	95% Critical H Value (KM-Log)	3.909
KM Standard Error of Mean (logged)	0.497		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.129	Mean in Log Scale	-3.717
SD in Original Scale	0.311	SD in Log Scale	1.622
95% t UCL (Assumes normality)	0.256	95% H-Stat UCL	0.379

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.261	95% KM (Percentile Bootstrap) UCL	0.238

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	18	Number of Distinct Observations	11
Number of Detects	6	Number of Non-Detects	12
Number of Distinct Detects	6	Number of Distinct Non-Detects	6
Minimum Detect	0.011	Minimum Non-Detect	0.004
Maximum Detect	1.4	Maximum Non-Detect	0.041
Variance Detects	0.384	Percent Non-Detects	66.67%
Mean Detects	0.462	SD Detects	0.62
Median Detects	0.11	CV Detects	1.342
Skewness Detects	1.045	Kurtosis Detects	-1.279
Mean of Logged Detects	-1.974	SD of Logged Detects	1.899

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.747	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.359	Lilliefors GOF Test
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.158	Standard Error of Mean	0.101
SD	0.391	95% KM (BCA) UCL	0.348
95% KM (t) UCL	0.334	95% KM (Percentile Bootstrap) UCL	0.315
95% KM (z) UCL	0.324	95% KM Bootstrap t UCL	1.527
90% KM Chebyshev UCL	0.461	95% KM Chebyshev UCL	0.598
97.5% KM Chebyshev UCL	0.788	99% KM Chebyshev UCL	1.162

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.433	Anderson-Darling GOF Test
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.246	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.348	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.525	k star (bias corrected MLE)	0.374
Theta hat (MLE)	0.88	Theta star (bias corrected MLE)	1.236
nu hat (MLE)	6.298	nu star (bias corrected)	4.482
MLE Mean (bias corrected)	0.462	MLE Sd (bias corrected)	0.756

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.163	nu hat (KM)	5.874
Approximate Chi Square Value (5.87, α)	1.576	Adjusted Chi Square Value (5.87, β)	1.373
95% Gamma Approximate KM-UCL (use when n>=50)	0.589	95% Gamma Adjusted KM-UCL (use when n<50)	0.676

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.161
Maximum	1.4	Median	0.01
SD	0.401	CV	2.498
k hat (MLE)	0.353	k star (bias corrected MLE)	0.332
Theta hat (MLE)	0.454	Theta star (bias corrected MLE)	0.484
nu hat (MLE)	12.73	nu star (bias corrected)	11.94
MLE Mean (bias corrected)	0.161	MLE Sd (bias corrected)	0.279
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (11.94, α)	5.186	Adjusted Chi Square Value (11.94, β)	4.764
95% Gamma Approximate UCL (use when n>=50)	0.37	95% Gamma Adjusted UCL (use when n<50)	0.402

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.936	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.195	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.155	Mean in Log Scale	-5.566
SD in Original Scale	0.403	SD in Log Scale	3.064
95% t UCL (assumes normality of ROS data)	0.32	95% Percentile Bootstrap UCL	0.312
95% BCA Bootstrap UCL	0.394	95% Bootstrap t UCL	1.672
95% H-UCL (Log ROS)	45.07		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.152	95% H-UCL (KM -Log)	0.583
KM SD (logged)	1.874	95% Critical H Value (KM-Log)	4.086
KM Standard Error of Mean (logged)	0.52		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.164	Mean in Log Scale	-3.586
SD in Original Scale	0.4	SD in Log Scale	1.713
95% t UCL (Assumes normality)	0.328	95% H-Stat UCL	0.582

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.334	95% KM (Percentile Bootstrap) UCL	0.315

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	18	Number of Distinct Observations	13
Number of Detects	7	Number of Non-Detects	11
Number of Distinct Detects	7	Number of Distinct Non-Detects	6
Minimum Detect	0.018	Minimum Non-Detect	0.004
Maximum Detect	2.4	Maximum Non-Detect	0.041
Variance Detects	0.993	Percent Non-Detects	61.11%
Mean Detects	0.666	SD Detects	0.997
Median Detects	0.11	CV Detects	1.496
Skewness Detects	1.342	Kurtosis Detects	-0.0662
Mean of Logged Detects	-1.703	SD of Logged Detects	1.826

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.694	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.391	Lilliefors GOF Test
5% Lilliefors Critical Value	0.335	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.264	Standard Error of Mean	0.168
SD	0.659	95% KM (BCA) UCL	0.564
95% KM (t) UCL	0.556	95% KM (Percentile Bootstrap) UCL	0.539
95% KM (z) UCL	0.54	95% KM Bootstrap t UCL	2.977
90% KM Chebyshev UCL	0.767	95% KM Chebyshev UCL	0.995
97.5% KM Chebyshev UCL	1.311	99% KM Chebyshev UCL	1.933

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.618	Anderson-Darling GOF Test
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.285	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.328	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.491	k star (bias corrected MLE)	0.376
Theta hat (MLE)	1.356	Theta star (bias corrected MLE)	1.772
nu hat (MLE)	6.877	nu star (bias corrected)	5.263
MLE Mean (bias corrected)	0.666	MLE Sd (bias corrected)	1.086

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.16	nu hat (KM)	5.771
Approximate Chi Square Value (5.77, α)	1.524	Adjusted Chi Square Value (5.77, β)	1.325
95% Gamma Approximate KM-UCL (use when n>=50)	0.999	95% Gamma Adjusted KM-UCL (use when n<50)	1.148

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.265
Maximum	2.4	Median	0.01
SD	0.677	CV	2.555
k hat (MLE)	0.318	k star (bias corrected MLE)	0.302
Theta hat (MLE)	0.834	Theta star (bias corrected MLE)	0.878
nu hat (MLE)	11.44	nu star (bias corrected)	10.87
MLE Mean (bias corrected)	0.265	MLE Sd (bias corrected)	0.482
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (10.87, α)	4.492	Adjusted Chi Square Value (10.87, β)	4.105
95% Gamma Approximate UCL (use when n>=50)	0.641	95% Gamma Adjusted UCL (use when n<50)	0.702

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.916	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.183	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.261	Mean in Log Scale	-4.767
SD in Original Scale	0.679	SD in Log Scale	2.925
95% t UCL (assumes normality of ROS data)	0.539	95% Percentile Bootstrap UCL	0.529
95% BCA Bootstrap UCL	0.667	95% Bootstrap t UCL	3.349
95% H-UCL (Log ROS)	44.35		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.786	95% H-UCL (KM -Log)	1.569
KM SD (logged)	2.036	95% Critical H Value (KM-Log)	4.38
KM Standard Error of Mean (logged)	0.578		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.268	Mean in Log Scale	-3.373
SD in Original Scale	0.676	SD in Log Scale	1.881
95% t UCL (Assumes normality)	0.545	95% H-Stat UCL	1.304

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.556	95% GROS Adjusted Gamma UCL	0.702
95% Adjusted Gamma KM-UCL	1.148		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	18	Number of Distinct Observations	10
Number of Detects	3	Number of Non-Detects	15
Number of Distinct Detects	3	Number of Distinct Non-Detects	7
Minimum Detect	0.057	Minimum Non-Detect	0.019
Maximum Detect	8	Maximum Non-Detect	0.094
Variance Detects	19.18	Percent Non-Detects	83.33%
Mean Detects	2.962	SD Detects	4.38
Median Detects	0.83	CV Detects	1.479
Skewness Detects	1.672	Kurtosis Detects	N/A
Mean of Logged Detects	-0.324	SD of Logged Detects	2.475

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.822	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.353	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.51	Standard Error of Mean	0.527
SD	1.826	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1.427	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1.377	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	2.091	95% KM Chebyshev UCL	2.808
97.5% KM Chebyshev UCL	3.802	99% KM Chebyshev UCL	5.755

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.457	k star (bias corrected MLE)	N/A
Theta hat (MLE)	6.483	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	2.742	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.078	nu hat (KM)	2.807
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (2.81, α)	0.318	Adjusted Chi Square Value (2.81, β)	0.257
95% Gamma Approximate KM-UCL (use when n>=50)	4.507	95% Gamma Adjusted KM-UCL (use when n<50)	5.559

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.998	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.189	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.494	Mean in Log Scale	-9.879
SD in Original Scale	1.883	SD in Log Scale	5.289
95% t UCL (assumes normality of ROS data)	1.266	95% Percentile Bootstrap UCL	1.379
95% BCA Bootstrap UCL	1.827	95% Bootstrap t UCL	69.48
95% H-UCL (Log ROS)	49300713		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.348	95% H-UCL (KM -Log)	0.492
KM SD (logged)	1.587	95% Critical H Value (KM-Log)	3.583
KM Standard Error of Mean (logged)	0.459		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.511	Mean in Log Scale	-3.368
SD in Original Scale	1.879	SD in Log Scale	1.691
95% t UCL (Assumes normality)	1.281	95% H-Stat UCL	0.675

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.427	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DIBENZO(A,H)ANTHRACENE

General Statistics

Total Number of Observations	18	Number of Distinct Observations	9
Number of Detects	4	Number of Non-Detects	14
Number of Distinct Detects	4	Number of Distinct Non-Detects	7
Minimum Detect	0.004	Minimum Non-Detect	0.004
Maximum Detect	0.34	Maximum Non-Detect	0.041
Variance Detects	0.0258	Percent Non-Detects	77.78%
Mean Detects	0.156	SD Detects	0.161
Median Detects	0.14	CV Detects	1.03
Skewness Detects	0.281	Kurtosis Detects	-3.949
Mean of Logged Detects	-2.812	SD of Logged Detects	2.035

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.265	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0379	Standard Error of Mean	0.0248
SD	0.0911	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.081	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0787	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.112	95% KM Chebyshev UCL	0.146
97.5% KM Chebyshev UCL	0.193	99% KM Chebyshev UCL	0.285

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.315	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.675	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.282	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.407	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.642	k star (bias corrected MLE)	0.327
Theta hat (MLE)	0.243	Theta star (bias corrected MLE)	0.477
nu hat (MLE)	5.133	nu star (bias corrected)	2.617
MLE Mean (bias corrected)	0.156	MLE Sd (bias corrected)	0.273

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.173	nu hat (KM)	6.239
Approximate Chi Square Value (6.24, α)	1.763	Adjusted Chi Square Value (6.24, β)	1.545
95% Gamma Approximate KM-UCL (use when n>=50)	0.134	95% Gamma Adjusted KM-UCL (use when n<50)	0.153

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	0.0424
Maximum	0.34	Median	0.01
SD	0.092	CV	2.167
k hat (MLE)	0.591	k star (bias corrected MLE)	0.53
Theta hat (MLE)	0.0718	Theta star (bias corrected MLE)	0.0801
nu hat (MLE)	21.29	nu star (bias corrected)	19.07
MLE Mean (bias corrected)	0.0424	MLE Sd (bias corrected)	0.0583
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (19.07, α)	10.17	Adjusted Chi Square Value (19.07, β)	9.551
95% Gamma Approximate UCL (use when n>=50)	0.0796	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.905	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.252	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0353	Mean in Log Scale	-7.02
SD in Original Scale	0.0947	SD in Log Scale	2.862
95% t UCL (assumes normality of ROS data)	0.0741	95% Percentile Bootstrap UCL	0.0756
95% BCA Bootstrap UCL	0.0913	95% Bootstrap t UCL	0.364
95% H-UCL (Log ROS)	3.264		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.911	95% H-UCL (KM -Log)	0.06
KM SD (logged)	1.403	95% Critical H Value (KM-Log)	3.271
KM Standard Error of Mean (logged)	0.384		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.047	Mean in Log Scale	-4
SD in Original Scale	0.0905	SD in Log Scale	1.291
95% t UCL (Assumes normality)	0.0841	95% H-Stat UCL	0.111

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.081	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	18	Number of Distinct Observations	11
Number of Detects	5	Number of Non-Detects	13
Number of Distinct Detects	5	Number of Distinct Non-Detects	6
Minimum Detect	0.007	Minimum Non-Detect	0.004
Maximum Detect	1.2	Maximum Non-Detect	0.041
Variance Detects	0.288	Percent Non-Detects	72.22%
Mean Detects	0.425	SD Detects	0.537
Median Detects	0.08	CV Detects	1.262
Skewness Detects	0.931	Kurtosis Detects	-1.41
Mean of Logged Detects	-2.073	SD of Logged Detects	2.092

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.81	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.34	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.122	Standard Error of Mean	0.0832
SD	0.316	95% KM (BCA) UCL	0.278
95% KM (t) UCL	0.266	95% KM (Percentile Bootstrap) UCL	0.256
95% KM (z) UCL	0.258	95% KM Bootstrap t UCL	1.346
90% KM Chebyshev UCL	0.371	95% KM Chebyshev UCL	0.484
97.5% KM Chebyshev UCL	0.641	99% KM Chebyshev UCL	0.949

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.353	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.71	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.274	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.371	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.518	k star (bias corrected MLE)	0.341
Theta hat (MLE)	0.821	Theta star (bias corrected MLE)	1.249
nu hat (MLE)	5.183	nu star (bias corrected)	3.407
MLE Mean (bias corrected)	0.425	MLE Sd (bias corrected)	0.729

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.149	nu hat (KM)	5.352
Approximate Chi Square Value (5.35, α)	1.318	Adjusted Chi Square Value (5.35, β)	1.138
95% Gamma Approximate KM-UCL (use when n>=50)	0.494	95% Gamma Adjusted KM-UCL (use when n<50)	0.572

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.007	Mean	0.125
Maximum	1.2	Median	0.01
SD	0.323	CV	2.578
k hat (MLE)	0.366	k star (bias corrected MLE)	0.342
Theta hat (MLE)	0.343	Theta star (bias corrected MLE)	0.367
nu hat (MLE)	13.17	nu star (bias corrected)	12.3
MLE Mean (bias corrected)	0.125	MLE Sd (bias corrected)	0.214
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (12.30, α)	5.429	Adjusted Chi Square Value (12.30, β)	4.996
95% Gamma Approximate UCL (use when n>=50)	0.284	95% Gamma Adjusted UCL (use when n<50)	0.309

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.208	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.119	Mean in Log Scale	-6.427
SD in Original Scale	0.326	SD in Log Scale	3.346
95% t UCL (assumes normality of ROS data)	0.253	95% Percentile Bootstrap UCL	0.255
95% BCA Bootstrap UCL	0.312	95% Bootstrap t UCL	1.708
95% H-UCL (Log ROS)	112.3		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.45	95% H-UCL (KM -Log)	0.316
KM SD (logged)	1.786	95% Critical H Value (KM-Log)	3.931
KM Standard Error of Mean (logged)	0.485		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.13	Mean in Log Scale	-3.726
SD in Original Scale	0.322	SD in Log Scale	1.627
95% t UCL (Assumes normality)	0.261	95% H-Stat UCL	0.382

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.266	95% KM (Percentile Bootstrap) UCL	0.256

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	2560	Mean	8185
Maximum	20600	Median	7800
SD	5421	Std. Error of Mean	1504
Coefficient of Variation	0.662	Skewness	1.225

Normal GOF Test

Shapiro Wilk Test Statistic	0.868	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.22	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	10864	95% Adjusted-CLT UCL (Chen-1995)	11203
		95% Modified-t UCL (Johnson-1978)	10950

Gamma GOF Test

A-D Test Statistic	0.365	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.74	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.147	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.239	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.709	k star (bias corrected MLE)	2.135
Theta hat (MLE)	3022	Theta star (bias corrected MLE)	3834
nu hat (MLE)	70.43	nu star (bias corrected)	55.51
MLE Mean (bias corrected)	8185	MLE Sd (bias corrected)	5602
		Approximate Chi Square Value (0.05)	39.39
Adjusted Level of Significance	0.0301	Adjusted Chi Square Value	37.46

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	11535	95% Adjusted Gamma UCL (use when n<50)	12129

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.186	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	7.848	Mean of logged Data	8.814
Maximum of Logged Data	9.933	SD of logged Data	0.658

Assuming Lognormal Distribution

95% H-UCL	12966	90% Chebyshev (MVUE) UCL	12872
95% Chebyshev (MVUE) UCL	14990	97.5% Chebyshev (MVUE) UCL	17930
99% Chebyshev (MVUE) UCL	23704		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	10658	95% Jackknife UCL	10864
95% Standard Bootstrap UCL	10593	95% Bootstrap-t UCL	11952
95% Hall's Bootstrap UCL	14901	95% Percentile Bootstrap UCL	10630
95% BCA Bootstrap UCL	10836		
90% Chebyshev(Mean, Sd) UCL	12695	95% Chebyshev(Mean, Sd) UCL	14739
97.5% Chebyshev(Mean, Sd) UCL	17574	99% Chebyshev(Mean, Sd) UCL	23145

Suggested UCL to Use

95% Student's-t UCL	10864

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	14	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	1.3	Mean	3.162
Maximum	7.39	Median	2.93
SD	1.458	Std. Error of Mean	0.39
Coefficient of Variation	0.461	Skewness	2.031

Normal GOF Test

Shapiro Wilk Test Statistic	0.792	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.303	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.852	95% Adjusted-CLT UCL (Chen-1995)	4.029
		95% Modified-t UCL (Johnson-1978)	3.887

Gamma GOF Test

A-D Test Statistic	0.667	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.244	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.229	Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	6.417	k star (bias corrected MLE)	5.09
Theta hat (MLE)	0.493	Theta star (bias corrected MLE)	0.621
nu hat (MLE)	179.7	nu star (bias corrected)	142.5
MLE Mean (bias corrected)	3.162	MLE Sd (bias corrected)	1.402
		Approximate Chi Square Value (0.05)	115.9
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	112.7

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	3.887	95% Adjusted Gamma UCL (use when n<50)	3.997

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.237	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	0.262	Mean of logged Data	1.071
Maximum of Logged Data	2	SD of logged Data	0.404

Assuming Lognormal Distribution

95% H-UCL	3.956	90% Chebyshev (MVUE) UCL	4.186
95% Chebyshev (MVUE) UCL	4.656	97.5% Chebyshev (MVUE) UCL	5.309
99% Chebyshev (MVUE) UCL	6.591		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	3.803	95% Jackknife UCL	3.852
95% Standard Bootstrap UCL	3.787	95% Bootstrap-t UCL	4.464
95% Hall's Bootstrap UCL	7.687	95% Percentile Bootstrap UCL	3.812
95% BCA Bootstrap UCL	3.987		
90% Chebyshev(Mean, Sd) UCL	4.331	95% Chebyshev(Mean, Sd) UCL	4.86
97.5% Chebyshev(Mean, Sd) UCL	5.595	99% Chebyshev(Mean, Sd) UCL	7.038

Suggested UCL to Use

95% Adjusted Gamma UCL	3.997

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	0.402	Mean	2.279
Maximum	6.63	Median	1.9
SD	2.068	Std. Error of Mean	0.574
Coefficient of Variation	0.907	Skewness	1.126

Normal GOF Test

Shapiro Wilk Test Statistic	0.83	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.211	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3.301	95% Adjusted-CLT UCL (Chen-1995)	3.414
		95% Modified-t UCL (Johnson-1978)	3.331

Gamma GOF Test

A-D Test Statistic	0.486	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.752	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.184	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.241	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.395	k star (bias corrected MLE)	1.125
Theta hat (MLE)	1.633	Theta star (bias corrected MLE)	2.026
nu hat (MLE)	36.28	nu star (bias corrected)	29.24
MLE Mean (bias corrected)	2.279	MLE Sd (bias corrected)	2.149
		Approximate Chi Square Value (0.05)	17.9
Adjusted Level of Significance	0.0301	Adjusted Chi Square Value	16.64

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	3.723	95% Adjusted Gamma UCL (use when n<50)	4.004

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.93	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.148	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-0.911	Mean of logged Data	0.424
Maximum of Logged Data	1.892	SD of logged Data	0.952

Assuming Lognormal Distribution

95% H-UCL	5.139	90% Chebyshev (MVUE) UCL	4.245
95% Chebyshev (MVUE) UCL	5.129	97.5% Chebyshev (MVUE) UCL	6.355
99% Chebyshev (MVUE) UCL	8.763		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	3.222	95% Jackknife UCL	3.301
95% Standard Bootstrap UCL	3.183	95% Bootstrap-t UCL	3.6
95% Hall's Bootstrap UCL	3.255	95% Percentile Bootstrap UCL	3.262
95% BCA Bootstrap UCL	3.343		
90% Chebyshev(Mean, Sd) UCL	4	95% Chebyshev(Mean, Sd) UCL	4.779
97.5% Chebyshev(Mean, Sd) UCL	5.861	99% Chebyshev(Mean, Sd) UCL	7.986

Suggested UCL to Use

95% Student's-t UCL	3.301

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	14	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	2.22	Mean	102.3
Maximum	540	Median	19.45
SD	157.9	Std. Error of Mean	42.19
Coefficient of Variation	1.542	Skewness	2.025

Normal GOF Test

Shapiro Wilk Test Statistic	0.695	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.264	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	177.1	95% Adjusted-CLT UCL (Chen-1995)	196.1
		95% Modified-t UCL (Johnson-1978)	180.9

Gamma GOF Test

A-D Test Statistic	0.576	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.793	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.209	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.242	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.5	k star (bias corrected MLE)	0.441
Theta hat (MLE)	204.5	Theta star (bias corrected MLE)	232.2
nu hat (MLE)	14.01	nu star (bias corrected)	12.34
MLE Mean (bias corrected)	102.3	MLE Sd (bias corrected)	154.1
		Approximate Chi Square Value (0.05)	5.454
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	4.859

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	231.6	95% Adjusted Gamma UCL (use when n<50)	260

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.943	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.874	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.134	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.237	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	0.798	Mean of logged Data	3.359
Maximum of Logged Data	6.292	SD of logged Data	1.783

Assuming Lognormal Distribution

95% H-UCL	1149	90% Chebyshev (MVUE) UCL	292.9
95% Chebyshev (MVUE) UCL	375	97.5% Chebyshev (MVUE) UCL	488.8
99% Chebyshev (MVUE) UCL	712.6		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	171.7	95% Jackknife UCL	177.1
95% Standard Bootstrap UCL	169.7	95% Bootstrap-t UCL	237.2
95% Hall's Bootstrap UCL	222.7	95% Percentile Bootstrap UCL	173.7
95% BCA Bootstrap UCL	198.8		
90% Chebyshev(Mean, Sd) UCL	228.9	95% Chebyshev(Mean, Sd) UCL	286.2
97.5% Chebyshev(Mean, Sd) UCL	365.8	99% Chebyshev(Mean, Sd) UCL	522.1

Suggested UCL to Use

95% Adjusted Gamma UCL 260

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MANGANESE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	16.3	Mean	67.14
Maximum	275	Median	41.3
SD	73.34	Std. Error of Mean	20.34
Coefficient of Variation	1.092	Skewness	2.237

Normal GOF Test

Shapiro Wilk Test Statistic	0.712	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.244	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	103.4	95% Adjusted-CLT UCL (Chen-1995)	114.1
		95% Modified-t UCL (Johnson-1978)	105.5

Gamma GOF Test

A-D Test Statistic	0.609	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.752	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.198	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.241	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.38	k star (bias corrected MLE)	1.113
Theta hat (MLE)	48.64	Theta star (bias corrected MLE)	60.32
nu hat (MLE)	35.89	nu star (bias corrected)	28.94
MLE Mean (bias corrected)	67.14	MLE Sd (bias corrected)	63.64
		Approximate Chi Square Value (0.05)	17.66
Adjusted Level of Significance	0.0301	Adjusted Chi Square Value	16.42

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	110	95% Adjusted Gamma UCL (use when n<50)	118.4

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.926	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.18	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	2.791	Mean of logged Data	3.803
Maximum of Logged Data	5.617	SD of logged Data	0.888

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Lognormal Distribution

95% H-UCL	131.3	90% Chebyshev (MVUE) UCL	114.2
95% Chebyshev (MVUE) UCL	137	97.5% Chebyshev (MVUE) UCL	168.7
99% Chebyshev (MVUE) UCL	230.8		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	100.6	95% Jackknife UCL	103.4
95% Standard Bootstrap UCL	98.62	95% Bootstrap-t UCL	152
95% Hall's Bootstrap UCL	254.4	95% Percentile Bootstrap UCL	103.4
95% BCA Bootstrap UCL	109.8		
90% Chebyshev(Mean, Sd) UCL	128.2	95% Chebyshev(Mean, Sd) UCL	155.8
97.5% Chebyshev(Mean, Sd) UCL	194.2	99% Chebyshev(Mean, Sd) UCL	269.5

Suggested UCL to Use

95% Student's-t UCL 103.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

THALLIUM

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
Number of Detects	7	Number of Non-Detects	6
Number of Distinct Detects	7	Number of Distinct Non-Detects	6
Minimum Detect	0.555	Minimum Non-Detect	0.392
Maximum Detect	2.39	Maximum Non-Detect	1.71
Variance Detects	0.442	Percent Non-Detects	46.15%
Mean Detects	1.295	SD Detects	0.665
Median Detects	1.05	CV Detects	0.513
Skewness Detects	0.658	Kurtosis Detects	-0.797
Mean of Logged Detects	0.143	SD of Logged Detects	0.524

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.215	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.919	Standard Error of Mean	0.192
SD	0.627	95% KM (BCA) UCL	1.221
95% KM (t) UCL	1.262	95% KM (Percentile Bootstrap) UCL	1.218
95% KM (z) UCL	1.235	95% KM Bootstrap t UCL	1.329
90% KM Chebyshev UCL	1.496	95% KM Chebyshev UCL	1.758
97.5% KM Chebyshev UCL	2.121	99% KM Chebyshev UCL	2.834

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.309	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.71	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.313	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.485	k star (bias corrected MLE)	2.658
Theta hat (MLE)	0.289	Theta star (bias corrected MLE)	0.487
nu hat (MLE)	62.78	nu star (bias corrected)	37.21
MLE Mean (bias corrected)	1.295	MLE Sd (bias corrected)	0.795

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	2.145	nu hat (KM)	55.77
Approximate Chi Square Value (55.77, α)	39.6	Adjusted Chi Square Value (55.77, β)	37.67
95% Gamma Approximate KM-UCL (use when n>=50)	1.293	95% Gamma Adjusted KM-UCL (use when n<50)	1.36

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0599	Mean	0.789
Maximum	2.39	Median	0.555
SD	0.751	CV	0.951
k hat (MLE)	0.879	k star (bias corrected MLE)	0.727
Theta hat (MLE)	0.898	Theta star (bias corrected MLE)	1.085
nu hat (MLE)	22.86	nu star (bias corrected)	18.91
MLE Mean (bias corrected)	0.789	MLE Sd (bias corrected)	0.926
		Adjusted Level of Significance (β)	0.0301
Approximate Chi Square Value (18.91, α)	10.06	Adjusted Chi Square Value (18.91, β)	9.147
95% Gamma Approximate UCL (use when n>=50)	1.485	95% Gamma Adjusted UCL (use when n<50)	1.632

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.192	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.89	Mean in Log Scale	-0.34
SD in Original Scale	0.659	SD in Log Scale	0.679
95% t UCL (assumes normality of ROS data)	1.216	95% Percentile Bootstrap UCL	1.17
95% BCA Bootstrap UCL	1.245	95% Bootstrap t UCL	1.361
95% H-UCL (Log ROS)	1.418		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-0.293	95% H-UCL (KM -Log)	1.374
KM SD (logged)	0.629	95% Critical H Value (KM-Log)	2.273
KM Standard Error of Mean (logged)	0.197		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.883	Mean in Log Scale	-0.45
SD in Original Scale	0.69	SD in Log Scale	0.889
95% t UCL (Assumes normality)	1.224	95% H-Stat UCL	1.875

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.262	95% KM (Percentile Bootstrap) UCL	1.218

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	13	Number of Distinct Observations	13
		Number of Missing Observations	0
Minimum	14.4	Mean	22.34
Maximum	43.7	Median	19.4
SD	8.137	Std. Error of Mean	2.257
Coefficient of Variation	0.364	Skewness	1.575

Normal GOF Test

Shapiro Wilk Test Statistic	0.844	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.179	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	26.36	95% Adjusted-CLT UCL (Chen-1995)	27.1
		95% Modified-t UCL (Johnson-1978)	26.53

Gamma GOF Test

A-D Test Statistic	0.465	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.734	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.168	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.237	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	9.787	k star (bias corrected MLE)	7.58
Theta hat (MLE)	2.282	Theta star (bias corrected MLE)	2.947
nu hat (MLE)	254.5	nu star (bias corrected)	197.1
MLE Mean (bias corrected)	22.34	MLE Sd (bias corrected)	8.114
		Approximate Chi Square Value (0.05)	165.6
Adjusted Level of Significance	0.0301	Adjusted Chi Square Value	161.5

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	26.59	95% Adjusted Gamma UCL (use when n<50)	27.26

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.923	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.155	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Surface Soil (0-2 ft bgs)
Baseline Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 2:59:32 PM
From File	SO-Area2-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	2.667	Mean of logged Data	3.054
Maximum of Logged Data	3.777	SD of logged Data	0.324

Assuming Lognormal Distribution

95% H-UCL	26.78	90% Chebyshev (MVUE) UCL	28.33
95% Chebyshev (MVUE) UCL	31.08	97.5% Chebyshev (MVUE) UCL	34.9
99% Chebyshev (MVUE) UCL	42.4		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	26.05	95% Jackknife UCL	26.36
95% Standard Bootstrap UCL	25.89	95% Bootstrap-t UCL	28.16
95% Hall's Bootstrap UCL	29.88	95% Percentile Bootstrap UCL	26.32
95% BCA Bootstrap UCL	26.95		
90% Chebyshev(Mean, Sd) UCL	29.11	95% Chebyshev(Mean, Sd) UCL	32.18
97.5% Chebyshev(Mean, Sd) UCL	36.43	99% Chebyshev(Mean, Sd) UCL	44.79

Suggested UCL to Use

95% Student's-t UCL	26.36

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface and Subsurface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/9/2014 11:47:13 AM
From File	So-Area2-0-2ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	14	Number of Distinct Observations	14
		Number of Missing Observations	0
Minimum	6.67	Mean	14.5
Maximum	37.9	Median	11
SD	9.025	Std. Error of Mean	2.412
Coefficient of Variation	0.622	Skewness	1.645

Normal GOF Test

Shapiro Wilk Test Statistic	0.806	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.874	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.252	Lilliefors GOF Test
5% Lilliefors Critical Value	0.237	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	18.77	95% Adjusted-CLT UCL (Chen-1995)	19.6
		95% Modified-t UCL (Johnson-1978)	18.95

Gamma GOF Test

A-D Test Statistic	0.624	Anderson-Darling Gamma GOF Test
5% A-D Critical Value	0.741	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.211	Kolmogrov-Smirnoff Gamma GOF Test
5% K-S Critical Value	0.23	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.637	k star (bias corrected MLE)	2.906
Theta hat (MLE)	3.987	Theta star (bias corrected MLE)	4.991
nu hat (MLE)	101.8	nu star (bias corrected)	81.36
MLE Mean (bias corrected)	14.5	MLE Sd (bias corrected)	8.508
		Approximate Chi Square Value (0.05)	61.57
Adjusted Level of Significance	0.0312	Adjusted Chi Square Value	59.29

Attachment F
ProUCL Output Area 2 Surface and Subsurface Soil (0-2ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/9/2014 11:47:13 AM
From File	So-Area2-0-2ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	19.16	95% Adjusted Gamma UCL (use when n<50)	19.9

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.922	Shapiro Wilk Lognormal GOF Test	
5% Shapiro Wilk Critical Value	0.874	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.177	Lilliefors Lognormal GOF Test	
5% Lilliefors Critical Value	0.237	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.898	Mean of logged Data	2.531
Maximum of Logged Data	3.635	SD of logged Data	0.53

Assuming Lognormal Distribution

95% H-UCL	19.54	90% Chebyshev (MVUE) UCL	20.56
95% Chebyshev (MVUE) UCL	23.4	97.5% Chebyshev (MVUE) UCL	27.34
99% Chebyshev (MVUE) UCL	35.08		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	18.47	95% Jackknife UCL	18.77
95% Standard Bootstrap UCL	18.38	95% Bootstrap-t UCL	21.17
95% Hall's Bootstrap UCL	22.51	95% Percentile Bootstrap UCL	18.4
95% BCA Bootstrap UCL	19.05		
90% Chebyshev(Mean, Sd) UCL	21.74	95% Chebyshev(Mean, Sd) UCL	25.02
97.5% Chebyshev(Mean, Sd) UCL	29.57	99% Chebyshev(Mean, Sd) UCL	38.5

Suggested UCL to Use

95% Adjusted Gamma UCL	19.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface and Subsurface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ETHYLBENZENE

General Statistics

Total Number of Observations	48	Number of Distinct Observations	15
Number of Detects	5	Number of Non-Detects	43
Number of Distinct Detects	5	Number of Distinct Non-Detects	10
Minimum Detect	0.012	Minimum Non-Detect	0.001
Maximum Detect	28	Maximum Non-Detect	0.16
Variance Detects	128.5	Percent Non-Detects	89.58%
Mean Detects	12.04	SD Detects	11.34
Median Detects	11	CV Detects	0.941
Skewness Detects	0.526	Kurtosis Detects	-0.951
Mean of Logged Detects	1.072	SD of Logged Detects	3.177

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.956	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.182	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.255	Standard Error of Mean	0.795
SD	4.924	95% KM (BCA) UCL	2.634
95% KM (t) UCL	2.589	95% KM (Percentile Bootstrap) UCL	2.609
95% KM (z) UCL	2.562	95% KM Bootstrap t UCL	2.744
90% KM Chebyshev UCL	3.639	95% KM Chebyshev UCL	4.719
97.5% KM Chebyshev UCL	6.217	99% KM Chebyshev UCL	9.161

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.442	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.717	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.27	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.373	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.455	k star (bias corrected MLE)	0.315
Theta hat (MLE)	26.46	Theta star (bias corrected MLE)	38.18
nu hat (MLE)	4.551	nu star (bias corrected)	3.154
MLE Mean (bias corrected)	12.04	MLE Sd (bias corrected)	21.44

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.065	nu hat (KM)	6.241
Approximate Chi Square Value (6.24, α)	1.764	Adjusted Chi Square Value (6.24, β)	1.692
95% Gamma Approximate KM-UCL (use when n>=50)	4.441	95% Gamma Adjusted KM-UCL (use when n<50)	4.631

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1.263
Maximum	28	Median	0.01
SD	4.974	CV	3.937
k hat (MLE)	0.177	k star (bias corrected MLE)	0.179
Theta hat (MLE)	7.154	Theta star (bias corrected MLE)	7.04
nu hat (MLE)	16.95	nu star (bias corrected)	17.23
MLE Mean (bias corrected)	1.263	MLE Sd (bias corrected)	2.982
		Adjusted Level of Significance (β)	0.045
Approximate Chi Square Value (17.23, α)	8.835	Adjusted Chi Square Value (17.23, β)	8.648
95% Gamma Approximate UCL (use when n>=50)	2.463	95% Gamma Adjusted UCL (use when n<50)	2.517

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.769	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.311	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.255	Mean in Log Scale	-12.6
SD in Original Scale	4.976	SD in Log Scale	7.077
95% t UCL (assumes normality of ROS data)	2.46	95% Percentile Bootstrap UCL	2.565
95% BCA Bootstrap UCL	3.109	95% Bootstrap t UCL	4.467
95% H-UCL (Log ROS)	3.118E+10		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.057	95% H-UCL (KM -Log)	0.384
KM SD (logged)	2.607	95% Critical H Value (KM-Log)	4.471
KM Standard Error of Mean (logged)	0.423		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1.27	Mean in Log Scale	-5.49
SD in Original Scale	4.972	SD in Log Scale	3.17
95% t UCL (Assumes normality)	2.474	95% H-Stat UCL	7.298

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	2.589	95% KM (Percentile Bootstrap) UCL	2.609

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

XYLENES,TOTAL

General Statistics

Total Number of Observations	33	Number of Distinct Observations	17
Number of Detects	10	Number of Non-Detects	23
Number of Distinct Detects	9	Number of Distinct Non-Detects	9
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	94	Maximum Non-Detect	0.16
Variance Detects	1196	Percent Non-Detects	69.7%
Mean Detects	22.24	SD Detects	34.58
Median Detects	0.182	CV Detects	1.555
Skewness Detects	1.325	Kurtosis Detects	0.431
Mean of Logged Detects	-0.907	SD of Logged Detects	4.339

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.702	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.337	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	6.742	Standard Error of Mean	3.807
SD	20.75	95% KM (BCA) UCL	13.47
95% KM (t) UCL	13.19	95% KM (Percentile Bootstrap) UCL	12.81
95% KM (z) UCL	13	95% KM Bootstrap t UCL	16.96
90% KM Chebyshev UCL	18.16	95% KM Chebyshev UCL	23.34
97.5% KM Chebyshev UCL	30.52	99% KM Chebyshev UCL	44.63

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.709	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.868	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.25	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.296	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.186	k star (bias corrected MLE)	0.197
Theta hat (MLE)	119.8	Theta star (bias corrected MLE)	113.1
nu hat (MLE)	3.714	nu star (bias corrected)	3.933
MLE Mean (bias corrected)	22.24	MLE Sd (bias corrected)	50.15

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.106	nu hat (KM)	6.968
Approximate Chi Square Value (6.97, α)	2.153	Adjusted Chi Square Value (6.97, β)	2.018
95% Gamma Approximate KM-UCL (use when n>=50)	21.82	95% Gamma Adjusted KM-UCL (use when n<50)	23.28

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	6.746
Maximum	94	Median	0.01
SD	21.07	CV	3.123
k hat (MLE)	0.143	k star (bias corrected MLE)	0.151
Theta hat (MLE)	47.04	Theta star (bias corrected MLE)	44.8
nu hat (MLE)	9.466	nu star (bias corrected)	9.939
MLE Mean (bias corrected)	6.746	MLE Sd (bias corrected)	17.39
		Adjusted Level of Significance (β)	0.0419
Approximate Chi Square Value (9.94, α)	3.904	Adjusted Chi Square Value (9.94, β)	3.71
95% Gamma Approximate UCL (use when n>=50)	17.18	95% Gamma Adjusted UCL (use when n<50)	18.07

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.889	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.183	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	6.74	Mean in Log Scale	-8.832
SD in Original Scale	21.07	SD in Log Scale	6.584
95% t UCL (assumes normality of ROS data)	12.95	95% Percentile Bootstrap UCL	13.09
95% BCA Bootstrap UCL	15.95	95% Bootstrap t UCL	17.13
95% H-UCL (Log ROS)	2.400E+11		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.859	95% H-UCL (KM -Log)	220.2
KM SD (logged)	3.544	95% Critical H Value (KM-Log)	6.346
KM Standard Error of Mean (logged)	0.674		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	6.761	Mean in Log Scale	-3.858
SD in Original Scale	21.06	SD in Log Scale	3.64
95% t UCL (Assumes normality)	12.97	95% H-Stat UCL	1046

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	13.19	95% GROS Adjusted Gamma UCL	18.07
95% Adjusted Gamma KM-UCL	23.28		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)ANTHRACENE

General Statistics

Total Number of Observations	33	Number of Distinct Observations	18
Number of Detects	7	Number of Non-Detects	26
Number of Distinct Detects	7	Number of Distinct Non-Detects	11
Minimum Detect	0.009	Minimum Non-Detect	0.004
Maximum Detect	1	Maximum Non-Detect	0.35
Variance Detects	0.191	Percent Non-Detects	78.79%
Mean Detects	0.358	SD Detects	0.437
Median Detects	0.1	CV Detects	1.221
Skewness Detects	1.034	Kurtosis Detects	-1.079
Mean of Logged Detects	-1.993	SD of Logged Detects	1.716

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.755	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.294	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.08	Standard Error of Mean	0.0444
SD	0.236	95% KM (BCA) UCL	0.155
95% KM (t) UCL	0.155	95% KM (Percentile Bootstrap) UCL	0.153
95% KM (z) UCL	0.153	95% KM Bootstrap t UCL	0.293
90% KM Chebyshev UCL	0.213	95% KM Chebyshev UCL	0.273
97.5% KM Chebyshev UCL	0.357	99% KM Chebyshev UCL	0.522

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.364	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.743	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.224	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.325	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.635	k star (bias corrected MLE)	0.458
Theta hat (MLE)	0.564	Theta star (bias corrected MLE)	0.781
nu hat (MLE)	8.887	nu star (bias corrected)	6.412
MLE Mean (bias corrected)	0.358	MLE Sd (bias corrected)	0.529

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.115	nu hat (KM)	7.596
Approximate Chi Square Value (7.60, α)	2.503	Adjusted Chi Square Value (7.60, β)	2.355
95% Gamma Approximate KM-UCL (use when n>=50)	0.243	95% Gamma Adjusted KM-UCL (use when n<50)	0.258

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.009	Mean	0.0838
Maximum	1	Median	0.01
SD	0.238	CV	2.841
k hat (MLE)	0.416	k star (bias corrected MLE)	0.398
Theta hat (MLE)	0.201	Theta star (bias corrected MLE)	0.21
nu hat (MLE)	27.46	nu star (bias corrected)	26.3
MLE Mean (bias corrected)	0.0838	MLE Sd (bias corrected)	0.133
		Adjusted Level of Significance (β)	0.0419
Approximate Chi Square Value (26.30, α)	15.61	Adjusted Chi Square Value (26.30, β)	15.19
95% Gamma Approximate UCL (use when n>=50)	0.141	95% Gamma Adjusted UCL (use when n<50)	0.145

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.941	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.158	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0768	Mean in Log Scale	-6.528
SD in Original Scale	0.24	SD in Log Scale	2.889
95% t UCL (assumes normality of ROS data)	0.148	95% Percentile Bootstrap UCL	0.152
95% BCA Bootstrap UCL	0.189	95% Bootstrap t UCL	0.341
95% H-UCL (Log ROS)	1.397		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.69	95% H-UCL (KM -Log)	0.0845
KM SD (logged)	1.608	95% Critical H Value (KM-Log)	3.26
KM Standard Error of Mean (logged)	0.315		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0921	Mean in Log Scale	-3.921
SD in Original Scale	0.237	SD in Log Scale	1.592
95% t UCL (Assumes normality)	0.162	95% H-Stat UCL	0.175

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.155	95% KM (Percentile Bootstrap) UCL	0.153

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	32	Number of Distinct Observations	16
Number of Detects	7	Number of Non-Detects	25
Number of Distinct Detects	7	Number of Distinct Non-Detects	10
Minimum Detect	0.011	Minimum Non-Detect	0.004
Maximum Detect	1.4	Maximum Non-Detect	0.35
Variance Detects	0.32	Percent Non-Detects	78.13%
Mean Detects	0.462	SD Detects	0.566
Median Detects	0.15	CV Detects	1.225
Skewness Detects	1.07	Kurtosis Detects	-0.624
Mean of Logged Detects	-1.803	SD of Logged Detects	1.792

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.803	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.281	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.105	Standard Error of Mean	0.0591
SD	0.309	95% KM (BCA) UCL	0.206
95% KM (t) UCL	0.205	95% KM (Percentile Bootstrap) UCL	0.206
95% KM (z) UCL	0.202	95% KM Bootstrap t UCL	0.388
90% KM Chebyshev UCL	0.282	95% KM Chebyshev UCL	0.362
97.5% KM Chebyshev UCL	0.474	99% KM Chebyshev UCL	0.693

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.288	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.745	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.181	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.325	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.6	k star (bias corrected MLE)	0.438
Theta hat (MLE)	0.769	Theta star (bias corrected MLE)	1.054
nu hat (MLE)	8.401	nu star (bias corrected)	6.134
MLE Mean (bias corrected)	0.462	MLE Sd (bias corrected)	0.697

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.115	nu hat (KM)	7.389
Approximate Chi Square Value (7.39, α)	2.386	Adjusted Chi Square Value (7.39, β)	2.237
95% Gamma Approximate KM-UCL (use when n>=50)	0.325	95% Gamma Adjusted KM-UCL (use when n<50)	0.347

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.109
Maximum	1.4	Median	0.01
SD	0.313	CV	2.876
k hat (MLE)	0.375	k star (bias corrected MLE)	0.361
Theta hat (MLE)	0.29	Theta star (bias corrected MLE)	0.302
nu hat (MLE)	23.99	nu star (bias corrected)	23.08
MLE Mean (bias corrected)	0.109	MLE Sd (bias corrected)	0.181
		Adjusted Level of Significance (β)	0.0416
Approximate Chi Square Value (23.08, α)	13.15	Adjusted Chi Square Value (23.08, β)	12.75
95% Gamma Approximate UCL (use when n>=50)	0.191	95% Gamma Adjusted UCL (use when n<50)	0.197

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.952	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.145	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.102	Mean in Log Scale	-6.64
SD in Original Scale	0.315	SD in Log Scale	3.141
95% t UCL (assumes normality of ROS data)	0.196	95% Percentile Bootstrap UCL	0.207
95% BCA Bootstrap UCL	0.245	95% Bootstrap t UCL	0.609
95% H-UCL (Log ROS)	4.402		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.607	95% H-UCL (KM -Log)	0.122
KM SD (logged)	1.709	95% Critical H Value (KM-Log)	3.393
KM Standard Error of Mean (logged)	0.343		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.117	Mean in Log Scale	-3.875
SD in Original Scale	0.312	SD in Log Scale	1.685
95% t UCL (Assumes normality)	0.211	95% H-Stat UCL	0.237

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.205	95% KM (Percentile Bootstrap) UCL	0.206

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	32	Number of Distinct Observations	18
Number of Detects	8	Number of Non-Detects	24
Number of Distinct Detects	8	Number of Distinct Non-Detects	10
Minimum Detect	0.018	Minimum Non-Detect	0.004
Maximum Detect	2.4	Maximum Non-Detect	0.35
Variance Detects	0.852	Percent Non-Detects	75%
Mean Detects	0.673	SD Detects	0.923
Median Detects	0.16	CV Detects	1.372
Skewness Detects	1.35	Kurtosis Detects	0.357
Mean of Logged Detects	-1.531	SD of Logged Detects	1.759

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.749	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.317	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.173	Standard Error of Mean	0.0982
SD	0.519	95% KM (BCA) UCL	0.329
95% KM (t) UCL	0.339	95% KM (Percentile Bootstrap) UCL	0.345
95% KM (z) UCL	0.334	95% KM Bootstrap t UCL	0.712
90% KM Chebyshev UCL	0.467	95% KM Chebyshev UCL	0.601
97.5% KM Chebyshev UCL	0.786	99% KM Chebyshev UCL	1.15

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.427	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.759	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.223	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.308	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.551	k star (bias corrected MLE)	0.428
Theta hat (MLE)	1.22	Theta star (bias corrected MLE)	1.572
nu hat (MLE)	8.822	nu star (bias corrected)	6.847
MLE Mean (bias corrected)	0.673	MLE Sd (bias corrected)	1.028

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.111	nu hat (KM)	7.084
Approximate Chi Square Value (7.08, α)	2.217	Adjusted Chi Square Value (7.08, β)	2.074
95% Gamma Approximate KM-UCL (use when n>=50)	0.552	95% Gamma Adjusted KM-UCL (use when n<50)	0.59

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.176
Maximum	2.4	Median	0.01
SD	0.527	CV	2.998
k hat (MLE)	0.325	k star (bias corrected MLE)	0.315
Theta hat (MLE)	0.541	Theta star (bias corrected MLE)	0.558
nu hat (MLE)	20.77	nu star (bias corrected)	20.16
MLE Mean (bias corrected)	0.176	MLE Sd (bias corrected)	0.313
		Adjusted Level of Significance (β)	0.0416
Approximate Chi Square Value (20.16, α)	10.97	Adjusted Chi Square Value (20.16, β)	10.6
95% Gamma Approximate UCL (use when n>=50)	0.323	95% Gamma Adjusted UCL (use when n<50)	0.334

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.15	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.169	Mean in Log Scale	-5.942
SD in Original Scale	0.529	SD in Log Scale	3.074
95% t UCL (assumes normality of ROS data)	0.328	95% Percentile Bootstrap UCL	0.343
95% BCA Bootstrap UCL	0.397	95% Bootstrap t UCL	0.734
95% H-UCL (Log ROS)	6.307		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.39	95% H-UCL (KM -Log)	0.263
KM SD (logged)	1.898	95% Critical H Value (KM-Log)	3.676
KM Standard Error of Mean (logged)	0.387		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.184	Mean in Log Scale	-3.741
SD in Original Scale	0.525	SD in Log Scale	1.829
95% t UCL (Assumes normality)	0.341	95% H-Stat UCL	0.409

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.339	95% GROS Adjusted Gamma UCL	0.334
95% Adjusted Gamma KM-UCL	0.59		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	32	Number of Distinct Observations	16
Number of Detects	4	Number of Non-Detects	28
Number of Distinct Detects	4	Number of Distinct Non-Detects	12
Minimum Detect	0.057	Minimum Non-Detect	0.019
Maximum Detect	8	Maximum Non-Detect	0.35
Variance Detects	13.07	Percent Non-Detects	87.5%
Mean Detects	2.697	SD Detects	3.615
Median Detects	1.365	CV Detects	1.341
Skewness Detects	1.746	Kurtosis Detects	3.125
Mean of Logged Detects	-0.0824	SD of Logged Detects	2.078

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.811	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.337	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.354	Standard Error of Mean	0.289
SD	1.418	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.845	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.83	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.222	95% KM Chebyshev UCL	1.615
97.5% KM Chebyshev UCL	2.161	99% KM Chebyshev UCL	3.233

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.204	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.678	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.171	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.409	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.578	k star (bias corrected MLE)	0.311
Theta hat (MLE)	4.664	Theta star (bias corrected MLE)	8.665
nu hat (MLE)	4.626	nu star (bias corrected)	2.49
MLE Mean (bias corrected)	2.697	MLE Sd (bias corrected)	4.834

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0623	nu hat (KM)	3.989
Approximate Chi Square Value (3.99, α)	0.717	Adjusted Chi Square Value (3.99, β)	0.65
95% Gamma Approximate KM-UCL (use when n>=50)	1.968	95% Gamma Adjusted KM-UCL (use when n<50)	2.173

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.346
Maximum	8	Median	0.01
SD	1.442	CV	4.17
k hat (MLE)	0.24	k star (bias corrected MLE)	0.238
Theta hat (MLE)	1.441	Theta star (bias corrected MLE)	1.451
nu hat (MLE)	15.36	nu star (bias corrected)	15.26
MLE Mean (bias corrected)	0.346	MLE Sd (bias corrected)	0.708
		Adjusted Level of Significance (β)	0.0416
Approximate Chi Square Value (15.26, α)	7.441	Adjusted Chi Square Value (15.26, β)	7.149
95% Gamma Approximate UCL (use when n>=50)	0.709	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.23	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.337	Mean in Log Scale	-9.664
SD in Original Scale	1.444	SD in Log Scale	4.698
95% t UCL (assumes normality of ROS data)	0.77	95% Percentile Bootstrap UCL	0.815
95% BCA Bootstrap UCL	1.148	95% Bootstrap t UCL	3.401
95% H-UCL (Log ROS)	4107		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.473	95% H-UCL (KM -Log)	0.187
KM SD (logged)	1.433	95% Critical H Value (KM-Log)	2.996
KM Standard Error of Mean (logged)	0.293		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.359	Mean in Log Scale	-3.464
SD in Original Scale	1.439	SD in Log Scale	1.565
95% t UCL (Assumes normality)	0.791	95% H-Stat UCL	0.261

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.845	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DIBENZO(A,H)ANTHRACENE

General Statistics

Total Number of Observations	32	Number of Distinct Observations	14
Number of Detects	5	Number of Non-Detects	27
Number of Distinct Detects	5	Number of Distinct Non-Detects	11
Minimum Detect	0.004	Minimum Non-Detect	0.004
Maximum Detect	0.34	Maximum Non-Detect	0.35
Variance Detects	0.0202	Percent Non-Detects	84.38%
Mean Detects	0.143	SD Detects	0.142
Median Detects	0.093	CV Detects	0.99
Skewness Detects	0.663	Kurtosis Detects	-1.606
Mean of Logged Detects	-2.724	SD of Logged Detects	1.773

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.914	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.239	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0266	Standard Error of Mean	0.0145
SD	0.0723	95% KM (BCA) UCL	0.0514
95% KM (t) UCL	0.0513	95% KM (Percentile Bootstrap) UCL	0.0514
95% KM (z) UCL	0.0505	95% KM Bootstrap t UCL	0.0741
90% KM Chebyshev UCL	0.0702	95% KM Chebyshev UCL	0.0899
97.5% KM Chebyshev UCL	0.117	99% KM Chebyshev UCL	0.171

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.225	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.698	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.206	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.367	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.764	k star (bias corrected MLE)	0.439
Theta hat (MLE)	0.188	Theta star (bias corrected MLE)	0.327
nu hat (MLE)	7.635	nu star (bias corrected)	4.387
MLE Mean (bias corrected)	0.143	MLE Sd (bias corrected)	0.216

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.136	nu hat (KM)	8.675
Approximate Chi Square Value (8.68, α)	3.132	Adjusted Chi Square Value (8.68, β)	2.956
95% Gamma Approximate KM-UCL (use when n>=50)	0.0737	95% Gamma Adjusted KM-UCL (use when n<50)	0.0781

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.004	Mean	0.0308
Maximum	0.34	Median	0.01
SD	0.0709	CV	2.298
k hat (MLE)	0.723	k star (bias corrected MLE)	0.676
Theta hat (MLE)	0.0427	Theta star (bias corrected MLE)	0.0456
nu hat (MLE)	46.26	nu star (bias corrected)	43.25
MLE Mean (bias corrected)	0.0308	MLE Sd (bias corrected)	0.0375
		Adjusted Level of Significance (β)	0.0416
Approximate Chi Square Value (43.25, α)	29.17	Adjusted Chi Square Value (43.25, β)	28.55
95% Gamma Approximate UCL (use when n>=50)	0.0457	95% Gamma Adjusted UCL (use when n<50)	0.0467

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.911	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.19	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0227	Mean in Log Scale	-8.296
SD in Original Scale	0.0734	SD in Log Scale	3.095
95% t UCL (assumes normality of ROS data)	0.0447	95% Percentile Bootstrap UCL	0.0454
95% BCA Bootstrap UCL	0.0573	95% Bootstrap t UCL	0.109
95% H-UCL (Log ROS)	0.664		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.061	95% H-UCL (KM -Log)	0.0239
KM SD (logged)	1.215	95% Critical H Value (KM-Log)	2.701
KM Standard Error of Mean (logged)	0.246		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0397	Mean in Log Scale	-4.158
SD in Original Scale	0.0742	SD in Log Scale	1.337
95% t UCL (Assumes normality)	0.0619	95% H-Stat UCL	0.0761

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0513	95% KM (Percentile Bootstrap) UCL	0.0514

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	32	Number of Distinct Observations	16
Number of Detects	6	Number of Non-Detects	26
Number of Distinct Detects	6	Number of Distinct Non-Detects	10
Minimum Detect	0.007	Minimum Non-Detect	0.004
Maximum Detect	1.2	Maximum Non-Detect	0.35
Variance Detects	0.234	Percent Non-Detects	81.25%
Mean Detects	0.403	SD Detects	0.484
Median Detects	0.185	CV Detects	1.2
Skewness Detects	1.122	Kurtosis Detects	-0.186
Mean of Logged Detects	-1.934	SD of Logged Detects	1.902

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.834	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.259	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0795	Standard Error of Mean	0.0478
SD	0.246	95% KM (BCA) UCL	0.17
95% KM (t) UCL	0.16	95% KM (Percentile Bootstrap) UCL	0.16
95% KM (z) UCL	0.158	95% KM Bootstrap t UCL	0.321
90% KM Chebyshev UCL	0.223	95% KM Chebyshev UCL	0.288
97.5% KM Chebyshev UCL	0.378	99% KM Chebyshev UCL	0.555

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.231	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.73	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.202	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.346	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.602	k star (bias corrected MLE)	0.412
Theta hat (MLE)	0.669	Theta star (bias corrected MLE)	0.977
nu hat (MLE)	7.23	nu star (bias corrected)	4.948
MLE Mean (bias corrected)	0.403	MLE Sd (bias corrected)	0.627

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.104	nu hat (KM)	6.658
Approximate Chi Square Value (6.66, α)	1.985	Adjusted Chi Square Value (6.66, β)	1.851
95% Gamma Approximate KM-UCL (use when n>=50)	0.267	95% Gamma Adjusted KM-UCL (use when n<50)	0.286

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.007	Mean	0.0837
Maximum	1.2	Median	0.01
SD	0.249	CV	2.976
k hat (MLE)	0.405	k star (bias corrected MLE)	0.388
Theta hat (MLE)	0.207	Theta star (bias corrected MLE)	0.216
nu hat (MLE)	25.9	nu star (bias corrected)	24.8
MLE Mean (bias corrected)	0.0837	MLE Sd (bias corrected)	0.134
		Adjusted Level of Significance (β)	0.0416
Approximate Chi Square Value (24.80, α)	14.46	Adjusted Chi Square Value (24.80, β)	14.04
95% Gamma Approximate UCL (use when n>=50)	0.143	95% Gamma Adjusted UCL (use when n<50)	0.148

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.947	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.155	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0762	Mean in Log Scale	-7.302
SD in Original Scale	0.251	SD in Log Scale	3.25
95% t UCL (assumes normality of ROS data)	0.151	95% Percentile Bootstrap UCL	0.153
95% BCA Bootstrap UCL	0.189	95% Bootstrap t UCL	0.401
95% H-UCL (Log ROS)	3.985		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.788	95% H-UCL (KM -Log)	0.0726
KM SD (logged)	1.583	95% Critical H Value (KM-Log)	3.209
KM Standard Error of Mean (logged)	0.314		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0923	Mean in Log Scale	-3.968
SD in Original Scale	0.248	SD in Log Scale	1.598
95% t UCL (Assumes normality)	0.167	95% H-Stat UCL	0.171

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.16	95% KM (Percentile Bootstrap) UCL	0.16

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	22	Number of Distinct Observations	22
		Number of Missing Observations	0
Minimum	3.4	Mean	7013
Maximum	20600	Median	6440
SD	4592	Std. Error of Mean	978.9
Coefficient of Variation	0.655	Skewness	1.541

Normal GOF Test

Shapiro Wilk Test Statistic	0.868	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	8697	95% Adjusted-CLT UCL (Chen-1995)	8967
		95% Modified-t UCL (Johnson-1978)	8751

Gamma GOF Test

A-D Test Statistic	1.539	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.764	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.208	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.19	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.281	k star (bias corrected MLE)	1.137
Theta hat (MLE)	5473	Theta star (bias corrected MLE)	6168
nu hat (MLE)	56.38	nu star (bias corrected)	50.03
MLE Mean (bias corrected)	7013	MLE Sd (bias corrected)	6577
		Approximate Chi Square Value (0.05)	34.79
Adjusted Level of Significance	0.0386	Adjusted Chi Square Value	33.84

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	10085	95% Adjusted Gamma UCL (use when n<50)	10368

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.514	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.911	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.323	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.189	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	1.224	Mean of logged Data	8.417
Maximum of Logged Data	9.933	SD of logged Data	1.689

Assuming Lognormal Distribution

95% H-UCL	72495	90% Chebyshev (MVUE) UCL	38430
95% Chebyshev (MVUE) UCL	48384	97.5% Chebyshev (MVUE) UCL	62201
99% Chebyshev (MVUE) UCL	89340		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	8623	95% Jackknife UCL	8697
95% Standard Bootstrap UCL	8546	95% Bootstrap-t UCL	9361
95% Hall's Bootstrap UCL	10220	95% Percentile Bootstrap UCL	8713
95% BCA Bootstrap UCL	9103		
90% Chebyshev(Mean, Sd) UCL	9950	95% Chebyshev(Mean, Sd) UCL	11280
97.5% Chebyshev(Mean, Sd) UCL	13126	99% Chebyshev(Mean, Sd) UCL	16753

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 11280

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	23	Number of Distinct Observations	23
Number of Detects	19	Number of Non-Detects	4
Number of Distinct Detects	19	Number of Distinct Non-Detects	4
Minimum Detect	1.3	Minimum Non-Detect	0.0012
Maximum Detect	13.5	Maximum Non-Detect	5.42
Variance Detects	7.612	Percent Non-Detects	17.39%
Mean Detects	3.993	SD Detects	2.759
Median Detects	3.15	CV Detects	0.691
Skewness Detects	2.594	Kurtosis Detects	7.779
Mean of Logged Detects	1.235	SD of Logged Detects	0.522

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.697	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.283	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.409	Standard Error of Mean	0.604
SD	2.804	95% KM (BCA) UCL	4.566
95% KM (t) UCL	4.446	95% KM (Percentile Bootstrap) UCL	4.408
95% KM (z) UCL	4.402	95% KM Bootstrap t UCL	4.986
90% KM Chebyshev UCL	5.22	95% KM Chebyshev UCL	6.041
97.5% KM Chebyshev UCL	7.18	99% KM Chebyshev UCL	9.417

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.081	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.747	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.237	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.2	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.497	k star (bias corrected MLE)	2.98
Theta hat (MLE)	1.142	Theta star (bias corrected MLE)	1.34
nu hat (MLE)	132.9	nu star (bias corrected)	113.2
MLE Mean (bias corrected)	3.993	MLE Sd (bias corrected)	2.313

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.478	nu hat (KM)	67.97
Approximate Chi Square Value (67.97, α)	50	Adjusted Chi Square Value (67.97, β)	48.88
95% Gamma Approximate KM-UCL (use when n>=50)	4.634	95% Gamma Adjusted KM-UCL (use when n<50)	4.74

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	3.41
Maximum	13.5	Median	2.94
SD	2.852	CV	0.836
k hat (MLE)	0.777	k star (bias corrected MLE)	0.704
Theta hat (MLE)	4.389	Theta star (bias corrected MLE)	4.84
nu hat (MLE)	35.73	nu star (bias corrected)	32.41
MLE Mean (bias corrected)	3.41	MLE Sd (bias corrected)	4.062
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (32.41, α)	20.4	Adjusted Chi Square Value (32.41, β)	19.7
95% Gamma Approximate UCL (use when n>=50)	5.418	95% Gamma Adjusted UCL (use when n<50)	5.608

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.924	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.202	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.559	Mean in Log Scale	1.077
SD in Original Scale	2.691	SD in Log Scale	0.61
95% t UCL (assumes normality of ROS data)	4.523	95% Percentile Bootstrap UCL	4.519
95% BCA Bootstrap UCL	4.838	95% Bootstrap t UCL	5.329
95% H-UCL (Log ROS)	4.63		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	0.135	95% H-UCL (KM -Log)	1303
KM SD (logged)	2.777	95% Critical H Value (KM-Log)	5.375
KM Standard Error of Mean (logged)	0.609		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	3.463	Mean in Log Scale	0.687
SD in Original Scale	2.796	SD in Log Scale	1.905
95% t UCL (Assumes normality)	4.464	95% H-Stat UCL	59.33

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	6.041

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT

General Statistics

Total Number of Observations	23	Number of Distinct Observations	23
Number of Detects	22	Number of Non-Detects	1
Number of Distinct Detects	22	Number of Distinct Non-Detects	1
Minimum Detect	0.402	Minimum Non-Detect	0.0061
Maximum Detect	6.63	Maximum Non-Detect	0.0061
Variance Detects	4.057	Percent Non-Detects	4.348%
Mean Detects	2.198	SD Detects	2.014
Median Detects	1.255	CV Detects	0.916
Skewness Detects	1.169	Kurtosis Detects	0.205
Mean of Logged Detects	0.382	SD of Logged Detects	0.936

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.819	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.223	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.103	Standard Error of Mean	0.422
SD	1.976	95% KM (BCA) UCL	2.791
95% KM (t) UCL	2.827	95% KM (Percentile Bootstrap) UCL	2.832
95% KM (z) UCL	2.797	95% KM Bootstrap t UCL	3.01
90% KM Chebyshev UCL	3.368	95% KM Chebyshev UCL	3.941
97.5% KM Chebyshev UCL	4.736	99% KM Chebyshev UCL	6.299

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.655	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.762	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.16	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.189	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.374	k star (bias corrected MLE)	1.217
Theta hat (MLE)	1.6	Theta star (bias corrected MLE)	1.806
nu hat (MLE)	60.47	nu star (bias corrected)	53.56
MLE Mean (bias corrected)	2.198	MLE Sd (bias corrected)	1.993

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.133	nu hat (KM)	52.11
Approximate Chi Square Value (52.11, α)	36.53	Adjusted Chi Square Value (52.11, β)	35.58
95% Gamma Approximate KM-UCL (use when n>=50)	3	95% Gamma Adjusted KM-UCL (use when n<50)	3.08

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.103
Maximum	6.63	Median	1.24
SD	2.02	CV	0.96
k hat (MLE)	0.998	k star (bias corrected MLE)	0.897
Theta hat (MLE)	2.108	Theta star (bias corrected MLE)	2.345
nu hat (MLE)	45.9	nu star (bias corrected)	41.25
MLE Mean (bias corrected)	2.103	MLE Sd (bias corrected)	2.221
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (41.25, α)	27.53	Adjusted Chi Square Value (41.25, β)	26.72
95% Gamma Approximate UCL (use when n>=50)	3.151	95% Gamma Adjusted UCL (use when n<50)	3.247

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.126	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.109	Mean in Log Scale	0.281
SD in Original Scale	2.014	SD in Log Scale	1.034
95% t UCL (assumes normality of ROS data)	2.83	95% Percentile Bootstrap UCL	2.786
95% BCA Bootstrap UCL	2.899	95% Bootstrap t UCL	2.999
95% H-UCL (Log ROS)	3.987		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	0.143	95% H-UCL (KM -Log)	8.39
KM SD (logged)	1.431	95% Critical H Value (KM-Log)	3.142
KM Standard Error of Mean (logged)	0.306		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2.103	Mean in Log Scale	0.113
SD in Original Scale	2.02	SD in Log Scale	1.579
95% t UCL (Assumes normality)	2.826	95% H-Stat UCL	12.12

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	3.941	95% GROS Adjusted Gamma UCL	3.247
95% Adjusted Gamma KM-UCL	3.08		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	24	Number of Distinct Observations	24
Number of Detects	22	Number of Non-Detects	2
Number of Distinct Detects	22	Number of Distinct Non-Detects	2
Minimum Detect	0.0058	Minimum Non-Detect	8.7
Maximum Detect	540	Maximum Non-Detect	12.9
Variance Detects	18915	Percent Non-Detects	8.333%
Mean Detects	77.51	SD Detects	137.5
Median Detects	10.2	CV Detects	1.774
Skewness Detects	2.311	Kurtosis Detects	5.457
Mean of Logged Detects	2.51	SD of Logged Detects	2.503

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.625	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.336	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	71.37	Standard Error of Mean	27.21
SD	130.3	95% KM (BCA) UCL	113.4
95% KM (t) UCL	118	95% KM (Percentile Bootstrap) UCL	116.9
95% KM (z) UCL	116.1	95% KM Bootstrap t UCL	159.2
90% KM Chebyshev UCL	153	95% KM Chebyshev UCL	190
97.5% KM Chebyshev UCL	241.3	99% KM Chebyshev UCL	342.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.877	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.834	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.205	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.199	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.363	k star (bias corrected MLE)	0.344
Theta hat (MLE)	213.4	Theta star (bias corrected MLE)	225.3
nu hat (MLE)	15.98	nu star (bias corrected)	15.13
MLE Mean (bias corrected)	77.51	MLE Sd (bias corrected)	132.2

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.3	nu hat (KM)	14.41
Approximate Chi Square Value (14.41, α)	6.853	Adjusted Chi Square Value (14.41, β)	6.488
95% Gamma Approximate KM-UCL (use when n>=50)	150.1	95% Gamma Adjusted KM-UCL (use when n<50)	158.5

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0058	Mean	71.05
Maximum	540	Median	6.9
SD	133.2	CV	1.875
k hat (MLE)	0.295	k star (bias corrected MLE)	0.286
Theta hat (MLE)	241.1	Theta star (bias corrected MLE)	248.7
nu hat (MLE)	14.15	nu star (bias corrected)	13.71
MLE Mean (bias corrected)	71.05	MLE Sd (bias corrected)	132.9
		Adjusted Level of Significance (β)	0.0392
Approximate Chi Square Value (13.71, α)	6.375	Adjusted Chi Square Value (13.71, β)	6.025
95% Gamma Approximate UCL (use when n>=50)	152.8	95% Gamma Adjusted UCL (use when n<50)	161.7

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.903	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.128	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	71.23	Mean in Log Scale	2.367
SD in Original Scale	133.1	SD in Log Scale	2.441
95% t UCL (assumes normality of ROS data)	117.8	95% Percentile Bootstrap UCL	116.7
95% BCA Bootstrap UCL	127.4	95% Bootstrap t UCL	147.4
95% H-UCL (Log ROS)	2465		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	2.359	95% H-UCL (KM -Log)	2644
KM SD (logged)	2.459	95% Critical H Value (KM-Log)	4.874
KM Standard Error of Mean (logged)	0.529		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	71.5	Mean in Log Scale	2.44
SD in Original Scale	133	SD in Log Scale	2.404
95% t UCL (Assumes normality)	118	95% H-Stat UCL	2268

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	342.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MANGANESE

General Statistics

Total Number of Observations	23	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	0.03	Mean	55.14
Maximum	275	Median	26.8
SD	64.13	Std. Error of Mean	13.37
Coefficient of Variation	1.163	Skewness	2.258

Normal GOF Test

Shapiro Wilk Test Statistic	0.723	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.914	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.26	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.185	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	78.1	95% Adjusted-CLT UCL (Chen-1995)	83.86
		95% Modified-t UCL (Johnson-1978)	79.15

Gamma GOF Test

A-D Test Statistic	0.694	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.778	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.161	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.188	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.836	k star (bias corrected MLE)	0.756
Theta hat (MLE)	65.97	Theta star (bias corrected MLE)	72.96
nu hat (MLE)	38.45	nu star (bias corrected)	34.77
MLE Mean (bias corrected)	55.14	MLE Sd (bias corrected)	63.43
		Approximate Chi Square Value (0.05)	22.28
Adjusted Level of Significance	0.0389	Adjusted Chi Square Value	21.55

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	86.05	95% Adjusted Gamma UCL (use when n<50)	88.95

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.721	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.914	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.237	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.185	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-3.507	Mean of logged Data	3.304
Maximum of Logged Data	5.617	SD of logged Data	1.734

Assuming Lognormal Distribution

95% H-UCL	466.3	90% Chebyshev (MVUE) UCL	250.6
95% Chebyshev (MVUE) UCL	315.9	97.5% Chebyshev (MVUE) UCL	406.6
99% Chebyshev (MVUE) UCL	584.7		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	77.14	95% Jackknife UCL	78.1
95% Standard Bootstrap UCL	76.37	95% Bootstrap-t UCL	94.05
95% Hall's Bootstrap UCL	92.48	95% Percentile Bootstrap UCL	77.5
95% BCA Bootstrap UCL	85.29		
90% Chebyshev(Mean, Sd) UCL	95.26	95% Chebyshev(Mean, Sd) UCL	113.4
97.5% Chebyshev(Mean, Sd) UCL	138.6	99% Chebyshev(Mean, Sd) UCL	188.2

Suggested UCL to Use

95% Adjusted Gamma UCL 88.95

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

THALLIUM

General Statistics

Total Number of Observations	23	Number of Distinct Observations	23
Number of Detects	7	Number of Non-Detects	16
Number of Distinct Detects	7	Number of Distinct Non-Detects	16
Minimum Detect	0.555	Minimum Non-Detect	0.0012
Maximum Detect	2.39	Maximum Non-Detect	8.27
Variance Detects	0.442	Percent Non-Detects	69.57%
Mean Detects	1.295	SD Detects	0.665
Median Detects	1.05	CV Detects	0.513
Skewness Detects	0.658	Kurtosis Detects	-0.797
Mean of Logged Detects	0.143	SD of Logged Detects	0.524

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.917	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.215	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.606	Standard Error of Mean	0.19
SD	0.695	95% KM (BCA) UCL	1.032
95% KM (t) UCL	0.933	95% KM (Percentile Bootstrap) UCL	0.981
95% KM (z) UCL	0.919	95% KM Bootstrap t UCL	0.858
90% KM Chebyshev UCL	1.177	95% KM Chebyshev UCL	1.436
97.5% KM Chebyshev UCL	1.795	99% KM Chebyshev UCL	2.501

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.309	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.71	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.313	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.485	k star (bias corrected MLE)	2.658
Theta hat (MLE)	0.289	Theta star (bias corrected MLE)	0.487
nu hat (MLE)	62.78	nu star (bias corrected)	37.21
MLE Mean (bias corrected)	1.295	MLE Sd (bias corrected)	0.795

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.759	nu hat (KM)	34.91
Approximate Chi Square Value (34.91, α)	22.4	Adjusted Chi Square Value (34.91, β)	21.67
95% Gamma Approximate KM-UCL (use when n>=50)	0.944	95% Gamma Adjusted KM-UCL (use when n<50)	0.976

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0638	Mean	0.614
Maximum	2.39	Median	0.433
SD	0.596	CV	0.97
k hat (MLE)	1.196	k star (bias corrected MLE)	1.069
Theta hat (MLE)	0.513	Theta star (bias corrected MLE)	0.574
nu hat (MLE)	55.02	nu star (bias corrected)	49.18
MLE Mean (bias corrected)	0.614	MLE Sd (bias corrected)	0.594
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (49.18, α)	34.08	Adjusted Chi Square Value (49.18, β)	33.17
95% Gamma Approximate UCL (use when n>=50)	0.886	95% Gamma Adjusted UCL (use when n<50)	0.91

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.192	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.725	Mean in Log Scale	-0.489
SD in Original Scale	0.525	SD in Log Scale	0.54
95% t UCL (assumes normality of ROS data)	0.913	95% Percentile Bootstrap UCL	0.914
95% BCA Bootstrap UCL	0.976	95% Bootstrap t UCL	1.058
95% H-UCL (Log ROS)	0.893		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.132	95% H-UCL (KM -Log)	1382
KM SD (logged)	3.382	95% Critical H Value (KM-Log)	6.44
KM Standard Error of Mean (logged)	1.06		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.982	Mean in Log Scale	-0.564
SD in Original Scale	0.876	SD in Log Scale	1.68
95% t UCL (Assumes normality)	1.296	95% H-Stat UCL	8.255

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.933	95% KM (Percentile Bootstrap) UCL	0.981

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	21	Number of Distinct Observations	21
		Number of Missing Observations	0
Minimum	0.0079	Mean	27.95
Maximum	73	Median	23.4
SD	20.75	Std. Error of Mean	4.528
Coefficient of Variation	0.742	Skewness	1.134

Normal GOF Test

Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.24	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	35.76	95% Adjusted-CLT UCL (Chen-1995)	36.59
		95% Modified-t UCL (Johnson-1978)	35.95

Gamma GOF Test

A-D Test Statistic	1.191	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.769	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.251	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.195	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.046	k star (bias corrected MLE)	0.929
Theta hat (MLE)	26.71	Theta star (bias corrected MLE)	30.1
nu hat (MLE)	43.95	nu star (bias corrected)	39.01
MLE Mean (bias corrected)	27.95	MLE Sd (bias corrected)	29
		Approximate Chi Square Value (0.05)	25.7
Adjusted Level of Significance	0.0383	Adjusted Chi Square Value	24.87

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	42.42	95% Adjusted Gamma UCL (use when n<50)	43.84

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.56	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.908	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.333	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.193	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:06:56 PM
From File	SO-Area2-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-4.841	Mean of logged Data	2.782
Maximum of Logged Data	4.29	SD of logged Data	1.872

Assuming Lognormal Distribution

95% H-UCL	480.8	90% Chebyshev (MVUE) UCL	193.9
95% Chebyshev (MVUE) UCL	246.8	97.5% Chebyshev (MVUE) UCL	320.4
99% Chebyshev (MVUE) UCL	464.8		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	35.4	95% Jackknife UCL	35.76
95% Standard Bootstrap UCL	35.17	95% Bootstrap-t UCL	37.73
95% Hall's Bootstrap UCL	36.65	95% Percentile Bootstrap UCL	35.67
95% BCA Bootstrap UCL	36.52		
90% Chebyshev(Mean, Sd) UCL	41.53	95% Chebyshev(Mean, Sd) UCL	47.69
97.5% Chebyshev(Mean, Sd) UCL	56.23	99% Chebyshev(Mean, Sd) UCL	73

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	47.69

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface and Subsurface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:41:06 AM
From File	So-Area2-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	58	Number of Distinct Observations	56
Number of Detects	57	Number of Non-Detects	1
Number of Distinct Detects	55	Number of Distinct Non-Detects	1
Minimum Detect	0.0081	Minimum Non-Detect	0.741
Maximum Detect	73.2	Maximum Non-Detect	0.741
Variance Detects	245.9	Percent Non-Detects	1.724%
Mean Detects	15.78	SD Detects	15.68
Median Detects	10.1	CV Detects	0.994
Skewness Detects	1.85	Kurtosis Detects	3.233
Mean of Logged Detects	2.135	SD of Logged Detects	1.632

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.782	Normal GOF Test on Detected Observations Only
5% Shapiro Wilk P Value	5.792E-11	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.224	Lilliefors GOF Test
5% Lilliefors Critical Value	0.117	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	15.51	Standard Error of Mean	2.059
SD	15.54	95% KM (BCA) UCL	18.89
95% KM (t) UCL	18.95	95% KM (Percentile Bootstrap) UCL	18.98
95% KM (z) UCL	18.9	95% KM Bootstrap t UCL	19.79
90% KM Chebyshev UCL	21.69	95% KM Chebyshev UCL	24.48
97.5% KM Chebyshev UCL	28.37	99% KM Chebyshev UCL	36

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.366	Anderson-Darling GOF Test
5% A-D Critical Value	0.783	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.126	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.122	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.933	k star (bias corrected MLE)	0.896
Theta hat (MLE)	16.91	Theta star (bias corrected MLE)	17.61
nu hat (MLE)	106.4	nu star (bias corrected)	102.1
MLE Mean (bias corrected)	15.78	MLE Sd (bias corrected)	16.67

Attachment F
ProUCL Output Area 2 Surface and Subsurface Soil (0-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:41:06 AM
From File	So-Area2-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.995	nu hat (KM)	115.5
Approximate Chi Square Value (115.47, α)	91.66	Adjusted Chi Square Value (115.47, β)	91.12
95% Gamma Approximate KM-UCL (use when n>=50)	19.54	95% Gamma Adjusted KM-UCL (use when n<50)	19.65

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0081	Mean	15.51
Maximum	73.2	Median	9.755
SD	15.68	CV	1.011
k hat (MLE)	0.819	k star (bias corrected MLE)	0.788
Theta hat (MLE)	18.93	Theta star (bias corrected MLE)	19.67
nu hat (MLE)	95.02	nu star (bias corrected)	91.43
MLE Mean (bias corrected)	15.51	MLE Sd (bias corrected)	17.47
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (91.43, α)	70.38	Adjusted Chi Square Value (91.43, β)	69.91
95% Gamma Approximate UCL (use when n>=50)	20.15	95% Gamma Adjusted UCL (use when n<50)	20.28

Lognormal GOF Test on Detected Observations Only

Lilliefors Test Statistic	0.208	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.117	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	15.52	Mean in Log Scale	2.088
SD in Original Scale	15.67	SD in Log Scale	1.657
95% t UCL (assumes normality of ROS data)	18.96	95% Percentile Bootstrap UCL	19
95% BCA Bootstrap UCL	19.61	95% Bootstrap t UCL	19.52
95% H-UCL (Log ROS)	66.14		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	15.51	Mean in Log Scale	2.081
SD in Original Scale	15.67	SD in Log Scale	1.669
95% t UCL (Assumes normality)	18.96	95% H-Stat UCL	67.6

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	28.37

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ETHYLBENZENE

General Statistics

Total Number of Observations	30	Number of Distinct Observations	12
Number of Detects	5	Number of Non-Detects	25
Number of Distinct Detects	5	Number of Distinct Non-Detects	7
Minimum Detect	0.012	Minimum Non-Detect	0.001
Maximum Detect	28	Maximum Non-Detect	0.15
Variance Detects	128.5	Percent Non-Detects	83.33%
Mean Detects	12.04	SD Detects	11.34
Median Detects	11	CV Detects	0.941
Skewness Detects	0.526	Kurtosis Detects	-0.951
Mean of Logged Detects	1.072	SD of Logged Detects	3.177

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.956	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.182	Lilliefors GOF Test
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.008	Standard Error of Mean	1.246
SD	6.105	95% KM (BCA) UCL	4.042
95% KM (t) UCL	4.126	95% KM (Percentile Bootstrap) UCL	4.095
95% KM (z) UCL	4.058	95% KM Bootstrap t UCL	4.318
90% KM Chebyshev UCL	5.747	95% KM Chebyshev UCL	7.44
97.5% KM Chebyshev UCL	9.791	99% KM Chebyshev UCL	14.41

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.442	Anderson-Darling GOF Test
5% A-D Critical Value	0.717	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.27	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.373	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.455	k star (bias corrected MLE)	0.315
Theta hat (MLE)	26.46	Theta star (bias corrected MLE)	38.18
nu hat (MLE)	4.551	nu star (bias corrected)	3.154
MLE Mean (bias corrected)	12.04	MLE Sd (bias corrected)	21.44

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.108	nu hat (KM)	6.491
Approximate Chi Square Value (6.49, α)	1.895	Adjusted Chi Square Value (6.49, β)	1.756
95% Gamma Approximate KM-UCL (use when n>=50)	6.876	95% Gamma Adjusted KM-UCL (use when n<50)	7.422

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.015
Maximum	28	Median	0.01
SD	6.207	CV	3.08
k hat (MLE)	0.173	k star (bias corrected MLE)	0.178
Theta hat (MLE)	11.67	Theta star (bias corrected MLE)	11.35
nu hat (MLE)	10.36	nu star (bias corrected)	10.66
MLE Mean (bias corrected)	2.015	MLE Sd (bias corrected)	4.782
		Adjusted Level of Significance (β)	0.041
Approximate Chi Square Value (10.66, α)	4.356	Adjusted Chi Square Value (10.66, β)	4.125
95% Gamma Approximate UCL (use when n>=50)	4.93	95% Gamma Adjusted UCL (use when n<50)	5.206

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.769	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.311	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.008	Mean in Log Scale	-9.511
SD in Original Scale	6.21	SD in Log Scale	6.38
95% t UCL (assumes normality of ROS data)	3.934	95% Percentile Bootstrap UCL	4.002
95% BCA Bootstrap UCL	4.967	95% Bootstrap t UCL	7.081
95% H-UCL (Log ROS)	3.942E+10		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.541	95% H-UCL (KM -Log)	21.09
KM SD (logged)	3.191	95% Critical H Value (KM-Log)	5.905
KM Standard Error of Mean (logged)	0.655		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.024	Mean in Log Scale	-4.868
SD in Original Scale	6.205	SD in Log Scale	3.591
95% t UCL (Assumes normality)	3.948	95% H-Stat UCL	392

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	4.126	95% KM (Percentile Bootstrap) UCL	4.095

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

XYLENES,TOTAL

General Statistics

Total Number of Observations	27	Number of Distinct Observations	12
Number of Detects	8	Number of Non-Detects	19
Number of Distinct Detects	7	Number of Distinct Non-Detects	6
Minimum Detect	0.001	Minimum Non-Detect	0.001
Maximum Detect	94	Maximum Non-Detect	0.15
Variance Detects	1363	Percent Non-Detects	70.37%
Mean Detects	27.76	SD Detects	36.92
Median Detects	6.047	CV Detects	1.33
Skewness Detects	0.971	Kurtosis Detects	-0.591
Mean of Logged Detects	-0.499	SD of Logged Detects	4.777

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.775	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	8.228	Standard Error of Mean	4.665
SD	22.67	95% KM (BCA) UCL	16.45
95% KM (t) UCL	16.18	95% KM (Percentile Bootstrap) UCL	16.01
95% KM (z) UCL	15.9	95% KM Bootstrap t UCL	20.66
90% KM Chebyshev UCL	22.22	95% KM Chebyshev UCL	28.56
97.5% KM Chebyshev UCL	37.36	99% KM Chebyshev UCL	54.64

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.659	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.842	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.237	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.324	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.194	k star (bias corrected MLE)	0.204
Theta hat (MLE)	143.5	Theta star (bias corrected MLE)	135.9
nu hat (MLE)	3.096	nu star (bias corrected)	3.269
MLE Mean (bias corrected)	27.76	MLE Sd (bias corrected)	61.43

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.132	nu hat (KM)	7.112
Approximate Chi Square Value (7.11, α)	2.232	Adjusted Chi Square Value (7.11, β)	2.062
95% Gamma Approximate KM-UCL (use when n>=50)	26.22	95% Gamma Adjusted KM-UCL (use when n<50)	28.39

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.001	Mean	8.233
Maximum	94	Median	0.01
SD	23.1	CV	2.806
k hat (MLE)	0.141	k star (bias corrected MLE)	0.15
Theta hat (MLE)	58.36	Theta star (bias corrected MLE)	54.86
nu hat (MLE)	7.618	nu star (bias corrected)	8.105
MLE Mean (bias corrected)	8.233	MLE Sd (bias corrected)	21.25
		Adjusted Level of Significance (β)	0.0401
Approximate Chi Square Value (8.10, α)	2.796	Adjusted Chi Square Value (8.10, β)	2.6
95% Gamma Approximate UCL (use when n>=50)	23.87	95% Gamma Adjusted UCL (use when n<50)	25.67

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.847	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.234	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	8.226	Mean in Log Scale	-9.951
SD in Original Scale	23.11	SD in Log Scale	7.744
95% t UCL (assumes normality of ROS data)	15.81	95% Percentile Bootstrap UCL	16
95% BCA Bootstrap UCL	19.49	95% Bootstrap t UCL	20.81
95% H-UCL (Log ROS)	1.298E+18		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.869	95% H-UCL (KM -Log)	2027
KM SD (logged)	3.79	95% Critical H Value (KM-Log)	7.136
KM Standard Error of Mean (logged)	0.793		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	8.245	Mean in Log Scale	-4.092
SD in Original Scale	23.1	SD in Log Scale	3.98
95% t UCL (Assumes normality)	15.83	95% H-Stat UCL	15711

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	16.18	95% KM (Percentile Bootstrap) UCL	16.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)ANTHRACENE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	10
Number of Detects	2	Number of Non-Detects	13
Number of Distinct Detects	2	Number of Distinct Non-Detects	8
Minimum Detect	0.07	Minimum Non-Detect	0.004
Maximum Detect	0.32	Maximum Non-Detect	0.35
Variance Detects	0.0313	Percent Non-Detects	86.67%
Mean Detects	0.195	SD Detects	0.177
Median Detects	0.195	CV Detects	0.907
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-1.899	SD of Logged Detects	1.075

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0313	Standard Error of Mean	0.0309
SD	0.0818	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0858	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0822	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.124	95% KM Chebyshev UCL	0.166
97.5% KM Chebyshev UCL	0.224	99% KM Chebyshev UCL	0.339

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	2.041	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0956	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	8.163	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.146	nu hat (KM)	4.383
		Adjusted Level of Significance (β)	0.0324
Approximate Chi Square Value (4.38, α)	0.879	Adjusted Chi Square Value (4.38, β)	0.706
95% Gamma Approximate KM-UCL (use when n>=50)	0.156	95% Gamma Adjusted KM-UCL (use when n<50)	0.194

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0263	Mean in Log Scale	-8.018
SD in Original Scale	0.0832	SD in Log Scale	2.932
95% t UCL (assumes normality of ROS data)	0.0642	95% Percentile Bootstrap UCL	0.0646
95% BCA Bootstrap UCL	0.0947	95% Bootstrap t UCL	3.797
95% H-UCL (Log ROS)	3.746		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0481	Mean in Log Scale	-4.165
SD in Original Scale	0.087	SD in Log Scale	1.576
95% t UCL (Assumes normality)	0.0877	95% H-Stat UCL	0.261

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
Number of Detects	1	Number of Non-Detects	13
Number of Distinct Detects	1	Number of Distinct Non-Detects	8

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable BENZO(A)PYRENE was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
Number of Detects	1	Number of Non-Detects	13
Number of Distinct Detects	1	Number of Distinct Non-Detects	8

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable BENZO(B)FLUORANTHENE was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
Number of Detects	1	Number of Non-Detects	13
Number of Distinct Detects	1	Number of Distinct Non-Detects	8

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable Biphenyl was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DIBENZO(A,H)ANTHRACENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
Number of Detects	1	Number of Non-Detects	13
Number of Distinct Detects	1	Number of Distinct Non-Detects	8

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable DIBENZO(A,H)ANTHRACENE was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

INDENO(1,2,3-CD)PYRENE

General Statistics

Total Number of Observations	14	Number of Distinct Observations	9
Number of Detects	1	Number of Non-Detects	13
Number of Distinct Detects	1	Number of Distinct Non-Detects	8

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable INDENO(1,2,3-CD)PYRENE was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
		Number of Missing Observations	0
Minimum	1.8	Mean	4789
Maximum	8360	Median	5450
SD	2826	Std. Error of Mean	893.8
Coefficient of Variation	0.59	Skewness	-0.917

Normal GOF Test

Shapiro Wilk Test Statistic	0.886	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.183	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	6427	95% Adjusted-CLT UCL (Chen-1995)	5982
		95% Modified-t UCL (Johnson-1978)	6384

Gamma GOF Test

A-D Test Statistic	2.161	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.782	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.443	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.282	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.473	k star (bias corrected MLE)	0.397
Theta hat (MLE)	10134	Theta star (bias corrected MLE)	12048
nu hat (MLE)	9.451	nu star (bias corrected)	7.949
MLE Mean (bias corrected)	4789	MLE Sd (bias corrected)	7596
		Approximate Chi Square Value (0.05)	2.705
Adjusted Level of Significance	0.0267	Adjusted Chi Square Value	2.203

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	14069	95% Adjusted Gamma UCL (use when n<50)	17275

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.583	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.842	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.438	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.28	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	0.588	Mean of logged Data	7.118
Maximum of Logged Data	9.031	SD of logged Data	3.285

Assuming Lognormal Distribution

95% H-UCL	3.253E+9	90% Chebyshev (MVUE) UCL	182582
95% Chebyshev (MVUE) UCL	242728	97.5% Chebyshev (MVUE) UCL	326209
99% Chebyshev (MVUE) UCL	490191		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	6259	95% Jackknife UCL	6427
95% Standard Bootstrap UCL	6224	95% Bootstrap-t UCL	6097
95% Hall's Bootstrap UCL	5982	95% Percentile Bootstrap UCL	6109
95% BCA Bootstrap UCL	5973		
90% Chebyshev(Mean, Sd) UCL	7470	95% Chebyshev(Mean, Sd) UCL	8684
97.5% Chebyshev(Mean, Sd) UCL	10370	99% Chebyshev(Mean, Sd) UCL	13681

Suggested UCL to Use

95% Student's-t UCL 6427

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be
reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	10	Number of Distinct Observations	10
Number of Detects	6	Number of Non-Detects	4
Number of Distinct Detects	6	Number of Distinct Non-Detects	4
Minimum Detect	0.0072	Minimum Non-Detect	0.0012
Maximum Detect	13.5	Maximum Non-Detect	5.42
Variance Detects	21.17	Percent Non-Detects	40%
Mean Detects	5.268	SD Detects	4.601
Median Detects	4.01	CV Detects	0.873
Skewness Detects	1.242	Kurtosis Detects	2.169
Mean of Logged Detects	0.588	SD of Logged Detects	2.755

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.897	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.272	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.321	Standard Error of Mean	1.437
SD	4.099	95% KM (BCA) UCL	5.724
95% KM (t) UCL	5.955	95% KM (Percentile Bootstrap) UCL	5.694
95% KM (z) UCL	5.685	95% KM Bootstrap t UCL	6.714
90% KM Chebyshev UCL	7.631	95% KM Chebyshev UCL	9.584
97.5% KM Chebyshev UCL	12.29	99% KM Chebyshev UCL	17.62

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.724	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.731	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.371	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.347	Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.579	k star (bias corrected MLE)	0.4
Theta hat (MLE)	9.102	Theta star (bias corrected MLE)	13.15
nu hat (MLE)	6.945	nu star (bias corrected)	4.806
MLE Mean (bias corrected)	5.268	MLE Sd (bias corrected)	8.324

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.656	nu hat (KM)	13.13
Approximate Chi Square Value (13.13, α)	5.98	Adjusted Chi Square Value (13.13, β)	5.166
95% Gamma Approximate KM-UCL (use when n>=50)	7.293	95% Gamma Adjusted KM-UCL (use when n<50)	8.442

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	3.304
Maximum	13.5	Median	2.095
SD	4.273	CV	1.293
k hat (MLE)	0.404	k star (bias corrected MLE)	0.349
Theta hat (MLE)	8.182	Theta star (bias corrected MLE)	9.459
nu hat (MLE)	8.077	nu star (bias corrected)	6.987
MLE Mean (bias corrected)	3.304	MLE Sd (bias corrected)	5.591
		Adjusted Level of Significance (β)	0.0267
Approximate Chi Square Value (6.99, α)	2.164	Adjusted Chi Square Value (6.99, β)	1.728
95% Gamma Approximate UCL (use when n>=50)	10.67	95% Gamma Adjusted UCL (use when n<50)	13.36

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.677	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.414	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.182	Mean in Log Scale	-1.025
SD in Original Scale	4.36	SD in Log Scale	3.01
95% t UCL (assumes normality of ROS data)	5.71	95% Percentile Bootstrap UCL	5.564
95% BCA Bootstrap UCL	6.156	95% Bootstrap t UCL	7.253
95% H-UCL (Log ROS)	91098		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	3.539	Mean in Log Scale	-0.413
SD in Original Scale	4.15	SD in Log Scale	3.251
95% t UCL (Assumes normality)	5.945	95% H-Stat UCL	1296171

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	5.955	95% KM (Percentile Bootstrap) UCL	5.694

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT

General Statistics

Total Number of Observations	11	Number of Distinct Observations	11
Number of Detects	9	Number of Non-Detects	2
Number of Distinct Detects	9	Number of Distinct Non-Detects	2
Minimum Detect	0.431	Minimum Non-Detect	0.0055
Maximum Detect	6.54	Maximum Non-Detect	0.0061
Variance Detects	4.209	Percent Non-Detects	18.18%
Mean Detects	2.082	SD Detects	2.051
Median Detects	1.24	CV Detects	0.985
Skewness Detects	1.501	Kurtosis Detects	1.845
Mean of Logged Detects	0.32	SD of Logged Detects	0.966

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.798	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.321	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.704	Standard Error of Mean	0.615
SD	1.924	95% KM (BCA) UCL	2.811
95% KM (t) UCL	2.82	95% KM (Percentile Bootstrap) UCL	2.733
95% KM (z) UCL	2.716	95% KM Bootstrap t UCL	3.522
90% KM Chebyshev UCL	3.55	95% KM Chebyshev UCL	4.387
97.5% KM Chebyshev UCL	5.547	99% KM Chebyshev UCL	7.827

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.464	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.258	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.285	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.352	k star (bias corrected MLE)	0.976
Theta hat (MLE)	1.539	Theta star (bias corrected MLE)	2.134
nu hat (MLE)	24.34	nu star (bias corrected)	17.56
MLE Mean (bias corrected)	2.082	MLE Sd (bias corrected)	2.108

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.785	nu hat (KM)	17.26
Approximate Chi Square Value (17.26, α)	8.86	Adjusted Chi Square Value (17.26, β)	7.897
95% Gamma Approximate KM-UCL (use when n>=50)	3.321	95% Gamma Adjusted KM-UCL (use when n<50)	3.726

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1.705
Maximum	6.54	Median	1.17
SD	2.017	CV	1.183
k hat (MLE)	0.562	k star (bias corrected MLE)	0.47
Theta hat (MLE)	3.032	Theta star (bias corrected MLE)	3.631
nu hat (MLE)	12.37	nu star (bias corrected)	10.33
MLE Mean (bias corrected)	1.705	MLE Sd (bias corrected)	2.488
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (10.33, α)	4.151	Adjusted Chi Square Value (10.33, β)	3.535
95% Gamma Approximate UCL (use when n>=50)	4.245	95% Gamma Adjusted UCL (use when n<50)	4.984

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.922	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.2	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.728	Mean in Log Scale	-0.101
SD in Original Scale	1.997	SD in Log Scale	1.274
95% t UCL (assumes normality of ROS data)	2.819	95% Percentile Bootstrap UCL	2.694
95% BCA Bootstrap UCL	2.81	95% Bootstrap t UCL	3.596
95% H-UCL (Log ROS)	8.516		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-0.684	95% H-UCL (KM -Log)	454.4
KM SD (logged)	2.284	95% Critical H Value (KM-Log)	5.808
KM Standard Error of Mean (logged)	0.73		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1.704	Mean in Log Scale	-0.801
SD in Original Scale	2.018	SD in Log Scale	2.639
95% t UCL (Assumes normality)	2.807	95% H-Stat UCL	3721

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	4.387	95% GROS Adjusted Gamma UCL	4.984
95% Adjusted Gamma KM-UCL	3.726		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER

General Statistics

Total Number of Observations	11	Number of Distinct Observations	11
Number of Detects	9	Number of Non-Detects	2
Number of Distinct Detects	9	Number of Distinct Non-Detects	2
Minimum Detect	0.0058	Minimum Non-Detect	8.7
Maximum Detect	242	Maximum Non-Detect	12.9
Variance Detects	6321	Percent Non-Detects	18.18%
Mean Detects	30.27	SD Detects	79.5
Median Detects	2.98	CV Detects	2.626
Skewness Detects	2.985	Kurtosis Detects	8.932
Mean of Logged Detects	0.491	SD of Logged Detects	3.22

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.433	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.475	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	25.22	Standard Error of Mean	21.96
SD	68.65	95% KM (BCA) UCL	68.66
95% KM (t) UCL	65.02	95% KM (Percentile Bootstrap) UCL	68.47
95% KM (z) UCL	61.34	95% KM Bootstrap t UCL	674.4
90% KM Chebyshev UCL	91.09	95% KM Chebyshev UCL	120.9
97.5% KM Chebyshev UCL	162.3	99% KM Chebyshev UCL	243.7

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.623	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.83	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.266	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.305	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.244	k star (bias corrected MLE)	0.237
Theta hat (MLE)	124	Theta star (bias corrected MLE)	127.8
nu hat (MLE)	4.396	nu star (bias corrected)	4.264
MLE Mean (bias corrected)	30.27	MLE Sd (bias corrected)	62.2

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.135	nu hat (KM)	2.97
Approximate Chi Square Value (2.97, α)	0.363	Adjusted Chi Square Value (2.97, β)	0.255
95% Gamma Approximate KM-UCL (use when n>=50)	206.1	95% Gamma Adjusted KM-UCL (use when n<50)	293.8

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0058	Mean	24.77
Maximum	242	Median	1.72
SD	72.16	CV	2.913
k hat (MLE)	0.202	k star (bias corrected MLE)	0.207
Theta hat (MLE)	122.8	Theta star (bias corrected MLE)	119.5
nu hat (MLE)	4.436	nu star (bias corrected)	4.559
MLE Mean (bias corrected)	24.77	MLE Sd (bias corrected)	54.41
		Adjusted Level of Significance (β)	0.0278
Approximate Chi Square Value (4.56, α)	0.954	Adjusted Chi Square Value (4.56, β)	0.718
95% Gamma Approximate UCL (use when n>=50)	118.3	95% Gamma Adjusted UCL (use when n<50)	157.2

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.925	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.236	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	24.87	Mean in Log Scale	0.301
SD in Original Scale	72.12	SD in Log Scale	2.911
95% t UCL (assumes normality of ROS data)	64.28	95% Percentile Bootstrap UCL	67.75
95% BCA Bootstrap UCL	90.29	95% Bootstrap t UCL	809.5
95% H-UCL (Log ROS)	75718		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	0.307	95% H-UCL (KM -Log)	131120
KM SD (logged)	2.983	95% Critical H Value (KM-Log)	7.449
KM Standard Error of Mean (logged)	1.034		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	25.75	Mean in Log Scale	0.705
SD in Original Scale	71.82	SD in Log Scale	2.92
95% t UCL (Assumes normality)	65	95% H-Stat UCL	121718

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	120.9	95% GROS Adjusted Gamma UCL	157.2
95% Adjusted Gamma KM-UCL	293.8		

Warning: Recommended UCL exceeds the maximum observation

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MANGANESE

General Statistics

Total Number of Observations	11	Number of Distinct Observations	10
		Number of Missing Observations	0
Minimum	0.019	Mean	35.95
Maximum	159	Median	19.4
SD	48	Std. Error of Mean	14.47
Coefficient of Variation	1.335	Skewness	2.088

Normal GOF Test

Shapiro Wilk Test Statistic	0.719	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.33	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	62.18	95% Adjusted-CLT UCL (Chen-1995)	69.49
		95% Modified-t UCL (Johnson-1978)	63.7

Gamma GOF Test

A-D Test Statistic	0.608	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.795	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.256	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.272	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.426	k star (bias corrected MLE)	0.371
Theta hat (MLE)	84.36	Theta star (bias corrected MLE)	97.03
nu hat (MLE)	9.376	nu star (bias corrected)	8.152
MLE Mean (bias corrected)	35.95	MLE Sd (bias corrected)	59.06
		Approximate Chi Square Value (0.05)	2.823
Adjusted Level of Significance	0.0278	Adjusted Chi Square Value	2.338

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	103.8	95% Adjusted Gamma UCL (use when n<50)	125.4

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.752	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.85	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.351	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.267	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-3.963	Mean of logged Data	2.054
Maximum of Logged Data	5.069	SD of logged Data	2.985

Assuming Lognormal Distribution

95% H-UCL	761468	90% Chebyshev (MVUE) UCL	698.2
95% Chebyshev (MVUE) UCL	924.9	97.5% Chebyshev (MVUE) UCL	1240
99% Chebyshev (MVUE) UCL	1858		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	59.76	95% Jackknife UCL	62.18
95% Standard Bootstrap UCL	58.54	95% Bootstrap-t UCL	120.7
95% Hall's Bootstrap UCL	188.3	95% Percentile Bootstrap UCL	60.42
95% BCA Bootstrap UCL	70.71		
90% Chebyshev(Mean, Sd) UCL	79.37	95% Chebyshev(Mean, Sd) UCL	99.03
97.5% Chebyshev(Mean, Sd) UCL	126.3	99% Chebyshev(Mean, Sd) UCL	179.9

Suggested UCL to Use

95% Adjusted Gamma UCL 125.4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.0079	Mean	32.96
Maximum	73	Median	25.8
SD	31.54	Std. Error of Mean	10.51
Coefficient of Variation	0.957	Skewness	0.245

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use
guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test

Shapiro Wilk Test Statistic	0.835	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.227	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	52.51	95% Adjusted-CLT UCL (Chen-1995)	51.17
		95% Modified-t UCL (Johnson-1978)	52.65

Gamma GOF Test

A-D Test Statistic	0.726	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.794	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.225	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.299	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.371	k star (bias corrected MLE)	0.321
Theta hat (MLE)	88.82	Theta star (bias corrected MLE)	102.5
nu hat (MLE)	6.678	nu star (bias corrected)	5.786
MLE Mean (bias corrected)	32.96	MLE Sd (bias corrected)	58.13
		Approximate Chi Square Value (0.05)	1.531
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	1.118

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	124.5	95% Adjusted Gamma UCL (use when n<50)	170.5

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.763	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.263	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.295	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 2 Subsurface Soil (2-10 ft bgs)
Second Interim Deliverable
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:26:44 PM
From File	SO-Area2-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-4.841	Mean of logged Data	1.7
Maximum of Logged Data	4.29	SD of logged Data	3.458

Assuming Lognormal Distribution

95% H-UCL	2.626E+8	90% Chebyshev (MVUE) UCL	1010
95% Chebyshev (MVUE) UCL	1345	97.5% Chebyshev (MVUE) UCL	1811
99% Chebyshev (MVUE) UCL	2724		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	50.25	95% Jackknife UCL	52.51
95% Standard Bootstrap UCL	49.54	95% Bootstrap-t UCL	53.68
95% Hall's Bootstrap UCL	46.29	95% Percentile Bootstrap UCL	49.82
95% BCA Bootstrap UCL	50.97		
90% Chebyshev(Mean, Sd) UCL	64.5	95% Chebyshev(Mean, Sd) UCL	78.79
97.5% Chebyshev(Mean, Sd) UCL	98.62	99% Chebyshev(Mean, Sd) UCL	137.6

Suggested UCL to Use

95% Student's-t UCL 52.51

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 2 Surface and Subsurface Soil (2-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/9/2014 11:47:56 AM
From File	So-Area2-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	9	Number of Distinct Observations	9
		Number of Missing Observations	0
Minimum	0.0081	Mean	23.45
Maximum	59.2	Median	18.2
SD	22.04	Std. Error of Mean	7.348
Coefficient of Variation	0.94	Skewness	0.516

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest. For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012). Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test

Shapiro Wilk Test Statistic	0.908	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.186	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	37.12	95% Adjusted-CLT UCL (Chen-1995)	36.89
		95% Modified-t UCL (Johnson-1978)	37.33

Gamma GOF Test

A-D Test Statistic	0.693	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.788	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.223	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.407	k star (bias corrected MLE)	0.346
Theta hat (MLE)	57.56	Theta star (bias corrected MLE)	67.84
nu hat (MLE)	7.333	nu star (bias corrected)	6.222
MLE Mean (bias corrected)	23.45	MLE Sd (bias corrected)	39.89
		Approximate Chi Square Value (0.05)	1.754
Adjusted Level of Significance	0.0231	Adjusted Chi Square Value	1.301

Attachment F
ProUCL Output Area 2 Surface and Subsurface Soil (2-10ft)
Human Health Risk Assessment
CPS Madison
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/9/2014 11:47:56 AM
From File	So-Area2-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	83.17	95% Adjusted Gamma UCL (use when n<50)	112.1

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.752	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.829	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.315	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.295	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-4.816	Mean of logged Data	1.544
Maximum of Logged Data	4.081	SD of logged Data	3.276

Assuming Lognormal Distribution

95% H-UCL	37458985	90% Chebyshev (MVUE) UCL	616.2
95% Chebyshev (MVUE) UCL	819.5	97.5% Chebyshev (MVUE) UCL	1102
99% Chebyshev (MVUE) UCL	1656		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	35.54	95% Jackknife UCL	37.12
95% Standard Bootstrap UCL	34.73	95% Bootstrap-t UCL	39.82
95% Hall's Bootstrap UCL	35.74	95% Percentile Bootstrap UCL	35.27
95% BCA Bootstrap UCL	35.4		
90% Chebyshev(Mean, Sd) UCL	45.5	95% Chebyshev(Mean, Sd) UCL	55.48
97.5% Chebyshev(Mean, Sd) UCL	69.34	99% Chebyshev(Mean, Sd) UCL	96.57

Suggested UCL to Use

95% Student's-t UCL	37.12

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	23	Number of Distinct Observations	10
Number of Detects	2	Number of Non-Detects	21
Number of Distinct Detects	2	Number of Distinct Non-Detects	9
Minimum Detect	0.019	Minimum Non-Detect	0.004
Maximum Detect	0.064	Maximum Non-Detect	0.043
Variance Detects	0.00101	Percent Non-Detects	91.3%
Mean Detects	0.0415	SD Detects	0.0318
Median Detects	0.0415	CV Detects	0.767
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-3.356	SD of Logged Detects	0.859

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0102	Standard Error of Mean	0.00554
SD	0.0131	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0197	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0193	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0268	95% KM Chebyshev UCL	0.0344
97.5% KM Chebyshev UCL	0.0448	99% KM Chebyshev UCL	0.0654

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	3.029	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0137	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	12.12	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.605	nu hat (KM)	27.81
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (27.81, α)	16.78	Adjusted Chi Square Value (27.81, β)	16.16
95% Gamma Approximate KM-UCL (use when n>=50)	0.0169	95% Gamma Adjusted KM-UCL (use when n<50)	0.0175

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0096	Mean in Log Scale	-5.077
SD in Original Scale	0.0129	SD in Log Scale	0.856
95% t UCL (assumes normality of ROS data)	0.0142	95% Percentile Bootstrap UCL	0.0144
95% BCA Bootstrap UCL	0.0165	95% Bootstrap t UCL	0.0209
95% H-UCL (Log ROS)	0.0138		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0198	Mean in Log Scale	-4.049
SD in Original Scale	0.0107	SD in Log Scale	0.582
95% t UCL (Assumes normality)	0.0236	95% H-Stat UCL	0.0266

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0197	95% KM (% Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	23	Number of Distinct Observations	12
Number of Detects	6	Number of Non-Detects	17
Number of Distinct Detects	6	Number of Distinct Non-Detects	6
Minimum Detect	0.008	Minimum Non-Detect	0.034
Maximum Detect	0.1	Maximum Non-Detect	0.04
Variance Detects	0.00126	Percent Non-Detects	73.91%
Mean Detects	0.0563	SD Detects	0.0356
Median Detects	0.055	CV Detects	0.631
Skewness Detects	-0.0595	Kurtosis Detects	-1.39
Mean of Logged Detects	-3.148	SD of Logged Detects	0.939

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.961	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.169	Lilliefors GOF Test
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0284	Standard Error of Mean	0.00857
SD	0.0251	95% KM (BCA) UCL	0.0457
95% KM (t) UCL	0.0431	95% KM (Percentile Bootstrap) UCL	0.0449
95% KM (z) UCL	0.0425	95% KM Bootstrap t UCL	0.0469
90% KM Chebyshev UCL	0.0541	95% KM Chebyshev UCL	0.0657
97.5% KM Chebyshev UCL	0.0819	99% KM Chebyshev UCL	0.114

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.285	Anderson-Darling GOF Test
5% A-D Critical Value	0.704	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.166	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.336	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.989	k star (bias corrected MLE)	1.106
Theta hat (MLE)	0.0283	Theta star (bias corrected MLE)	0.0509
nu hat (MLE)	23.87	nu star (bias corrected)	13.27
MLE Mean (bias corrected)	0.0563	MLE Sd (bias corrected)	0.0536

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.273	nu hat (KM)	58.54
Approximate Chi Square Value (58.54, α)	41.95	Adjusted Chi Square Value (58.54, β)	40.93
95% Gamma Approximate KM-UCL (use when n>=50)	0.0396	95% Gamma Adjusted KM-UCL (use when n<50)	0.0406

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.008	Mean	0.0282
Maximum	0.1	Median	0.015
SD	0.0254	CV	0.9
k hat (MLE)	1.842	k star (bias corrected MLE)	1.631
Theta hat (MLE)	0.0153	Theta star (bias corrected MLE)	0.0173
nu hat (MLE)	84.73	nu star (bias corrected)	75.01
MLE Mean (bias corrected)	0.0282	MLE Sd (bias corrected)	0.0221
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (75.01, α)	56.06	Adjusted Chi Square Value (75.01, β)	54.87
95% Gamma Approximate UCL (use when n>=50)	0.0378	95% Gamma Adjusted UCL (use when n<50)	0.0386

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.88	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.205	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0264	Mean in Log Scale	-3.974
SD in Original Scale	0.0257	SD in Log Scale	0.803
95% t UCL (assumes normality of ROS data)	0.0356	95% Percentile Bootstrap UCL	0.0359
95% BCA Bootstrap UCL	0.0391	95% Bootstrap t UCL	0.0397
95% H-UCL (Log ROS)	0.0384		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.914	95% H-UCL (KM -Log)	0.0431
KM SD (logged)	0.84	95% Critical H Value (KM-Log)	2.326
KM Standard Error of Mean (logged)	0.434		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0289	Mean in Log Scale	-3.741
SD in Original Scale	0.0238	SD in Log Scale	0.576
95% t UCL (Assumes normality)	0.0374	95% H-Stat UCL	0.036

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0431	95% KM (Percentile Bootstrap) UCL	0.0449

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	23	Number of Distinct Observations	13
Number of Detects	7	Number of Non-Detects	16
Number of Distinct Detects	7	Number of Distinct Non-Detects	6
Minimum Detect	0.016	Minimum Non-Detect	0.034
Maximum Detect	0.15	Maximum Non-Detect	0.04
Variance Detects	0.00227	Percent Non-Detects	69.57%
Mean Detects	0.0807	SD Detects	0.0476
Median Detects	0.062	CV Detects	0.59
Skewness Detects	0.296	Kurtosis Detects	-1.037
Mean of Logged Detects	-2.717	SD of Logged Detects	0.755

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.953	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.224	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0357	Standard Error of Mean	0.00866
SD	0.0384	95% KM (BCA) UCL	0.062
95% KM (t) UCL	0.0506	95% KM (Percentile Bootstrap) UCL	0.0587
95% KM (z) UCL	0.0499	95% KM Bootstrap t UCL	0.0518
90% KM Chebyshev UCL	0.0617	95% KM Chebyshev UCL	0.0734
97.5% KM Chebyshev UCL	0.0898	99% KM Chebyshev UCL	0.122

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.257	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.713	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.151	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.314	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.659	k star (bias corrected MLE)	1.615
Theta hat (MLE)	0.0304	Theta star (bias corrected MLE)	0.05
nu hat (MLE)	37.22	nu star (bias corrected)	22.6
MLE Mean (bias corrected)	0.0807	MLE Sd (bias corrected)	0.0635

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.862	nu hat (KM)	39.66
Approximate Chi Square Value (39.66, α)	26.23	Adjusted Chi Square Value (39.66, β)	25.44
95% Gamma Approximate KM-UCL (use when n>=50)	0.054	95% Gamma Adjusted KM-UCL (use when n<50)	0.0556

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0343
Maximum	0.15	Median	0.01
SD	0.0405	CV	1.182
k hat (MLE)	1.147	k star (bias corrected MLE)	1.026
Theta hat (MLE)	0.0299	Theta star (bias corrected MLE)	0.0334
nu hat (MLE)	52.74	nu star (bias corrected)	47.19
MLE Mean (bias corrected)	0.0343	MLE Sd (bias corrected)	0.0339
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (47.19, α)	32.43	Adjusted Chi Square Value (47.19, β)	31.54
95% Gamma Approximate UCL (use when n>=50)	0.0499	95% Gamma Adjusted UCL (use when n<50)	0.0513

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.913	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.193	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.335	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0362	Mean in Log Scale	-3.755
SD in Original Scale	0.0396	SD in Log Scale	0.908
95% t UCL (assumes normality of ROS data)	0.0503	95% Percentile Bootstrap UCL	0.0503
95% BCA Bootstrap UCL	0.054	95% Bootstrap t UCL	0.0568
95% H-UCL (Log ROS)	0.0564		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.703	95% H-UCL (KM -Log)	0.0471
KM SD (logged)	0.758	95% Critical H Value (KM-Log)	2.231
KM Standard Error of Mean (logged)	0.171		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.0379	Mean in Log Scale	-3.577
SD in Original Scale	0.0382	SD in Log Scale	0.704
95% t UCL (Assumes normality)	0.0516	95% H-Stat UCL	0.0496

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0506	95% KM (Percentile Bootstrap) UCL	0.0587

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	23	Number of Distinct Observations	12
Number of Detects	2	Number of Non-Detects	21
Number of Distinct Detects	2	Number of Distinct Non-Detects	10
Minimum Detect	0.066	Minimum Non-Detect	0.018
Maximum Detect	7	Maximum Non-Detect	0.17
Variance Detects	24.04	Percent Non-Detects	91.3%
Mean Detects	3.533	SD Detects	4.903
Median Detects	3.533	CV Detects	1.388
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-0.386	SD of Logged Detects	3.298

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.324	Standard Error of Mean	0.42
SD	1.423	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1.045	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1.015	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.583	95% KM Chebyshev UCL	2.154
97.5% KM Chebyshev UCL	2.945	99% KM Chebyshev UCL	4.5

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.399	k star (bias corrected MLE)	N/A
Theta hat (MLE)	8.847	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	1.597	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0519	nu hat (KM)	2.385
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (2.39, α)	0.216	Adjusted Chi Square Value (2.39, β)	0.186
95% Gamma Approximate KM-UCL (use when n>=50)	3.574	95% Gamma Adjusted KM-UCL (use when n<50)	4.163

Gamma (KM) may not be used when k hat (KM) is < 0.1

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.307	Mean in Log Scale	-15.05
SD in Original Scale	1.459	SD in Log Scale	6.207
95% t UCL (assumes normality of ROS data)	0.83	95% Percentile Bootstrap UCL	0.916
95% BCA Bootstrap UCL	1.223	95% Bootstrap t UCL	6865
95% H-UCL (Log ROS)	2.829E+8		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.331	Mean in Log Scale	-3.482
SD in Original Scale	1.454	SD in Log Scale	1.285
95% t UCL (Assumes normality)	0.852	95% H-Stat UCL	0.156

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	4.5

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	18	Number of Distinct Observations	18
		Number of Missing Observations	0
Minimum	1180	Mean	2678
Maximum	4730	Median	2540
SD	1103	Std. Error of Mean	260.1
Coefficient of Variation	0.412	Skewness	0.567

Normal GOF Test

Shapiro Wilk Test Statistic	0.914	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.157	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3131	95% Adjusted-CLT UCL (Chen-1995)	3143
		95% Modified-t UCL (Johnson-1978)	3137

Gamma GOF Test

A-D Test Statistic	0.433	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.742	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.121	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.204	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	6.23	k star (bias corrected MLE)	5.229
Theta hat (MLE)	429.9	Theta star (bias corrected MLE)	512.2
nu hat (MLE)	224.3	nu star (bias corrected)	188.2
MLE Mean (bias corrected)	2678	MLE Sd (bias corrected)	1171
		Approximate Chi Square Value (0.05)	157.5
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	154.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	3201	95% Adjusted Gamma UCL (use when n<50)	3257

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.941	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.125	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.209	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	7.073	Mean of logged Data	7.811
Maximum of Logged Data	8.462	SD of logged Data	0.424

Assuming Lognormal Distribution

95% H-UCL	3299	90% Chebyshev (MVUE) UCL	3510
95% Chebyshev (MVUE) UCL	3884	97.5% Chebyshev (MVUE) UCL	4403
99% Chebyshev (MVUE) UCL	5422		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	3106	95% Jackknife UCL	3131
95% Standard Bootstrap UCL	3092	95% Bootstrap-t UCL	3193
95% Hall's Bootstrap UCL	3130	95% Percentile Bootstrap UCL	3101
95% BCA Bootstrap UCL	3131		
90% Chebyshev(Mean, Sd) UCL	3459	95% Chebyshev(Mean, Sd) UCL	3812
97.5% Chebyshev(Mean, Sd) UCL	4303	99% Chebyshev(Mean, Sd) UCL	5266

Suggested UCL to Use

95% Student's-t UCL	3131

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	18	Number of Distinct Observations	17
Number of Detects	14	Number of Non-Detects	4
Number of Distinct Detects	14	Number of Distinct Non-Detects	3
Minimum Detect	1.15	Minimum Non-Detect	1.05
Maximum Detect	9.36	Maximum Non-Detect	1.21
Variance Detects	7.475	Percent Non-Detects	22.22%
Mean Detects	3.337	SD Detects	2.734
Median Detects	2.295	CV Detects	0.819
Skewness Detects	1.544	Kurtosis Detects	0.823
Mean of Logged Detects	0.97	SD of Logged Detects	0.66

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.694	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.371	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.83	Standard Error of Mean	0.614
SD	2.51	95% KM (BCA) UCL	3.866
95% KM (t) UCL	3.898	95% KM (Percentile Bootstrap) UCL	3.837
95% KM (z) UCL	3.84	95% KM Bootstrap t UCL	4.339
90% KM Chebyshev UCL	4.672	95% KM Chebyshev UCL	5.506
97.5% KM Chebyshev UCL	6.664	99% KM Chebyshev UCL	8.938

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.448	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.745	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.308	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.231	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.276	k star (bias corrected MLE)	1.836
Theta hat (MLE)	1.466	Theta star (bias corrected MLE)	1.818
nu hat (MLE)	63.73	nu star (bias corrected)	51.41
MLE Mean (bias corrected)	3.337	MLE Sd (bias corrected)	2.463

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.272	nu hat (KM)	45.79
Approximate Chi Square Value (45.79, α)	31.27	Adjusted Chi Square Value (45.79, β)	30.12
95% Gamma Approximate KM-UCL (use when n>=50)	4.145	95% Gamma Adjusted KM-UCL (use when n<50)	4.304

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.598
Maximum	9.36	Median	1.885
SD	2.782	CV	1.071
k hat (MLE)	0.516	k star (bias corrected MLE)	0.467
Theta hat (MLE)	5.03	Theta star (bias corrected MLE)	5.558
nu hat (MLE)	18.59	nu star (bias corrected)	16.83
MLE Mean (bias corrected)	2.598	MLE Sd (bias corrected)	3.8
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (16.83, α)	8.548	Adjusted Chi Square Value (16.83, β)	7.985
95% Gamma Approximate UCL (use when n>=50)	5.114	95% Gamma Adjusted UCL (use when n<50)	5.474

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.838	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.26	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.734	Mean in Log Scale	0.647
SD in Original Scale	2.658	SD in Log Scale	0.851
95% t UCL (assumes normality of ROS data)	3.824	95% Percentile Bootstrap UCL	3.797
95% BCA Bootstrap UCL	3.951	95% Bootstrap t UCL	4.21
95% H-UCL (Log ROS)	4.529		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.722	Mean in Log Scale	0.628
SD in Original Scale	2.668	SD in Log Scale	0.875
95% t UCL (Assumes normality)	3.816	95% H-Stat UCL	4.637

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	3.866

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	18	Number of Distinct Observations	18
		Number of Missing Observations	0
Minimum	4.53	Mean	14.19
Maximum	40	Median	11.65
SD	8.6	Std. Error of Mean	2.027
Coefficient of Variation	0.606	Skewness	1.638

Normal GOF Test

Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.156	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Data appear Normal at 5% Significance Level

Data appear Approximate Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	17.71	95% Adjusted-CLT UCL (Chen-1995)	18.36
		95% Modified-t UCL (Johnson-1978)	17.84

Gamma GOF Test

A-D Test Statistic	0.242	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.744	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.102	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.205	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.407	k star (bias corrected MLE)	2.877
Theta hat (MLE)	4.163	Theta star (bias corrected MLE)	4.932
nu hat (MLE)	122.7	nu star (bias corrected)	103.6
MLE Mean (bias corrected)	14.19	MLE Sd (bias corrected)	8.364
		Approximate Chi Square Value (0.05)	81.08
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	79.17

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	18.12	95% Adjusted Gamma UCL (use when n<50)	18.56

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.981	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.111	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.209	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:16:58 PM
From File	SO-Area3-0-2ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	1.511	Mean of logged Data	2.498
Maximum of Logged Data	3.689	SD of logged Data	0.569

Assuming Lognormal Distribution

95% H-UCL	19.08	90% Chebyshev (MVUE) UCL	20.1
95% Chebyshev (MVUE) UCL	22.79	97.5% Chebyshev (MVUE) UCL	26.53
99% Chebyshev (MVUE) UCL	33.87		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	17.52	95% Jackknife UCL	17.71
95% Standard Bootstrap UCL	17.41	95% Bootstrap-t UCL	19.18
95% Hall's Bootstrap UCL	20.65	95% Percentile Bootstrap UCL	17.62
95% BCA Bootstrap UCL	18.38		
90% Chebyshev(Mean, Sd) UCL	20.27	95% Chebyshev(Mean, Sd) UCL	23.02
97.5% Chebyshev(Mean, Sd) UCL	26.84	99% Chebyshev(Mean, Sd) UCL	34.35

Suggested UCL to Use

95% Student's-t UCL	17.71

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:44:56 AM
From File	So-Area3-0-2ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	18	Number of Distinct Observations	18
		Number of Missing Observations	0
Minimum	3.15	Mean	10.22
Maximum	45.8	Median	7.33
SD	9.95	Std. Error of Mean	2.345
Coefficient of Variation	0.974	Skewness	2.975

Normal GOF Test

Shapiro Wilk Test Statistic	0.649	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.255	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	14.3	95% Adjusted-CLT UCL (Chen-1995)	15.83
		95% Modified-t UCL (Johnson-1978)	14.57

Gamma GOF Test

A-D Test Statistic	0.685	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.753	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.173	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.206	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.011	k star (bias corrected MLE)	1.713
Theta hat (MLE)	5.083	Theta star (bias corrected MLE)	5.967
nu hat (MLE)	72.38	nu star (bias corrected)	61.65
MLE Mean (bias corrected)	10.22	MLE Sd (bias corrected)	7.809
		Approximate Chi Square Value (0.05)	44.59
Adjusted Level of Significance	0.0357	Adjusted Chi Square Value	43.2

Attachment F
ProUCL Output Area 3 Surface Soil (0-2ft)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:44:56 AM
From File	So-Area3-0-2ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	14.13	95% Adjusted Gamma UCL (use when n<50)	14.58

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.942	Shapiro Wilk Lognormal GOF Test
5% Shapiro Wilk Critical Value	0.897	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.116	Lilliefors Lognormal GOF Test
5% Lilliefors Critical Value	0.209	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.147	Mean of logged Data	2.055
Maximum of Logged Data	3.824	SD of logged Data	0.694

Assuming Lognormal Distribution

95% H-UCL	14.46	90% Chebyshev (MVUE) UCL	14.87
95% Chebyshev (MVUE) UCL	17.17	97.5% Chebyshev (MVUE) UCL	20.37
99% Chebyshev (MVUE) UCL	26.66		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	14.08	95% Jackknife UCL	14.3
95% Standard Bootstrap UCL	13.94	95% Bootstrap-t UCL	18.74
95% Hall's Bootstrap UCL	30.01	95% Percentile Bootstrap UCL	14.44
95% BCA Bootstrap UCL	16.33		
90% Chebyshev(Mean, Sd) UCL	17.26	95% Chebyshev(Mean, Sd) UCL	20.44
97.5% Chebyshev(Mean, Sd) UCL	24.87	99% Chebyshev(Mean, Sd) UCL	33.55

Suggested UCL to Use

95% Adjusted Gamma UCL	14.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area3 Surface and Subsurface Soil (0-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CYCLOHEXANE, METHYL-

General Statistics

Total Number of Observations	12	Number of Distinct Observations	3
Number of Detects	1	Number of Non-Detects	11
Number of Distinct Detects	1	Number of Distinct Non-Detects	2

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable CYCLOHEXANE, METHYL- was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	44	Number of Distinct Observations	14
Number of Detects	4	Number of Non-Detects	40
Number of Distinct Detects	4	Number of Distinct Non-Detects	11
Minimum Detect	0.019	Minimum Non-Detect	0.004
Maximum Detect	91	Maximum Non-Detect	0.043
Variance Detects	2062	Percent Non-Detects	90.91%
Mean Detects	22.88	SD Detects	45.41
Median Detects	0.257	CV Detects	1.984
Skewness Detects	2	Kurtosis Detects	4
Mean of Logged Detects	-0.75	SD of Logged Detects	3.742

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.633	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.439	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.085	Standard Error of Mean	2.36
SD	13.56	95% KM (BCA) UCL	N/A
95% KM (t) UCL	6.053	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	5.968	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	9.167	95% KM Chebyshev UCL	12.37
97.5% KM Chebyshev UCL	16.83	99% KM Chebyshev UCL	25.57

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.555	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.739	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.376	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.426	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.191	k star (bias corrected MLE)	0.214
Theta hat (MLE)	119.8	Theta star (bias corrected MLE)	106.7
nu hat (MLE)	1.528	nu star (bias corrected)	1.715
MLE Mean (bias corrected)	22.88	MLE Sd (bias corrected)	49.42

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0237	nu hat (KM)	2.081
Approximate Chi Square Value (2.08, α)	0.162	Adjusted Chi Square Value (2.08, β)	0.152
95% Gamma Approximate KM-UCL (use when n>=50)	26.78	95% Gamma Adjusted KM-UCL (use when n<50)	28.48

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.089
Maximum	91	Median	0.01
SD	13.72	CV	6.564
k hat (MLE)	0.153	k star (bias corrected MLE)	0.158
Theta hat (MLE)	13.61	Theta star (bias corrected MLE)	13.21
nu hat (MLE)	13.5	nu star (bias corrected)	13.92
MLE Mean (bias corrected)	2.089	MLE Sd (bias corrected)	5.254
		Adjusted Level of Significance (β)	0.0445
Approximate Chi Square Value (13.92, α)	6.515	Adjusted Chi Square Value (13.92, β)	6.343
95% Gamma Approximate UCL (use when n>=50)	4.463	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.901	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.255	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.08	Mean in Log Scale	-14.23
SD in Original Scale	13.72	SD in Log Scale	6.443
95% t UCL (assumes normality of ROS data)	5.557	95% Percentile Bootstrap UCL	6.216
95% BCA Bootstrap UCL	10.35	95% Bootstrap t UCL	2958
95% H-UCL (Log ROS)	23379963		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.942	95% H-UCL (KM -Log)	0.0718
KM SD (logged)	1.708	95% Critical H Value (KM-Log)	3.263
KM Standard Error of Mean (logged)	0.345		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2.096	Mean in Log Scale	-3.939
SD in Original Scale	13.71	SD in Log Scale	1.598
95% t UCL (Assumes normality)	5.571	95% H-Stat UCL	0.149

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	6.053	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	44	Number of Distinct Observations	19
Number of Detects	8	Number of Non-Detects	36
Number of Distinct Detects	8	Number of Distinct Non-Detects	11
Minimum Detect	0.008	Minimum Non-Detect	0.004
Maximum Detect	0.1	Maximum Non-Detect	0.2
Variance Detects	9.9943E-4	Percent Non-Detects	81.82%
Mean Detects	0.0615	SD Detects	0.0316
Median Detects	0.068	CV Detects	0.514
Skewness Detects	-0.596	Kurtosis Detects	-0.62
Mean of Logged Detects	-3.003	SD of Logged Detects	0.839

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.956	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.144	Lilliefors GOF Test
5% Lilliefors Critical Value	0.313	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.019	Standard Error of Mean	0.00557
SD	0.0255	95% KM (BCA) UCL	0.0292
95% KM (t) UCL	0.0284	95% KM (Percentile Bootstrap) UCL	0.0293
95% KM (z) UCL	0.0282	95% KM Bootstrap t UCL	0.0311
90% KM Chebyshev UCL	0.0357	95% KM Chebyshev UCL	0.0433
97.5% KM Chebyshev UCL	0.0538	99% KM Chebyshev UCL	0.0745

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.5	Anderson-Darling GOF Test
5% A-D Critical Value	0.723	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.224	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.297	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.491	k star (bias corrected MLE)	1.64
Theta hat (MLE)	0.0247	Theta star (bias corrected MLE)	0.0375
nu hat (MLE)	39.86	nu star (bias corrected)	26.25
MLE Mean (bias corrected)	0.0615	MLE Sd (bias corrected)	0.048

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.558	nu hat (KM)	49.11
Approximate Chi Square Value (49.11, α)	34.02	Adjusted Chi Square Value (49.11, β)	33.6
95% Gamma Approximate KM-UCL (use when n>=50)	0.0274	95% Gamma Adjusted KM-UCL (use when n<50)	0.0278

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.008	Mean	0.0211
Maximum	0.1	Median	0.01
SD	0.0236	CV	1.117
k hat (MLE)	1.586	k star (bias corrected MLE)	1.493
Theta hat (MLE)	0.0133	Theta star (bias corrected MLE)	0.0142
nu hat (MLE)	139.5	nu star (bias corrected)	131.4
MLE Mean (bias corrected)	0.0211	MLE Sd (bias corrected)	0.0173
		Adjusted Level of Significance (β)	0.0445
Approximate Chi Square Value (131.35, α)	105.9	Adjusted Chi Square Value (131.35, β)	105.1
95% Gamma Approximate UCL (use when n>=50)	0.0262	95% Gamma Adjusted UCL (use when n<50)	0.0264

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.807	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.237	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0176	Mean in Log Scale	-4.74
SD in Original Scale	0.0251	SD in Log Scale	1.138
95% t UCL (assumes normality of ROS data)	0.0239	95% Percentile Bootstrap UCL	0.0241
95% BCA Bootstrap UCL	0.0254	95% Bootstrap t UCL	0.0259
95% H-UCL (Log ROS)	0.0259		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.655	95% H-UCL (KM -Log)	0.0262
KM SD (logged)	1.095	95% Critical H Value (KM-Log)	2.475
KM Standard Error of Mean (logged)	0.345		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0277	Mean in Log Scale	-3.89
SD in Original Scale	0.0244	SD in Log Scale	0.837
95% t UCL (Assumes normality)	0.0339	95% H-Stat UCL	0.0384

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0284	95% KM (Percentile Bootstrap) UCL	0.0293

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	44	Number of Distinct Observations	20
Number of Detects	10	Number of Non-Detects	34
Number of Distinct Detects	9	Number of Distinct Non-Detects	11
Minimum Detect	0.007	Minimum Non-Detect	0.004
Maximum Detect	0.15	Maximum Non-Detect	0.2
Variance Detects	0.00216	Percent Non-Detects	77.27%
Mean Detects	0.0766	SD Detects	0.0464
Median Detects	0.0785	CV Detects	0.606
Skewness Detects	-0.0199	Kurtosis Detects	-0.794
Mean of Logged Detects	-2.864	SD of Logged Detects	0.974

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.962	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.154	Lilliefors GOF Test
5% Lilliefors Critical Value	0.28	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0236	Standard Error of Mean	0.00617
SD	0.0363	95% KM (BCA) UCL	0.0409
95% KM (t) UCL	0.034	95% KM (Percentile Bootstrap) UCL	0.0347
95% KM (z) UCL	0.0337	95% KM Bootstrap t UCL	0.0362
90% KM Chebyshev UCL	0.0421	95% KM Chebyshev UCL	0.0505
97.5% KM Chebyshev UCL	0.0621	99% KM Chebyshev UCL	0.085

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.484	Anderson-Darling GOF Test
5% A-D Critical Value	0.737	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.208	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.27	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.843	k star (bias corrected MLE)	1.357
Theta hat (MLE)	0.0416	Theta star (bias corrected MLE)	0.0565
nu hat (MLE)	36.85	nu star (bias corrected)	27.13
MLE Mean (bias corrected)	0.0766	MLE Sd (bias corrected)	0.0658

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.421	nu hat (KM)	37.06
Approximate Chi Square Value (37.06, α)	24.13	Adjusted Chi Square Value (37.06, β)	23.77
95% Gamma Approximate KM-UCL (use when n>=50)	0.0362	95% Gamma Adjusted KM-UCL (use when n<50)	0.0368

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.007	Mean	0.0265
Maximum	0.15	Median	0.01
SD	0.035	CV	1.319
k hat (MLE)	1.153	k star (bias corrected MLE)	1.09
Theta hat (MLE)	0.023	Theta star (bias corrected MLE)	0.0243
nu hat (MLE)	101.5	nu star (bias corrected)	95.92
MLE Mean (bias corrected)	0.0265	MLE Sd (bias corrected)	0.0254
		Adjusted Level of Significance (β)	0.0445
Approximate Chi Square Value (95.92, α)	74.33	Adjusted Chi Square Value (95.92, β)	73.69
95% Gamma Approximate UCL (use when n>=50)	0.0342	95% Gamma Adjusted UCL (use when n<50)	0.0345

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.842	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.842	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.23	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.28	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0229	Mean in Log Scale	-4.727
SD in Original Scale	0.0367	SD in Log Scale	1.351
95% t UCL (assumes normality of ROS data)	0.0322	95% Percentile Bootstrap UCL	0.0322
95% BCA Bootstrap UCL	0.0341	95% Bootstrap t UCL	0.0355
95% H-UCL (Log ROS)	0.0391		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.553	95% H-UCL (KM -Log)	0.0314
KM SD (logged)	1.142	95% Critical H Value (KM-Log)	2.53
KM Standard Error of Mean (logged)	0.294		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0334	Mean in Log Scale	-3.765
SD in Original Scale	0.0343	SD in Log Scale	0.861
95% t UCL (Assumes normality)	0.0421	95% H-Stat UCL	0.0449

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.034	95% KM (Percentile Bootstrap) UCL	0.0347

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	44	Number of Distinct Observations	16
Number of Detects	4	Number of Non-Detects	40
Number of Distinct Detects	4	Number of Distinct Non-Detects	12
Minimum Detect	0.066	Minimum Non-Detect	0.018
Maximum Detect	45	Maximum Non-Detect	0.17
Variance Detects	426.5	Percent Non-Detects	90.91%
Mean Detects	14.34	SD Detects	20.65
Median Detects	6.15	CV Detects	1.44
Skewness Detects	1.875	Kurtosis Detects	3.63
Mean of Logged Detects	1.176	SD of Logged Detects	2.764

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.759	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.389	Lilliefors GOF Test
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	1.32	Standard Error of Mean	1.181
SD	6.785	95% KM (BCA) UCL	N/A
95% KM (t) UCL	3.306	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	3.263	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	4.863	95% KM Chebyshev UCL	6.468
97.5% KM Chebyshev UCL	8.696	99% KM Chebyshev UCL	13.07

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.284	Anderson-Darling GOF Test
5% A-D Critical Value	0.688	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.235	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.413	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.436	k star (bias corrected MLE)	0.276
Theta hat (MLE)	32.88	Theta star (bias corrected MLE)	52.01
nu hat (MLE)	3.49	nu star (bias corrected)	2.206
MLE Mean (bias corrected)	14.34	MLE Sd (bias corrected)	27.31

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0379	nu hat (KM)	3.332
Approximate Chi Square Value (3.33, α)	0.477	Adjusted Chi Square Value (3.33, β)	0.445
95% Gamma Approximate KM-UCL (use when n>=50)	9.217	95% Gamma Adjusted KM-UCL (use when n<50)	9.881

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	1.313
Maximum	45	Median	0.01
SD	6.865	CV	5.229
k hat (MLE)	0.173	k star (bias corrected MLE)	0.176
Theta hat (MLE)	7.592	Theta star (bias corrected MLE)	7.447
nu hat (MLE)	15.22	nu star (bias corrected)	15.51
MLE Mean (bias corrected)	1.313	MLE Sd (bias corrected)	3.127
		Adjusted Level of Significance (β)	0.0445
Approximate Chi Square Value (15.51, α)	7.62	Adjusted Chi Square Value (15.51, β)	7.432
95% Gamma Approximate UCL (use when n>=50)	2.673	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.896	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.321	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.304	Mean in Log Scale	-13.2
SD in Original Scale	6.866	SD in Log Scale	6.526
95% t UCL (assumes normality of ROS data)	3.044	95% Percentile Bootstrap UCL	3.348
95% BCA Bootstrap UCL	5.432	95% Bootstrap t UCL	11.47
95% H-UCL (Log ROS)	1.472E+8		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.542	95% H-UCL (KM -Log)	0.257
KM SD (logged)	1.659	95% Critical H Value (KM-Log)	3.195
KM Standard Error of Mean (logged)	0.289		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	1.324	Mean in Log Scale	-3.466
SD in Original Scale	6.862	SD in Log Scale	1.706
95% t UCL (Assumes normality)	3.063	95% H-Stat UCL	0.313

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	3.306	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NAPHTHALENE

General Statistics

Total Number of Observations	44	Number of Distinct Observations	14
Number of Detects	3	Number of Non-Detects	41
Number of Distinct Detects	3	Number of Distinct Non-Detects	12
Minimum Detect	0.004	Minimum Non-Detect	0.004
Maximum Detect	15	Maximum Non-Detect	0.043
Variance Detects	72.24	Percent Non-Detects	93.18%
Mean Detects	5.191	SD Detects	8.499
Median Detects	0.57	CV Detects	1.637
Skewness Detects	1.723	Kurtosis Detects	N/A
Mean of Logged Detects	-1.125	SD of Logged Detects	4.144

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.778	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.373	Lilliefors GOF Test
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.358	Standard Error of Mean	0.413
SD	2.235	95% KM (BCA) UCL	N/A
95% KM (t) UCL	1.051	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	1.036	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	1.595	95% KM Chebyshev UCL	2.156
97.5% KM Chebyshev UCL	2.934	99% KM Chebyshev UCL	4.463

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.255	k star (bias corrected MLE)	N/A
Theta hat (MLE)	20.33	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	1.532	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0256	nu hat (KM)	2.255
		Adjusted Level of Significance (β)	0.0445
Approximate Chi Square Value (2.25, α)	0.191	Adjusted Chi Square Value (2.25, β)	0.178
95% Gamma Approximate KM-UCL (use when n>=50)	4.225	95% Gamma Adjusted KM-UCL (use when n<50)	4.526

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.986	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.221	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.354	Mean in Log Scale	-13.32
SD in Original Scale	2.261	SD in Log Scale	5.473
95% t UCL (assumes normality of ROS data)	0.927	95% Percentile Bootstrap UCL	1.023
95% BCA Bootstrap UCL	1.416	95% Bootstrap t UCL	955.7
95% H-UCL (Log ROS)	10197		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.222	95% H-UCL (KM -Log)	0.0274
KM SD (logged)	1.417	95% Critical H Value (KM-Log)	2.872
KM Standard Error of Mean (logged)	0.262		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.37	Mean in Log Scale	-4.005
SD in Original Scale	2.258	SD in Log Scale	1.367
95% t UCL (Assumes normality)	0.942	95% H-Stat UCL	0.0832

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	1.051	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	35	Number of Distinct Observations	34
		Number of Missing Observations	0
Minimum	1.8	Mean	3077
Maximum	7930	Median	2660
SD	1949	Std. Error of Mean	329.4
Coefficient of Variation	0.633	Skewness	0.894

Normal GOF Test

Shapiro Wilk Test Statistic	0.93	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.161	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	3634	95% Adjusted-CLT UCL (Chen-1995)	3672
		95% Modified-t UCL (Johnson-1978)	3642

Gamma GOF Test

A-D Test Statistic	1.171	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.767	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.177	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.152	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.455	k star (bias corrected MLE)	1.35
Theta hat (MLE)	2114	Theta star (bias corrected MLE)	2280
nu hat (MLE)	101.9	nu star (bias corrected)	94.47
MLE Mean (bias corrected)	3077	MLE Sd (bias corrected)	2649
		Approximate Chi Square Value (0.05)	73.05
Adjusted Level of Significance	0.0425	Adjusted Chi Square Value	72.16

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	3979	95% Adjusted Gamma UCL (use when n<50)	4028

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.616	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.247	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.15	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area3 Surface and Subsurface Soil (0-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	0.588	Mean of logged Data	7.65
Maximum of Logged Data	8.978	SD of logged Data	1.416

Assuming Lognormal Distribution

95% H-UCL	11885	90% Chebyshev (MVUE) UCL	10347
95% Chebyshev (MVUE) UCL	12576	97.5% Chebyshev (MVUE) UCL	15670
99% Chebyshev (MVUE) UCL	21748		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	3619	95% Jackknife UCL	3634
95% Standard Bootstrap UCL	3608	95% Bootstrap-t UCL	3716
95% Hall's Bootstrap UCL	3692	95% Percentile Bootstrap UCL	3629
95% BCA Bootstrap UCL	3731		
90% Chebyshev(Mean, Sd) UCL	4065	95% Chebyshev(Mean, Sd) UCL	4513
97.5% Chebyshev(Mean, Sd) UCL	5134	99% Chebyshev(Mean, Sd) UCL	6354

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	4513

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	35	Number of Distinct Observations	33
Number of Detects	27	Number of Non-Detects	8
Number of Distinct Detects	27	Number of Distinct Non-Detects	6
Minimum Detect	0.0072	Minimum Non-Detect	1.05
Maximum Detect	15.9	Maximum Non-Detect	1.21
Variance Detects	11.82	Percent Non-Detects	22.86%
Mean Detects	3.701	SD Detects	3.438
Median Detects	2.34	CV Detects	0.929
Skewness Detects	2.175	Kurtosis Detects	5.247
Mean of Logged Detects	0.865	SD of Logged Detects	1.334

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.733	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.264	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.878	Standard Error of Mean	0.574
SD	3.33	95% KM (BCA) UCL	4.144
95% KM (t) UCL	3.85	95% KM (Percentile Bootstrap) UCL	3.927
95% KM (z) UCL	3.823	95% KM Bootstrap t UCL	4.149
90% KM Chebyshev UCL	4.602	95% KM Chebyshev UCL	5.382
97.5% KM Chebyshev UCL	6.466	99% KM Chebyshev UCL	8.594

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.427	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.768	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.211	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.172	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.268	k star (bias corrected MLE)	1.152
Theta hat (MLE)	2.919	Theta star (bias corrected MLE)	3.213
nu hat (MLE)	68.47	nu star (bias corrected)	62.19
MLE Mean (bias corrected)	3.701	MLE Sd (bias corrected)	3.449

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.747	nu hat (KM)	52.32
Approximate Chi Square Value (52.32, α)	36.7	Adjusted Chi Square Value (52.32, β)	36.08
95% Gamma Approximate KM-UCL (use when n>=50)	4.103	95% Gamma Adjusted KM-UCL (use when n<50)	4.174

Attachment F
ProUCL Output Area3 Surface and Subsurface Soil (0-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	2.857
Maximum	15.9	Median	2
SD	3.393	CV	1.187
k hat (MLE)	0.45	k star (bias corrected MLE)	0.43
Theta hat (MLE)	6.35	Theta star (bias corrected MLE)	6.638
nu hat (MLE)	31.5	nu star (bias corrected)	30.13
MLE Mean (bias corrected)	2.857	MLE Sd (bias corrected)	4.355
		Adjusted Level of Significance (β)	0.0425
Approximate Chi Square Value (30.13, α)	18.6	Adjusted Chi Square Value (30.13, β)	18.16
95% Gamma Approximate UCL (use when n>=50)	4.63	95% Gamma Adjusted UCL (use when n<50)	4.74

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.663	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.291	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.918	Mean in Log Scale	0.365
SD in Original Scale	3.342	SD in Log Scale	1.498
95% t UCL (assumes normality of ROS data)	3.873	95% Percentile Bootstrap UCL	3.897
95% BCA Bootstrap UCL	4.108	95% Bootstrap t UCL	4.342
95% H-UCL (Log ROS)	9.877		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	2.986	Mean in Log Scale	0.54
SD in Original Scale	3.288	SD in Log Scale	1.315
95% t UCL (Assumes normality)	3.926	95% H-Stat UCL	7.778

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	6.466

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	35	Number of Distinct Observations	35
		Number of Missing Observations	0
Minimum	0.033	Mean	25.32
Maximum	182	Median	13.9
SD	38.69	Std. Error of Mean	6.54
Coefficient of Variation	1.528	Skewness	3.297

Normal GOF Test

Shapiro Wilk Test Statistic	0.536	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.345	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	36.38	95% Adjusted-CLT UCL (Chen-1995)	39.98
		95% Modified-t UCL (Johnson-1978)	36.99

Gamma GOF Test

A-D Test Statistic	1.638	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.784	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.217	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.154	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.833	k star (bias corrected MLE)	0.781
Theta hat (MLE)	30.39	Theta star (bias corrected MLE)	32.43
nu hat (MLE)	58.32	nu star (bias corrected)	54.66
MLE Mean (bias corrected)	25.32	MLE Sd (bias corrected)	28.66
		Approximate Chi Square Value (0.05)	38.67
Adjusted Level of Significance	0.0425	Adjusted Chi Square Value	38.03

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	35.8	95% Adjusted Gamma UCL (use when n<50)	36.4

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.823	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.177	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.15	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Attachment F
ProUCL Output Area3 Surface and Subsurface Soil (0-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/8/2013 3:19:38 PM
From File	SO-Area3-0-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-3.411	Mean of logged Data	2.523
Maximum of Logged Data	5.204	SD of logged Data	1.44

Assuming Lognormal Distribution

95% H-UCL	74.68	90% Chebyshev (MVUE) UCL	64.13
95% Chebyshev (MVUE) UCL	78.1	97.5% Chebyshev (MVUE) UCL	97.5
99% Chebyshev (MVUE) UCL	135.6		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	36.08	95% Jackknife UCL	36.38
95% Standard Bootstrap UCL	35.99	95% Bootstrap-t UCL	55.1
95% Hall's Bootstrap UCL	86.49	95% Percentile Bootstrap UCL	37.09
95% BCA Bootstrap UCL	41.49		
90% Chebyshev(Mean, Sd) UCL	44.94	95% Chebyshev(Mean, Sd) UCL	53.83
97.5% Chebyshev(Mean, Sd) UCL	66.17	99% Chebyshev(Mean, Sd) UCL	90.4

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	53.83

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area3 Surface and Subsurface Soil (0-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:47:21 AM
From File	So-Area3-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	35	Number of Distinct Observations	34
Number of Detects	34	Number of Non-Detects	1
Number of Distinct Detects	33	Number of Distinct Non-Detects	1
Minimum Detect	0.038	Minimum Non-Detect	0.741
Maximum Detect	73.2	Maximum Non-Detect	0.741
Variance Detects	248.3	Percent Non-Detects	2.857%
Mean Detects	14.28	SD Detects	15.76
Median Detects	9.3	CV Detects	1.104
Skewness Detects	2.348	Kurtosis Detects	5.809
Mean of Logged Detects	2.129	SD of Logged Detects	1.282

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.715	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.933	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.262	Lilliefors GOF Test
5% Lilliefors Critical Value	0.152	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	13.87	Standard Error of Mean	2.657
SD	15.48	95% KM (BCA) UCL	18.85
95% KM (t) UCL	18.36	95% KM (Percentile Bootstrap) UCL	18.18
95% KM (z) UCL	18.24	95% KM Bootstrap t UCL	20.73
90% KM Chebyshev UCL	21.84	95% KM Chebyshev UCL	25.45
97.5% KM Chebyshev UCL	30.46	99% KM Chebyshev UCL	40.3

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.768	Anderson-Darling GOF Test
5% A-D Critical Value	0.774	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.134	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.155	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.08	k star (bias corrected MLE)	1.004
Theta hat (MLE)	13.22	Theta star (bias corrected MLE)	14.21
nu hat (MLE)	73.45	nu star (bias corrected)	68.3
MLE Mean (bias corrected)	14.28	MLE Sd (bias corrected)	14.24

Attachment F
ProUCL Output Area3 Surface and Subsurface Soil (0-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:47:21 AM
From File	So-Area3-0-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.802	nu hat (KM)	56.16
Approximate Chi Square Value (56.16, α)	39.93	Adjusted Chi Square Value (56.16, β)	39.29
95% Gamma Approximate KM-UCL (use when n>=50)	19.5	95% Gamma Adjusted KM-UCL (use when n<50)	19.82

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	13.87
Maximum	73.2	Median	9.19
SD	15.71	CV	1.133
k hat (MLE)	0.85	k star (bias corrected MLE)	0.796
Theta hat (MLE)	16.32	Theta star (bias corrected MLE)	17.43
nu hat (MLE)	59.47	nu star (bias corrected)	55.71
MLE Mean (bias corrected)	13.87	MLE Sd (bias corrected)	15.55
		Adjusted Level of Significance (β)	0.0425
Approximate Chi Square Value (55.71, α)	39.55	Adjusted Chi Square Value (55.71, β)	38.91
95% Gamma Approximate UCL (use when n>=50)	19.53	95% Gamma Adjusted UCL (use when n<50)	19.86

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.834	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.163	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.152	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	13.89	Mean in Log Scale	2.057
SD in Original Scale	15.69	SD in Log Scale	1.332
95% t UCL (assumes normality of ROS data)	18.37	95% Percentile Bootstrap UCL	18.46
95% BCA Bootstrap UCL	19.5	95% Bootstrap t UCL	20.6
95% H-UCL (Log ROS)	36.82		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	13.88	Mean in Log Scale	2.04
SD in Original Scale	15.7	SD in Log Scale	1.369
95% t UCL (Assumes normality)	18.37	95% H-Stat UCL	39.16

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	25.45	95% GROS Adjusted Gamma UCL	19.86
95% Adjusted Gamma KM-UCL	19.82		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CYCLOHEXANE, METHYL-

General Statistics

Total Number of Observations	5	Number of Distinct Observations	2
Number of Detects	1	Number of Non-Detects	4
Number of Distinct Detects	1	Number of Distinct Non-Detects	1

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable CYCLOHEXANE, METHYL- was not processed!

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	10
Number of Detects	2	Number of Non-Detects	19
Number of Distinct Detects	2	Number of Distinct Non-Detects	8
Minimum Detect	0.45	Minimum Non-Detect	0.004
Maximum Detect	91	Maximum Non-Detect	0.043
Variance Detects	4100	Percent Non-Detects	90.48%
Mean Detects	45.73	SD Detects	64.03
Median Detects	45.73	CV Detects	1.4
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	1.856	SD of Logged Detects	3.754

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	4.358	Standard Error of Mean	5.979
SD	19.37	95% KM (BCA) UCL	N/A
95% KM (t) UCL	14.67	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	14.19	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	22.3	95% KM Chebyshev UCL	30.42
97.5% KM Chebyshev UCL	41.7	99% KM Chebyshev UCL	63.85

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.343	k star (bias corrected MLE)	N/A
Theta hat (MLE)	133.3	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	1.372	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0506	nu hat (KM)	2.126
		Adjusted Level of Significance (β)	0.0383
Approximate Chi Square Value (2.13, α)	0.169	Adjusted Chi Square Value (2.13, β)	0.147
95% Gamma Approximate KM-UCL (use when n>=50)	54.86	95% Gamma Adjusted KM-UCL (use when n<50)	63.19

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	4.355	Mean in Log Scale	-24.76
SD in Original Scale	19.85	SD in Log Scale	11.65
95% t UCL (assumes normality of ROS data)	11.83	95% Percentile Bootstrap UCL	13.02
95% BCA Bootstrap UCL	21.67	95% Bootstrap t UCL	6.522E+8
95% H-UCL (Log ROS)	N/A		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4.369	Mean in Log Scale	-3.819
SD in Original Scale	19.85	SD in Log Scale	2.255
95% t UCL (Assumes normality)	11.84	95% H-Stat UCL	2.812

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	63.85

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(A)PYRENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	11
Number of Detects	2	Number of Non-Detects	19
Number of Distinct Detects	2	Number of Distinct Non-Detects	9
Minimum Detect	0.073	Minimum Non-Detect	0.004
Maximum Detect	0.081	Maximum Non-Detect	0.2
Variance Detects	3.2000E-5	Percent Non-Detects	90.48%
Mean Detects	0.077	SD Detects	0.00566
Median Detects	0.077	CV Detects	0.0735
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-2.565	SD of Logged Detects	0.0735

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only
Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0113	Standard Error of Mean	0.00694
SD	0.0219	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0233	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0227	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0321	95% KM Chebyshev UCL	0.0415
97.5% KM Chebyshev UCL	0.0546	99% KM Chebyshev UCL	0.0803

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	370.2	k star (bias corrected MLE)	N/A
Theta hat (MLE)	2.0798E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	1481	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.265	nu hat (KM)	11.14
		Adjusted Level of Significance (β)	0.0383
Approximate Chi Square Value (11.14, α)	4.669	Adjusted Chi Square Value (11.14, β)	4.351
95% Gamma Approximate KM-UCL (use when n>=50)	0.027	95% Gamma Adjusted KM-UCL (use when n<50)	0.0289

Attachment F
ProUCL Output Area 3 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0474	Mean in Log Scale	-3.074
SD in Original Scale	0.0116	SD in Log Scale	0.218
95% t UCL (assumes normality of ROS data)	0.0517	95% Percentile Bootstrap UCL	0.0518
95% BCA Bootstrap UCL	0.0524	95% Bootstrap t UCL	0.0546
95% H-UCL (Log ROS)	0.0516		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0263	Mean in Log Scale	-4.054
SD in Original Scale	0.0256	SD in Log Scale	1.043
95% t UCL (Assumes normality)	0.036	95% H-Stat UCL	0.0551

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0233	95% KM (% Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZO(B)FLUORANTHENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	12
Number of Detects	3	Number of Non-Detects	18
Number of Distinct Detects	3	Number of Distinct Non-Detects	9
Minimum Detect	0.007	Minimum Non-Detect	0.004
Maximum Detect	0.099	Maximum Non-Detect	0.2
Variance Detects	0.0027	Percent Non-Detects	85.71%
Mean Detects	0.067	SD Detects	0.052
Median Detects	0.095	CV Detects	0.776
Skewness Detects	-1.721	Kurtosis Detects	N/A
Mean of Logged Detects	-3.209	SD of Logged Detects	1.518

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.783	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.372	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0142	Standard Error of Mean	0.00761
SD	0.0276	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0273	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0267	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.037	95% KM Chebyshev UCL	0.0474
97.5% KM Chebyshev UCL	0.0617	99% KM Chebyshev UCL	0.09

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.125	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0596	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	6.749	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.264	nu hat (KM)	11.09
		Adjusted Level of Significance (β)	0.0383
Approximate Chi Square Value (11.09, α)	4.631	Adjusted Chi Square Value (11.09, β)	4.314
95% Gamma Approximate KM-UCL (use when n>=50)	0.034	95% Gamma Adjusted KM-UCL (use when n<50)	0.0365

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.762	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.38	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.011	Mean in Log Scale	-6.391
SD in Original Scale	0.0287	SD in Log Scale	1.756
95% t UCL (assumes normality of ROS data)	0.0218	95% Percentile Bootstrap UCL	0.0209
95% BCA Bootstrap UCL	0.0249	95% Bootstrap t UCL	0.138
95% H-UCL (Log ROS)	0.0339		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.035	95% H-UCL (KM -Log)	0.0169
KM SD (logged)	0.935	95% Critical H Value (KM-Log)	2.477
KM Standard Error of Mean (logged)	0.298		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0285	Mean in Log Scale	-3.972
SD in Original Scale	0.0297	SD in Log Scale	0.981
95% t UCL (Assumes normality)	0.0396	95% H-Stat UCL	0.0532

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0273	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	21	Number of Distinct Observations	10
Number of Detects	2	Number of Non-Detects	19
Number of Distinct Detects	2	Number of Distinct Non-Detects	8
Minimum Detect	5.3	Minimum Non-Detect	0.018
Maximum Detect	45	Maximum Non-Detect	0.043
Variance Detects	788	Percent Non-Detects	90.48%
Mean Detects	25.15	SD Detects	28.07
Median Detects	25.15	CV Detects	1.116
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	2.737	SD of Logged Detects	1.512

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.412	Standard Error of Mean	2.959
SD	9.589	95% KM (BCA) UCL	N/A
95% KM (t) UCL	7.515	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	7.279	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	11.29	95% KM Chebyshev UCL	15.31
97.5% KM Chebyshev UCL	20.89	99% KM Chebyshev UCL	31.86

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.164	k star (bias corrected MLE)	N/A
Theta hat (MLE)	21.61	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	4.655	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0632	nu hat (KM)	2.656
		Adjusted Level of Significance (β)	0.0383
Approximate Chi Square Value (2.66, α)	0.278	Adjusted Chi Square Value (2.66, β)	0.235
95% Gamma Approximate KM-UCL (use when n>=50)	23.02	95% Gamma Adjusted KM-UCL (use when n<50)	27.22

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.397	Mean in Log Scale	-7.984
SD in Original Scale	9.83	SD in Log Scale	4.695
95% t UCL (assumes normality of ROS data)	6.097	95% Percentile Bootstrap UCL	6.432
95% BCA Bootstrap UCL	9.078	95% Bootstrap t UCL	4682
95% H-UCL (Log ROS)	267405		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2.411	Mean in Log Scale	-3.449
SD in Original Scale	9.826	SD in Log Scale	2.107
95% t UCL (Assumes normality)	6.109	95% H-Stat UCL	2.245

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	20.89

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NAPHTHALENE

General Statistics

Total Number of Observations	21	Number of Distinct Observations	10
Number of Detects	3	Number of Non-Detects	18
Number of Distinct Detects	3	Number of Distinct Non-Detects	8
Minimum Detect	0.004	Minimum Non-Detect	0.004
Maximum Detect	15	Maximum Non-Detect	0.043
Variance Detects	72.24	Percent Non-Detects	85.71%
Mean Detects	5.191	SD Detects	8.499
Median Detects	0.57	CV Detects	1.637
Skewness Detects	1.723	Kurtosis Detects	N/A
Mean of Logged Detects	-1.125	SD of Logged Detects	4.144

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.778	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.373	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.745	Standard Error of Mean	0.853
SD	3.19	95% KM (BCA) UCL	N/A
95% KM (t) UCL	2.215	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	2.147	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	3.303	95% KM Chebyshev UCL	4.461
97.5% KM Chebyshev UCL	6.069	99% KM Chebyshev UCL	9.227

Gamma GOF Tests on Detected Observations Only
Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.255	k star (bias corrected MLE)	N/A
Theta hat (MLE)	20.33	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	1.532	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0546	nu hat (KM)	2.291
		Adjusted Level of Significance (β)	0.0383
Approximate Chi Square Value (2.29, α)	0.198	Adjusted Chi Square Value (2.29, β)	0.169
95% Gamma Approximate KM-UCL (use when n>=50)	8.634	95% Gamma Adjusted KM-UCL (use when n<50)	10.09

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.986	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.742	Mean in Log Scale	-11.63
SD in Original Scale	3.269	SD in Log Scale	5.709
95% t UCL (assumes normality of ROS data)	1.972	95% Percentile Bootstrap UCL	2.143
95% BCA Bootstrap UCL	3.599	95% Bootstrap t UCL	2691
95% H-UCL (Log ROS)	1.175E+8		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.893	95% H-UCL (KM -Log)	0.353
KM SD (logged)	2	95% Critical H Value (KM-Log)	4.142
KM Standard Error of Mean (logged)	0.535		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.756	Mean in Log Scale	-3.861
SD in Original Scale	3.266	SD in Log Scale	1.917
95% t UCL (Assumes normality)	1.985	95% H-Stat UCL	0.735

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	2.215	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM

General Statistics

Total Number of Observations	17	Number of Distinct Observations	17
		Number of Missing Observations	0
Minimum	1.8	Mean	3499
Maximum	7930	Median	3060
SD	2531	Std. Error of Mean	613.9
Coefficient of Variation	0.723	Skewness	0.417

Normal GOF Test

Shapiro Wilk Test Statistic	0.942	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.12	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	4571	95% Adjusted-CLT UCL (Chen-1995)	4575
		95% Modified-t UCL (Johnson-1978)	4581

Gamma GOF Test

A-D Test Statistic	0.813	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.772	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.218	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.216	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.865	k star (bias corrected MLE)	0.751
Theta hat (MLE)	4047	Theta star (bias corrected MLE)	4658
nu hat (MLE)	29.4	nu star (bias corrected)	25.54
MLE Mean (bias corrected)	3499	MLE Sd (bias corrected)	4037
		Approximate Chi Square Value (0.05)	15.03
Adjusted Level of Significance	0.0346	Adjusted Chi Square Value	14.19

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	5947	95% Adjusted Gamma UCL (use when n<50)	6300

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.665	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.892	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.263	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.215	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	0.588	Mean of logged Data	7.481
Maximum of Logged Data	8.978	SD of logged Data	2.002

Assuming Lognormal Distribution

95% H-UCL	118354	90% Chebyshev (MVUE) UCL	27185
95% Chebyshev (MVUE) UCL	34986	97.5% Chebyshev (MVUE) UCL	45814
99% Chebyshev (MVUE) UCL	67084		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	4509	95% Jackknife UCL	4571
95% Standard Bootstrap UCL	4476	95% Bootstrap-t UCL	4636
95% Hall's Bootstrap UCL	4597	95% Percentile Bootstrap UCL	4555
95% BCA Bootstrap UCL	4570		
90% Chebyshev(Mean, Sd) UCL	5341	95% Chebyshev(Mean, Sd) UCL	6175
97.5% Chebyshev(Mean, Sd) UCL	7333	99% Chebyshev(Mean, Sd) UCL	9607

Suggested UCL to Use

95% Student's-t UCL 4571

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC

General Statistics

Total Number of Observations	17	Number of Distinct Observations	16
Number of Detects	13	Number of Non-Detects	4
Number of Distinct Detects	13	Number of Distinct Non-Detects	3
Minimum Detect	0.0072	Minimum Non-Detect	1.09
Maximum Detect	15.9	Maximum Non-Detect	1.19
Variance Detects	17.19	Percent Non-Detects	23.53%
Mean Detects	4.093	SD Detects	4.146
Median Detects	2.85	CV Detects	1.013
Skewness Detects	2.265	Kurtosis Detects	5.597
Mean of Logged Detects	0.752	SD of Logged Detects	1.832

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.729	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.132	Standard Error of Mean	0.982
SD	3.891	95% KM (BCA) UCL	5.105
95% KM (t) UCL	4.846	95% KM (Percentile Bootstrap) UCL	4.959
95% KM (z) UCL	4.747	95% KM Bootstrap t UCL	6.651
90% KM Chebyshev UCL	6.078	95% KM Chebyshev UCL	7.413
97.5% KM Chebyshev UCL	9.265	99% KM Chebyshev UCL	12.9

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.862	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.763	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.274	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.244	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.891	k star (bias corrected MLE)	0.737
Theta hat (MLE)	4.593	Theta star (bias corrected MLE)	5.556
nu hat (MLE)	23.17	nu star (bias corrected)	19.15
MLE Mean (bias corrected)	4.093	MLE Sd (bias corrected)	4.768

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.648	nu hat (KM)	22.03
Approximate Chi Square Value (22.03, α)	12.36	Adjusted Chi Square Value (22.03, β)	11.6
95% Gamma Approximate KM-UCL (use when n>=50)	5.581	95% Gamma Adjusted KM-UCL (use when n<50)	5.945

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0072	Mean	3.132
Maximum	15.9	Median	2.01
SD	4.01	CV	1.28
k hat (MLE)	0.399	k star (bias corrected MLE)	0.368
Theta hat (MLE)	7.85	Theta star (bias corrected MLE)	8.516
nu hat (MLE)	13.57	nu star (bias corrected)	12.5
MLE Mean (bias corrected)	3.132	MLE Sd (bias corrected)	5.165
		Adjusted Level of Significance (β)	0.0346
Approximate Chi Square Value (12.50, α)	5.561	Adjusted Chi Square Value (12.50, β)	5.083
95% Gamma Approximate UCL (use when n>=50)	7.043	95% Gamma Adjusted UCL (use when n<50)	7.706

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.658	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.365	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.158	Mean in Log Scale	0.0617
SD in Original Scale	3.989	SD in Log Scale	2.047
95% t UCL (assumes normality of ROS data)	4.847	95% Percentile Bootstrap UCL	4.833
95% BCA Bootstrap UCL	5.425	95% Bootstrap t UCL	6.488
95% H-UCL (Log ROS)	85.45		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	3.266	Mean in Log Scale	0.446
SD in Original Scale	3.906	SD in Log Scale	1.686
95% t UCL (Assumes normality)	4.92	95% H-Stat UCL	32.26

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	12.9

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM

General Statistics

Total Number of Observations	17	Number of Distinct Observations	17
		Number of Missing Observations	0
Minimum	0.033	Mean	37.12
Maximum	182	Median	18.6
SD	53.06	Std. Error of Mean	12.87
Coefficient of Variation	1.429	Skewness	2.158

Normal GOF Test

Shapiro Wilk Test Statistic	0.659	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.328	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	59.59	95% Adjusted-CLT UCL (Chen-1995)	65.48
		95% Modified-t UCL (Johnson-1978)	60.71

Gamma GOF Test

A-D Test Statistic	0.447	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.791	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.188	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.22	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.583	k star (bias corrected MLE)	0.519
Theta hat (MLE)	63.68	Theta star (bias corrected MLE)	71.49
nu hat (MLE)	19.82	nu star (bias corrected)	17.65
MLE Mean (bias corrected)	37.12	MLE Sd (bias corrected)	51.51
		Approximate Chi Square Value (0.05)	9.142
Adjusted Level of Significance	0.0346	Adjusted Chi Square Value	8.505

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	71.68	95% Adjusted Gamma UCL (use when n<50)	77.05

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.856	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.892	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.2	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.215	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/11/2013 4:48:07 PM
From File	SO-Area3-2-10ft_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-3.411	Mean of logged Data	2.55
Maximum of Logged Data	5.204	SD of logged Data	2.016

Assuming Lognormal Distribution

95% H-UCL	904.2	90% Chebyshev (MVUE) UCL	201.6
95% Chebyshev (MVUE) UCL	259.6	97.5% Chebyshev (MVUE) UCL	340.1
99% Chebyshev (MVUE) UCL	498.2		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	58.29	95% Jackknife UCL	59.59
95% Standard Bootstrap UCL	57.86	95% Bootstrap-t UCL	99.02
95% Hall's Bootstrap UCL	159.1	95% Percentile Bootstrap UCL	60.2
95% BCA Bootstrap UCL	67.4		
90% Chebyshev(Mean, Sd) UCL	75.72	95% Chebyshev(Mean, Sd) UCL	93.21
97.5% Chebyshev(Mean, Sd) UCL	117.5	99% Chebyshev(Mean, Sd) UCL	165.2

Suggested UCL to Use

95% Adjusted Gamma UCL	77.05

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Attachment F
ProUCL Output Area 3 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:50:33 AM
From File	So-Area3-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM

General Statistics

Total Number of Observations	17	Number of Distinct Observations	17
Number of Detects	16	Number of Non-Detects	1
Number of Distinct Detects	16	Number of Distinct Non-Detects	1
Minimum Detect	0.038	Minimum Non-Detect	0.741
Maximum Detect	73.2	Maximum Non-Detect	0.741
Variance Detects	392.1	Percent Non-Detects	5.882%
Mean Detects	18.84	SD Detects	19.8
Median Detects	12.05	CV Detects	1.051
Skewness Detects	1.773	Kurtosis Detects	2.982
Mean of Logged Detects	2.211	SD of Logged Detects	1.748

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.798	Shapiro Wilk GOF Test
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.276	Lilliefors GOF Test
5% Lilliefors Critical Value	0.222	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	17.73	Standard Error of Mean	4.789
SD	19.12	95% KM (BCA) UCL	27.46
95% KM (t) UCL	26.09	95% KM (Percentile Bootstrap) UCL	26.14
95% KM (z) UCL	25.61	95% KM Bootstrap t UCL	30.78
90% KM Chebyshev UCL	32.1	95% KM Chebyshev UCL	38.61
97.5% KM Chebyshev UCL	47.64	99% KM Chebyshev UCL	65.38

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.347	Anderson-Darling GOF Test
5% A-D Critical Value	0.772	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.149	Kolmogrov-Smirnoff GOF
5% K-S Critical Value	0.223	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.817	k star (bias corrected MLE)	0.705
Theta hat (MLE)	23.06	Theta star (bias corrected MLE)	26.7
nu hat (MLE)	26.14	nu star (bias corrected)	22.57
MLE Mean (bias corrected)	18.84	MLE Sd (bias corrected)	22.43

Attachment F
ProUCL Output Area 3 Subsurface Soil (2-10 ft bgs)
Human Health Risk Assessment
CPS/Madison Superfund Site
Old Bridge, New Jersey

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/2/2014 11:50:33 AM
From File	So-Area3-2-10ft-Update.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.86	nu hat (KM)	29.24
Approximate Chi Square Value (29.24, α)	17.9	Adjusted Chi Square Value (29.24, β)	16.97
95% Gamma Approximate KM-UCL (use when n>=50)	28.97	95% Gamma Adjusted KM-UCL (use when n<50)	30.55

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	17.73
Maximum	73.2	Median	11.2
SD	19.71	CV	1.112
k hat (MLE)	0.583	k star (bias corrected MLE)	0.519
Theta hat (MLE)	30.43	Theta star (bias corrected MLE)	34.15
nu hat (MLE)	19.81	nu star (bias corrected)	17.65
MLE Mean (bias corrected)	17.73	MLE Sd (bias corrected)	24.61
		Adjusted Level of Significance (β)	0.0346
Approximate Chi Square Value (17.65, α)	9.138	Adjusted Chi Square Value (17.65, β)	8.502
95% Gamma Approximate UCL (use when n>=50)	34.24	95% Gamma Adjusted UCL (use when n<50)	36.81

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.799	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.224	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.222	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	17.75	Mean in Log Scale	2.031
SD in Original Scale	19.69	SD in Log Scale	1.849
95% t UCL (assumes normality of ROS data)	26.09	95% Percentile Bootstrap UCL	26.24
95% BCA Bootstrap UCL	27.56	95% Bootstrap t UCL	32.75
95% H-UCL (Log ROS)	281.8		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	17.75	Mean in Log Scale	2.023
SD in Original Scale	19.69	SD in Log Scale	1.863
95% t UCL (Assumes normality)	26.09	95% H-Stat UCL	293.7

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	38.61	95% GROS Adjusted Gamma UCL	36.81
95% Adjusted Gamma KM-UCL	30.55		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,1,2,2-TETRACHLOROETHANE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	20
Number of Detects	35	Number of Non-Detects	24
Number of Distinct Detects	18	Number of Distinct Non-Detects	3
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.015	Maximum Non-Detect	0.005
Variance Detects	1.0250E-5	Percent Non-Detects	40.68%
Mean Detects	0.0018	SD Detects	0.0032
Median Detects	5.0000E-4	CV Detects	1.777
Skewness Detects	3.017	Kurtosis Detects	9.396
Mean of Logged Detects	-7.244	SD of Logged Detects	1.299

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.555	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.313	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00116	Standard Error of Mean	3.3853E-4
SD	0.00256	95% KM (BCA) UCL	0.00177
95% KM (t) UCL	0.00172	95% KM (Percentile Bootstrap) UCL	0.00175
95% KM (z) UCL	0.00171	95% KM Bootstrap t UCL	0.00215
90% KM Chebyshev UCL	0.00217	95% KM Chebyshev UCL	0.00263
97.5% KM Chebyshev UCL	0.00327	99% KM Chebyshev UCL	0.00452

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.986	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.797	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.155	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.659	k star (bias corrected MLE)	0.622
Theta hat (MLE)	0.00273	Theta star (bias corrected MLE)	0.0029
nu hat (MLE)	46.13	nu star (bias corrected)	43.51
MLE Mean (bias corrected)	0.0018	MLE Sd (bias corrected)	0.00229

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.204	nu hat (KM)	24.13
Approximate Chi Square Value (24.13, α)	13.95	Adjusted Chi Square Value (24.13, β)	13.75
95% Gamma Approximate KM-UCL (use when n>=50)	0.002	95% Gamma Adjusted KM-UCL (use when n<50)	0.00203

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.00514
Maximum	0.015	Median	0.003
SD	0.00474	CV	0.924
k hat (MLE)	0.676	k star (bias corrected MLE)	0.652
Theta hat (MLE)	0.0076	Theta star (bias corrected MLE)	0.00787
nu hat (MLE)	79.71	nu star (bias corrected)	76.99
MLE Mean (bias corrected)	0.00514	MLE Sd (bias corrected)	0.00636
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (76.99, α)	57.78	Adjusted Chi Square Value (76.99, β)	57.36
95% Gamma Approximate UCL (use when n>=50)	0.00684	95% Gamma Adjusted UCL (use when n<50)	0.00689

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.945	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.125	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00113	Mean in Log Scale	-8.128
SD in Original Scale	0.00259	SD in Log Scale	1.651
95% t UCL (assumes normality of ROS data)	0.0017	95% Percentile Bootstrap UCL	0.00172
95% BCA Bootstrap UCL	0.00188	95% Bootstrap t UCL	0.00229
95% H-UCL (Log ROS)	0.00239		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.867	95% H-UCL (KM -Log)	0.00152
KM SD (logged)	1.321	95% Critical H Value (KM-Log)	2.932
KM Standard Error of Mean (logged)	0.184		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00121	Mean in Log Scale	-7.808
SD in Original Scale	0.00257	SD in Log Scale	1.44
95% t UCL (Assumes normality)	0.00177	95% H-Stat UCL	0.00206

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.00263

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,1,2-TRICHLOROETHANE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	12
Number of Detects	11	Number of Non-Detects	48
Number of Distinct Detects	8	Number of Distinct Non-Detects	6
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.00755	Maximum Non-Detect	0.005
Variance Detects	5.0494E-6	Percent Non-Detects	81.36%
Mean Detects	0.00124	SD Detects	0.00225
Median Detects	4.0000E-4	CV Detects	1.811
Skewness Detects	2.684	Kurtosis Detects	7.348
Mean of Logged Detects	-7.644	SD of Logged Detects	1.292

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.555	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.413	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.3068E-4	Standard Error of Mean	1.4092E-4
SD	0.00103	95% KM (BCA) UCL	5.9338E-4
95% KM (t) UCL	5.6624E-4	95% KM (Percentile Bootstrap) UCL	5.6588E-4
95% KM (z) UCL	5.6248E-4	95% KM Bootstrap t UCL	0.00151
90% KM Chebyshev UCL	7.5345E-4	95% KM Chebyshev UCL	9.4495E-4
97.5% KM Chebyshev UCL	0.00121	99% KM Chebyshev UCL	0.00173

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.19	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.77	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.312	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.267	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.643	k star (bias corrected MLE)	0.528
Theta hat (MLE)	0.00193	Theta star (bias corrected MLE)	0.00235
nu hat (MLE)	14.14	nu star (bias corrected)	11.62
MLE Mean (bias corrected)	0.00124	MLE Sd (bias corrected)	0.00171

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.104	nu hat (KM)	12.24
Approximate Chi Square Value (12.24, α)	5.383	Adjusted Chi Square Value (12.24, β)	5.269
95% Gamma Approximate KM-UCL (use when n>=50)	7.5167E-4	95% Gamma Adjusted KM-UCL (use when n<50)	7.6793E-4

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.00837
Maximum	0.01	Median	0.01
SD	0.00356	CV	0.426
k hat (MLE)	1.432	k star (bias corrected MLE)	1.37
Theta hat (MLE)	0.00584	Theta star (bias corrected MLE)	0.00611
nu hat (MLE)	168.9	nu star (bias corrected)	161.7
MLE Mean (bias corrected)	0.00837	MLE Sd (bias corrected)	0.00715
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (161.68, α)	133.3	Adjusted Chi Square Value (161.68, β)	132.6
95% Gamma Approximate UCL (use when n>=50)	0.0101	95% Gamma Adjusted UCL (use when n<50)	0.0102

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.875	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.205	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.5950E-4	Mean in Log Scale	-10.7
SD in Original Scale	0.00105	SD in Log Scale	2.167
95% t UCL (assumes normality of ROS data)	4.8761E-4	95% Percentile Bootstrap UCL	5.0831E-4
95% BCA Bootstrap UCL	6.4813E-4	95% Bootstrap t UCL	0.00154
95% H-UCL (Log ROS)	7.6313E-4		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-8.841	95% H-UCL (KM -Log)	2.6259E-4
KM SD (logged)	0.843	95% Critical H Value (KM-Log)	2.172
KM Standard Error of Mean (logged)	0.125		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4.1280E-4	Mean in Log Scale	-8.79
SD in Original Scale	0.00107	SD in Log Scale	1.232
95% t UCL (Assumes normality)	6.4532E-4	95% H-Stat UCL	5.0963E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL 5.9338E-4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,1-DICHLOROETHANE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	11
Number of Detects	17	Number of Non-Detects	42
Number of Distinct Detects	7	Number of Distinct Non-Detects	6
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.0176	Maximum Non-Detect	0.005
Variance Detects	2.3127E-5	Percent Non-Detects	71.19%
Mean Detects	0.00194	SD Detects	0.00481
Median Detects	2.0000E-4	CV Detects	2.483
Skewness Detects	2.887	Kurtosis Detects	7.818
Mean of Logged Detects	-7.931	SD of Logged Detects	1.527

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.434	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.46	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	6.3779E-4	Standard Error of Mean	3.5399E-4
SD	0.00264	95% KM (BCA) UCL	0.00133
95% KM (t) UCL	0.00123	95% KM (Percentile Bootstrap) UCL	0.00132
95% KM (z) UCL	0.00122	95% KM Bootstrap t UCL	0.00998
90% KM Chebyshev UCL	0.0017	95% KM Chebyshev UCL	0.00218
97.5% KM Chebyshev UCL	0.00285	99% KM Chebyshev UCL	0.00416

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.116	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.822	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.354	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.224	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.392	k star (bias corrected MLE)	0.362
Theta hat (MLE)	0.00494	Theta star (bias corrected MLE)	0.00535
nu hat (MLE)	13.33	nu star (bias corrected)	12.31
MLE Mean (bias corrected)	0.00194	MLE Sd (bias corrected)	0.00322

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0585	nu hat (KM)	6.9
Approximate Chi Square Value (6.90, α)	2.116	Adjusted Chi Square Value (6.90, β)	2.05
95% Gamma Approximate KM-UCL (use when n>=50)	0.00208	95% Gamma Adjusted KM-UCL (use when n<50)	0.00215

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.00768
Maximum	0.0176	Median	0.01
SD	0.00447	CV	0.582
k hat (MLE)	0.849	k star (bias corrected MLE)	0.817
Theta hat (MLE)	0.00905	Theta star (bias corrected MLE)	0.0094
nu hat (MLE)	100.1	nu star (bias corrected)	96.39
MLE Mean (bias corrected)	0.00768	MLE Sd (bias corrected)	0.00849
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (96.39, α)	74.74	Adjusted Chi Square Value (96.39, β)	74.27
95% Gamma Approximate UCL (use when n>=50)	0.0099	95% Gamma Adjusted UCL (use when n<50)	0.00996

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.742	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.296	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	5.7769E-4	Mean in Log Scale	-10.5
SD in Original Scale	0.00267	SD in Log Scale	2.274
95% t UCL (assumes normality of ROS data)	0.00116	95% Percentile Bootstrap UCL	0.00122
95% BCA Bootstrap UCL	0.00153	95% Bootstrap t UCL	0.00859
95% H-UCL (Log ROS)	0.00134		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	6.8559E-4	Mean in Log Scale	-8.892
SD in Original Scale	0.00267	SD in Log Scale	1.268
95% t UCL (Assumes normality)	0.00127	95% H-Stat UCL	4.9401E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL 0.00218

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,3-TRICHLOROBENZENE

General Statistics

Total Number of Observations	19	Number of Distinct Observations	13
Number of Detects	12	Number of Non-Detects	7
Number of Distinct Detects	11	Number of Distinct Non-Detects	2
Minimum Detect	6.2000E-4	Minimum Non-Detect	4.3000E-4
Maximum Detect	0.406	Maximum Non-Detect	0.00215
Variance Detects	0.0196	Percent Non-Detects	36.84%
Mean Detects	0.0733	SD Detects	0.14
Median Detects	0.0132	CV Detects	1.91
Skewness Detects	2.067	Kurtosis Detects	2.936
Mean of Logged Detects	-4.325	SD of Logged Detects	2.046

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.562	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.393	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0464	Standard Error of Mean	0.0269
SD	0.112	95% KM (BCA) UCL	0.0917
95% KM (t) UCL	0.093	95% KM (Percentile Bootstrap) UCL	0.0904
95% KM (z) UCL	0.0906	95% KM Bootstrap t UCL	0.396
90% KM Chebyshev UCL	0.127	95% KM Chebyshev UCL	0.164
97.5% KM Chebyshev UCL	0.214	99% KM Chebyshev UCL	0.314

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.829	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.807	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.271	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.262	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.387	k star (bias corrected MLE)	0.346
Theta hat (MLE)	0.189	Theta star (bias corrected MLE)	0.212
nu hat (MLE)	9.282	nu star (bias corrected)	8.294
MLE Mean (bias corrected)	0.0733	MLE Sd (bias corrected)	0.125

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.172	nu hat (KM)	6.517
Approximate Chi Square Value (6.52, α)	1.91	Adjusted Chi Square Value (6.52, β)	1.7
95% Gamma Approximate KM-UCL (use when n>=50)	0.158	95% Gamma Adjusted KM-UCL (use when n<50)	0.178

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	6.2000E-4	Mean	0.0499
Maximum	0.406	Median	0.01
SD	0.114	CV	2.278
k hat (MLE)	0.451	k star (bias corrected MLE)	0.415
Theta hat (MLE)	0.111	Theta star (bias corrected MLE)	0.12
nu hat (MLE)	17.14	nu star (bias corrected)	15.77
MLE Mean (bias corrected)	0.0499	MLE Sd (bias corrected)	0.0775
		Adjusted Level of Significance (β)	0.0369
Approximate Chi Square Value (15.77, α)	7.797	Adjusted Chi Square Value (15.77, β)	7.311
95% Gamma Approximate UCL (use when n>=50)	0.101	95% Gamma Adjusted UCL (use when n<50)	0.108

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.147	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0463	Mean in Log Scale	-6.171
SD in Original Scale	0.115	SD in Log Scale	3.045
95% t UCL (assumes normality of ROS data)	0.0922	95% Percentile Bootstrap UCL	0.0912
95% BCA Bootstrap UCL	0.111	95% Bootstrap t UCL	0.417
95% H-UCL (Log ROS)	17.99		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.572	95% H-UCL (KM -Log)	0.598
KM SD (logged)	2.258	95% Critical H Value (KM-Log)	4.713
KM Standard Error of Mean (logged)	0.542		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0464	Mean in Log Scale	-5.673
SD in Original Scale	0.115	SD in Log Scale	2.461
95% t UCL (Assumes normality)	0.0923	95% H-Stat UCL	1.351

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.314

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-TRICHLOROBENZENE

General Statistics

Total Number of Observations	54	Number of Distinct Observations	35
Number of Detects	37	Number of Non-Detects	17
Number of Distinct Detects	33	Number of Distinct Non-Detects	3
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	1.98	Maximum Non-Detect	0.005
Variance Detects	0.133	Percent Non-Detects	31.48%
Mean Detects	0.133	SD Detects	0.365
Median Detects	0.016	CV Detects	2.744
Skewness Detects	4.273	Kurtosis Detects	19.67
Mean of Logged Detects	-4.643	SD of Logged Detects	2.742

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.411	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.358	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0911	Standard Error of Mean	0.042
SD	0.304	95% KM (BCA) UCL	0.185
95% KM (t) UCL	0.161	95% KM (Percentile Bootstrap) UCL	0.165
95% KM (z) UCL	0.16	95% KM Bootstrap t UCL	0.321
90% KM Chebyshev UCL	0.217	95% KM Chebyshev UCL	0.274
97.5% KM Chebyshev UCL	0.353	99% KM Chebyshev UCL	0.509

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.333	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.874	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.161	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.159	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.268	k star (bias corrected MLE)	0.264
Theta hat (MLE)	0.497	Theta star (bias corrected MLE)	0.504
nu hat (MLE)	19.8	nu star (bias corrected)	19.53
MLE Mean (bias corrected)	0.133	MLE Sd (bias corrected)	0.259

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0897	nu hat (KM)	9.692
Approximate Chi Square Value (9.69, α)	3.75	Adjusted Chi Square Value (9.69, β)	3.649
95% Gamma Approximate KM-UCL (use when n>=50)	0.236	95% Gamma Adjusted KM-UCL (use when n<50)	0.242

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0942
Maximum	1.98	Median	0.01
SD	0.306	CV	3.249
k hat (MLE)	0.303	k star (bias corrected MLE)	0.299
Theta hat (MLE)	0.311	Theta star (bias corrected MLE)	0.315
nu hat (MLE)	32.76	nu star (bias corrected)	32.27
MLE Mean (bias corrected)	0.0942	MLE Sd (bias corrected)	0.172
		Adjusted Level of Significance (β)	0.0456
Approximate Chi Square Value (32.27, α)	20.29	Adjusted Chi Square Value (32.27, β)	20.02
95% Gamma Approximate UCL (use when n>=50)	0.15	95% Gamma Adjusted UCL (use when n<50)	0.152

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.95	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.129	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0911	Mean in Log Scale	-6.596
SD in Original Scale	0.307	SD in Log Scale	3.806
95% t UCL (assumes normality of ROS data)	0.161	95% Percentile Bootstrap UCL	0.167
95% BCA Bootstrap UCL	0.199	95% Bootstrap t UCL	0.332
95% H-UCL (Log ROS)	54.05		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.053	95% H-UCL (KM -Log)	2.368
KM SD (logged)	3.063	95% Critical H Value (KM-Log)	5.285
KM Standard Error of Mean (logged)	0.424		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0912	Mean in Log Scale	-6.13
SD in Original Scale	0.307	SD in Log Scale	3.221
95% t UCL (Assumes normality)	0.161	95% H-Stat UCL	4.482

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.509

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2,4-TRIMETHYLBENZENE

General Statistics

Total Number of Observations	20	Number of Distinct Observations	19
Number of Detects	19	Number of Non-Detects	1
Number of Distinct Detects	18	Number of Distinct Non-Detects	1
Minimum Detect	2.8000E-4	Minimum Non-Detect	0.0019
Maximum Detect	0.0727	Maximum Non-Detect	0.0019
Variance Detects	4.5845E-4	Percent Non-Detects	5%
Mean Detects	0.0166	SD Detects	0.0214
Median Detects	0.00591	CV Detects	1.287
Skewness Detects	1.509	Kurtosis Detects	1.405
Mean of Logged Detects	-5.134	SD of Logged Detects	1.71

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.764	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.286	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0158	Standard Error of Mean	0.00473
SD	0.0206	95% KM (BCA) UCL	0.0238
95% KM (t) UCL	0.024	95% KM (Percentile Bootstrap) UCL	0.0242
95% KM (z) UCL	0.0236	95% KM Bootstrap t UCL	0.0274
90% KM Chebyshev UCL	0.03	95% KM Chebyshev UCL	0.0365
97.5% KM Chebyshev UCL	0.0454	99% KM Chebyshev UCL	0.0629

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.418	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.794	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.164	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.208	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.596	k star (bias corrected MLE)	0.537
Theta hat (MLE)	0.0279	Theta star (bias corrected MLE)	0.031
nu hat (MLE)	22.66	nu star (bias corrected)	20.41
MLE Mean (bias corrected)	0.0166	MLE Sd (bias corrected)	0.0227

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.59	nu hat (KM)	23.62
Approximate Chi Square Value (23.62, α)	13.56	Adjusted Chi Square Value (23.62, β)	12.96
95% Gamma Approximate KM-UCL (use when n>=50)	0.0276	95% Gamma Adjusted KM-UCL (use when n<50)	0.0289

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.8000E-4	Mean	0.0163
Maximum	0.0727	Median	0.00596
SD	0.0209	CV	1.282
k hat (MLE)	0.621	k star (bias corrected MLE)	0.561
Theta hat (MLE)	0.0263	Theta star (bias corrected MLE)	0.0291
nu hat (MLE)	24.82	nu star (bias corrected)	22.43
MLE Mean (bias corrected)	0.0163	MLE Sd (bias corrected)	0.0218
		Adjusted Level of Significance (β)	0.038
Approximate Chi Square Value (22.43, α)	12.66	Adjusted Chi Square Value (22.43, β)	12.09
95% Gamma Approximate UCL (use when n>=50)	0.0289	95% Gamma Adjusted UCL (use when n<50)	0.0303

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.946	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.142	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0158	Mean in Log Scale	-5.236
SD in Original Scale	0.0211	SD in Log Scale	1.726
95% t UCL (assumes normality of ROS data)	0.024	95% Percentile Bootstrap UCL	0.0236
95% BCA Bootstrap UCL	0.0252	95% Bootstrap t UCL	0.0274
95% H-UCL (Log ROS)	0.107		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.249	95% H-UCL (KM -Log)	0.0981
KM SD (logged)	1.704	95% Critical H Value (KM-Log)	3.777
KM Standard Error of Mean (logged)	0.393		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0158	Mean in Log Scale	-5.225
SD in Original Scale	0.0211	SD in Log Scale	1.714
95% t UCL (Assumes normality)	0.024	95% H-Stat UCL	0.104

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0365	95% GROS Adjusted Gamma UCL	0.0303
95% Adjusted Gamma KM-UCL	0.0289		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-CIS-DICHLOROETHYLENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	37
Number of Detects	45	Number of Non-Detects	14
Number of Distinct Detects	35	Number of Distinct Non-Detects	3
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	1.116	Maximum Non-Detect	0.005
Variance Detects	0.0283	Percent Non-Detects	23.73%
Mean Detects	0.0386	SD Detects	0.168
Median Detects	0.0026	CV Detects	4.357
Skewness Detects	6.268	Kurtosis Detects	40.62
Mean of Logged Detects	-5.99	SD of Logged Detects	2.245

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.244	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.414	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0295	Standard Error of Mean	0.0193
SD	0.146	95% KM (BCA) UCL	0.0666
95% KM (t) UCL	0.0617	95% KM (Percentile Bootstrap) UCL	0.0662
95% KM (z) UCL	0.0612	95% KM Bootstrap t UCL	0.249
90% KM Chebyshev UCL	0.0873	95% KM Chebyshev UCL	0.113
97.5% KM Chebyshev UCL	0.15	99% KM Chebyshev UCL	0.221

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.849	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.883	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.245	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.145	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.258	k star (bias corrected MLE)	0.256
Theta hat (MLE)	0.15	Theta star (bias corrected MLE)	0.151
nu hat (MLE)	23.24	nu star (bias corrected)	23.02
MLE Mean (bias corrected)	0.0386	MLE Sd (bias corrected)	0.0764

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0407	nu hat (KM)	4.801
Approximate Chi Square Value (4.80, α)	1.061	Adjusted Chi Square Value (4.80, β)	1.019
95% Gamma Approximate KM-UCL (use when n>=50)	0.133	95% Gamma Adjusted KM-UCL (use when n<50)	0.139

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0318
Maximum	1.116	Median	0.006
SD	0.147	CV	4.62
k hat (MLE)	0.31	k star (bias corrected MLE)	0.305
Theta hat (MLE)	0.103	Theta star (bias corrected MLE)	0.104
nu hat (MLE)	36.55	nu star (bias corrected)	36.03
MLE Mean (bias corrected)	0.0318	MLE Sd (bias corrected)	0.0576
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (36.03, α)	23.29	Adjusted Chi Square Value (36.03, β)	23.03
95% Gamma Approximate UCL (use when n>=50)	0.0492	95% Gamma Adjusted UCL (use when n<50)	0.0498

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0757	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0295	Mean in Log Scale	-7.124
SD in Original Scale	0.148	SD in Log Scale	2.912
95% t UCL (assumes normality of ROS data)	0.0616	95% Percentile Bootstrap UCL	0.0667
95% BCA Bootstrap UCL	0.0998	95% Bootstrap t UCL	0.282
95% H-UCL (Log ROS)	0.455		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.723	95% H-UCL (KM -Log)	0.0779
KM SD (logged)	2.356	95% Critical H Value (KM-Log)	4.518
KM Standard Error of Mean (logged)	0.311		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0295	Mean in Log Scale	-6.785
SD in Original Scale	0.148	SD in Log Scale	2.492
95% t UCL (Assumes normality)	0.0616	95% H-Stat UCL	0.122

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.221

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROBENZENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	37
Number of Detects	43	Number of Non-Detects	16
Number of Distinct Detects	36	Number of Distinct Non-Detects	2
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	1.254	Maximum Non-Detect	5.6000E-4
Variance Detects	0.116	Percent Non-Detects	27.12%
Mean Detects	0.157	SD Detects	0.341
Median Detects	0.0069	CV Detects	2.163
Skewness Detects	2.414	Kurtosis Detects	4.706
Mean of Logged Detects	-4.759	SD of Logged Detects	2.937

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.52	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.943	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.375	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.135	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.115	Standard Error of Mean	0.039
SD	0.296	95% KM (BCA) UCL	0.185
95% KM (t) UCL	0.18	95% KM (Percentile Bootstrap) UCL	0.183
95% KM (z) UCL	0.179	95% KM Bootstrap t UCL	0.209
90% KM Chebyshev UCL	0.232	95% KM Chebyshev UCL	0.285
97.5% KM Chebyshev UCL	0.358	99% KM Chebyshev UCL	0.502

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.827	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.888	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.151	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.148	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.245	k star (bias corrected MLE)	0.243
Theta hat (MLE)	0.643	Theta star (bias corrected MLE)	0.647
nu hat (MLE)	21.06	nu star (bias corrected)	20.92
MLE Mean (bias corrected)	0.157	MLE Sd (bias corrected)	0.319

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.151	nu hat (KM)	17.77
Approximate Chi Square Value (17.77, α)	9.224	Adjusted Chi Square Value (17.77, β)	9.07
95% Gamma Approximate KM-UCL (use when n>=50)	0.221	95% Gamma Adjusted KM-UCL (use when n<50)	0.225

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.117
Maximum	1.254	Median	0.01
SD	0.297	CV	2.531
k hat (MLE)	0.272	k star (bias corrected MLE)	0.269
Theta hat (MLE)	0.432	Theta star (bias corrected MLE)	0.436
nu hat (MLE)	32.1	nu star (bias corrected)	31.8
MLE Mean (bias corrected)	0.117	MLE Sd (bias corrected)	0.226
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (31.80, α)	19.91	Adjusted Chi Square Value (31.80, β)	19.68
95% Gamma Approximate UCL (use when n>=50)	0.188	95% Gamma Adjusted UCL (use when n<50)	0.19

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.943	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0965	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.135	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.115	Mean in Log Scale	-6.603
SD in Original Scale	0.298	SD in Log Scale	4.046
95% t UCL (assumes normality of ROS data)	0.18	95% Percentile Bootstrap UCL	0.185
95% BCA Bootstrap UCL	0.201	95% Bootstrap t UCL	0.214
95% H-UCL (Log ROS)	223.1		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.962	95% H-UCL (KM -Log)	4.433
KM SD (logged)	3.167	95% Critical H Value (KM-Log)	5.854
KM Standard Error of Mean (logged)	0.417		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.115	Mean in Log Scale	-6.125
SD in Original Scale	0.298	SD in Log Scale	3.376
95% t UCL (Assumes normality)	0.18	95% H-Stat UCL	10.05

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.502

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROETHANE

General Statistics

Total Number of Observations	61	Number of Distinct Observations	41
Number of Detects	47	Number of Non-Detects	14
Number of Distinct Detects	39	Number of Distinct Non-Detects	3
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.195	Maximum Non-Detect	0.005
Variance Detects	0.00117	Percent Non-Detects	22.95%
Mean Detects	0.0168	SD Detects	0.0342
Median Detects	0.0049	CV Detects	2.032
Skewness Detects	3.759	Kurtosis Detects	16.54
Mean of Logged Detects	-5.583	SD of Logged Detects	1.935

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.532	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.946	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.312	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.129	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.013	Standard Error of Mean	0.00394
SD	0.0305	95% KM (BCA) UCL	0.019
95% KM (t) UCL	0.0196	95% KM (Percentile Bootstrap) UCL	0.0197
95% KM (z) UCL	0.0195	95% KM Bootstrap t UCL	0.025
90% KM Chebyshev UCL	0.0248	95% KM Chebyshev UCL	0.0302
97.5% KM Chebyshev UCL	0.0376	99% KM Chebyshev UCL	0.0522

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.83	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.12	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.138	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.434	k star (bias corrected MLE)	0.42
Theta hat (MLE)	0.0387	Theta star (bias corrected MLE)	0.04
nu hat (MLE)	40.78	nu star (bias corrected)	39.51
MLE Mean (bias corrected)	0.0168	MLE Sd (bias corrected)	0.0259

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.182	nu hat (KM)	22.16
Approximate Chi Square Value (22.16, α)	12.46	Adjusted Chi Square Value (22.16, β)	12.28
95% Gamma Approximate KM-UCL (use when n>=50)	0.0231	95% Gamma Adjusted KM-UCL (use when n<50)	0.0234

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0152
Maximum	0.195	Median	0.0086
SD	0.03	CV	1.971
k hat (MLE)	0.535	k star (bias corrected MLE)	0.52
Theta hat (MLE)	0.0285	Theta star (bias corrected MLE)	0.0293
nu hat (MLE)	65.26	nu star (bias corrected)	63.38
MLE Mean (bias corrected)	0.0152	MLE Sd (bias corrected)	0.0211
		Adjusted Level of Significance (β)	0.0461
Approximate Chi Square Value (63.38, α)	46.07	Adjusted Chi Square Value (63.38, β)	45.71
95% Gamma Approximate UCL (use when n>=50)	0.021	95% Gamma Adjusted UCL (use when n<50)	0.0211

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.97	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.946	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0808	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.129	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.013	Mean in Log Scale	-6.531
SD in Original Scale	0.0307	SD in Log Scale	2.493
95% t UCL (assumes normality of ROS data)	0.0195	95% Percentile Bootstrap UCL	0.0202
95% BCA Bootstrap UCL	0.0224	95% Bootstrap t UCL	0.0255
95% H-UCL (Log ROS)	0.0992		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.379	95% H-UCL (KM -Log)	0.0548
KM SD (logged)	2.24	95% Critical H Value (KM-Log)	3.339
KM Standard Error of Mean (logged)	0.291		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.013	Mean in Log Scale	-6.426
SD in Original Scale	0.0307	SD in Log Scale	2.366
95% t UCL (Assumes normality)	0.0196	95% H-Stat UCL	0.0754

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0302	95% GROS Approximate Gamma UCL	0.021
95% Approximate Gamma KM-UCL	0.0231		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROETHYLENE

General Statistics

Total Number of Observations	13	Number of Distinct Observations	11
		Number of Missing Observations	0
Minimum	1.0000E-4	Mean	0.00997
Maximum	0.079	Median	8.0000E-4
SD	0.0222	Std. Error of Mean	0.00616
Coefficient of Variation	2.23	Skewness	2.94

Normal GOF Test

Shapiro Wilk Test Statistic	0.517	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.347	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.246	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.021	95% Adjusted-CLT UCL (Chen-1995)	0.0255
		95% Modified-t UCL (Johnson-1978)	0.0218

Gamma GOF Test

A-D Test Statistic	1.136	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.821	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.291	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.255	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.342	k star (bias corrected MLE)	0.314
Theta hat (MLE)	0.0292	Theta star (bias corrected MLE)	0.0317
nu hat (MLE)	8.889	nu star (bias corrected)	8.171
MLE Mean (bias corrected)	0.00997	MLE Sd (bias corrected)	0.0178
		Approximate Chi Square Value (0.05)	2.835
Adjusted Level of Significance	0.0301	Adjusted Chi Square Value	2.406

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.0287	95% Adjusted Gamma UCL (use when n<50)	0.0339

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.919	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.866	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.246	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-9.21	Mean of logged Data	-6.583
Maximum of Logged Data	-2.538	SD of logged Data	2.048

Assuming Lognormal Distribution

95% H-UCL	0.206	90% Chebyshev (MVUE) UCL	0.0225
95% Chebyshev (MVUE) UCL	0.0292	97.5% Chebyshev (MVUE) UCL	0.0384
99% Chebyshev (MVUE) UCL	0.0566		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.0201	95% Jackknife UCL	0.021
95% Standard Bootstrap UCL	0.0195	95% Bootstrap-t UCL	0.0674
95% Hall's Bootstrap UCL	0.0639	95% Percentile Bootstrap UCL	0.0216
95% BCA Bootstrap UCL	0.0276		
90% Chebyshev(Mean, Sd) UCL	0.0285	95% Chebyshev(Mean, Sd) UCL	0.0368
97.5% Chebyshev(Mean, Sd) UCL	0.0485	99% Chebyshev(Mean, Sd) UCL	0.0713

Suggested UCL to Use

99% Chebyshev (Mean, Sd) UCL	0.0713

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-TRANS-DICHLOROETHYLENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	24
Number of Detects	27	Number of Non-Detects	32
Number of Distinct Detects	22	Number of Distinct Non-Detects	4
Minimum Detect	2.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.27	Maximum Non-Detect	0.005
Variance Detects	0.00266	Percent Non-Detects	54.24%
Mean Detects	0.0137	SD Detects	0.0515
Median Detects	0.0016	CV Detects	3.773
Skewness Detects	5.116	Kurtosis Detects	26.41
Mean of Logged Detects	-6.29	SD of Logged Detects	1.719

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.264	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.416	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00633	Standard Error of Mean	0.00463
SD	0.0349	95% KM (BCA) UCL	0.0157
95% KM (t) UCL	0.0141	95% KM (Percentile Bootstrap) UCL	0.0155
95% KM (z) UCL	0.0139	95% KM Bootstrap t UCL	0.0721
90% KM Chebyshev UCL	0.0202	95% KM Chebyshev UCL	0.0265
97.5% KM Chebyshev UCL	0.0352	99% KM Chebyshev UCL	0.0524

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.8	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.844	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.225	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.182	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.339	k star (bias corrected MLE)	0.326
Theta hat (MLE)	0.0403	Theta star (bias corrected MLE)	0.0419
nu hat (MLE)	18.29	nu star (bias corrected)	17.59
MLE Mean (bias corrected)	0.0137	MLE Sd (bias corrected)	0.0239

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0329	nu hat (KM)	3.883
Approximate Chi Square Value (3.88, α)	0.676	Adjusted Chi Square Value (3.88, β)	0.645
95% Gamma Approximate KM-UCL (use when n>=50)	0.0363	95% Gamma Adjusted KM-UCL (use when n<50)	0.0381

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.0000E-4	Mean	0.0117
Maximum	0.27	Median	0.01
SD	0.0346	CV	2.96
k hat (MLE)	0.658	k star (bias corrected MLE)	0.636
Theta hat (MLE)	0.0177	Theta star (bias corrected MLE)	0.0183
nu hat (MLE)	77.7	nu star (bias corrected)	75.08
MLE Mean (bias corrected)	0.0117	MLE Sd (bias corrected)	0.0146
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (75.08, α)	56.12	Adjusted Chi Square Value (75.08, β)	55.71
95% Gamma Approximate UCL (use when n>=50)	0.0156	95% Gamma Adjusted UCL (use when n<50)	0.0157

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.931	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00628	Mean in Log Scale	-8.653
SD in Original Scale	0.0352	SD in Log Scale	2.743
95% t UCL (assumes normality of ROS data)	0.0139	95% Percentile Bootstrap UCL	0.0153
95% BCA Bootstrap UCL	0.0213	95% Bootstrap t UCL	0.0716
95% H-UCL (Log ROS)	0.0496		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.803	95% H-UCL (KM -Log)	0.00516
KM SD (logged)	1.828	95% Critical H Value (KM-Log)	3.607
KM Standard Error of Mean (logged)	0.246		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00637	Mean in Log Scale	-7.904
SD in Original Scale	0.0352	SD in Log Scale	2.046
95% t UCL (Assumes normality)	0.014	95% H-Stat UCL	0.00861

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0265

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,3,5-TRIMETHYLBENZENE

General Statistics

Total Number of Observations	20	Number of Distinct Observations	17
Number of Detects	15	Number of Non-Detects	5
Number of Distinct Detects	14	Number of Distinct Non-Detects	3
Minimum Detect	2.6000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.0165	Maximum Non-Detect	0.00245
Variance Detects	2.4155E-5	Percent Non-Detects	25%
Mean Detects	0.00492	SD Detects	0.00491
Median Detects	0.00214	CV Detects	1
Skewness Detects	1.148	Kurtosis Detects	0.432
Mean of Logged Detects	-5.857	SD of Logged Detects	1.155

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.817	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.252	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.229	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00376	Standard Error of Mean	0.00106
SD	0.00457	95% KM (BCA) UCL	0.00563
95% KM (t) UCL	0.0056	95% KM (Percentile Bootstrap) UCL	0.00557
95% KM (z) UCL	0.00551	95% KM Bootstrap t UCL	0.00614
90% KM Chebyshev UCL	0.00694	95% KM Chebyshev UCL	0.00838
97.5% KM Chebyshev UCL	0.0104	99% KM Chebyshev UCL	0.0143

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.711	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.762	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.216	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.228	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.058	k star (bias corrected MLE)	0.891
Theta hat (MLE)	0.00465	Theta star (bias corrected MLE)	0.00552
nu hat (MLE)	31.74	nu star (bias corrected)	26.73
MLE Mean (bias corrected)	0.00492	MLE Sd (bias corrected)	0.00521

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.677	nu hat (KM)	27.09
Approximate Chi Square Value (27.09, α)	16.22	Adjusted Chi Square Value (27.09, β)	15.56
95% Gamma Approximate KM-UCL (use when n>=50)	0.00629	95% Gamma Adjusted KM-UCL (use when n<50)	0.00656

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.6000E-4	Mean	0.00619
Maximum	0.0165	Median	0.00632
SD	0.00479	CV	0.774
k hat (MLE)	1.229	k star (bias corrected MLE)	1.078
Theta hat (MLE)	0.00503	Theta star (bias corrected MLE)	0.00574
nu hat (MLE)	49.18	nu star (bias corrected)	43.13
MLE Mean (bias corrected)	0.00619	MLE Sd (bias corrected)	0.00596
		Adjusted Level of Significance (β)	0.038
Approximate Chi Square Value (43.13, α)	29.07	Adjusted Chi Square Value (43.13, β)	28.16
95% Gamma Approximate UCL (use when n>=50)	0.00918	95% Gamma Adjusted UCL (use when n<50)	0.00948

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.921	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.178	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.229	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00378	Mean in Log Scale	-6.414
SD in Original Scale	0.00468	SD in Log Scale	1.436
95% t UCL (assumes normality of ROS data)	0.00559	95% Percentile Bootstrap UCL	0.00551
95% BCA Bootstrap UCL	0.00574	95% Bootstrap t UCL	0.00611
95% H-UCL (Log ROS)	0.0137		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.536	95% H-UCL (KM -Log)	0.0185
KM SD (logged)	1.581	95% Critical H Value (KM-Log)	3.565
KM Standard Error of Mean (logged)	0.378		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00379	Mean in Log Scale	-6.471
SD in Original Scale	0.00468	SD in Log Scale	1.562
95% t UCL (Assumes normality)	0.00559	95% H-Stat UCL	0.0186

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.00838	95% GROS Adjusted Gamma UCL	0.00948
95% Adjusted Gamma KM-UCL	0.00656		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,3-DICHLOROBENZENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	33
Number of Detects	37	Number of Non-Detects	22
Number of Distinct Detects	33	Number of Distinct Non-Detects	2
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.237	Maximum Non-Detect	6.0000E-4
Variance Detects	0.00289	Percent Non-Detects	37.29%
Mean Detects	0.0261	SD Detects	0.0537
Median Detects	0.00678	CV Detects	2.061
Skewness Detects	3.411	Kurtosis Detects	11.7
Mean of Logged Detects	-5.329	SD of Logged Detects	2.137

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.502	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.314	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0164	Standard Error of Mean	0.00578
SD	0.0438	95% KM (BCA) UCL	0.0272
95% KM (t) UCL	0.0261	95% KM (Percentile Bootstrap) UCL	0.0268
95% KM (z) UCL	0.0259	95% KM Bootstrap t UCL	0.0418
90% KM Chebyshev UCL	0.0337	95% KM Chebyshev UCL	0.0416
97.5% KM Chebyshev UCL	0.0525	99% KM Chebyshev UCL	0.0739

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.86	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.836	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.126	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.155	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.392	k star (bias corrected MLE)	0.379
Theta hat (MLE)	0.0665	Theta star (bias corrected MLE)	0.0689
nu hat (MLE)	29.04	nu star (bias corrected)	28.02
MLE Mean (bias corrected)	0.0261	MLE Sd (bias corrected)	0.0424

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.14	nu hat (KM)	16.51
Approximate Chi Square Value (16.51, α)	8.326	Adjusted Chi Square Value (16.51, β)	8.179
95% Gamma Approximate KM-UCL (use when n>=50)	0.0325	95% Gamma Adjusted KM-UCL (use when n<50)	0.0331

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0201
Maximum	0.237	Median	0.01
SD	0.0431	CV	2.144
k hat (MLE)	0.545	k star (bias corrected MLE)	0.528
Theta hat (MLE)	0.0369	Theta star (bias corrected MLE)	0.038
nu hat (MLE)	64.27	nu star (bias corrected)	62.33
MLE Mean (bias corrected)	0.0201	MLE Sd (bias corrected)	0.0276
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (62.33, α)	45.17	Adjusted Chi Square Value (62.33, β)	44.81
95% Gamma Approximate UCL (use when n>=50)	0.0277	95% Gamma Adjusted UCL (use when n<50)	0.0279

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.955	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.115	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0164	Mean in Log Scale	-7.259
SD in Original Scale	0.0442	SD in Log Scale	3.179
95% t UCL (assumes normality of ROS data)	0.026	95% Percentile Bootstrap UCL	0.0273
95% BCA Bootstrap UCL	0.0294	95% Bootstrap t UCL	0.0409
95% H-UCL (Log ROS)	1.279		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.774	95% H-UCL (KM -Log)	0.133
KM SD (logged)	2.51	95% Critical H Value (KM-Log)	4.862
KM Standard Error of Mean (logged)	0.331		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0164	Mean in Log Scale	-7.004
SD in Original Scale	0.0442	SD in Log Scale	2.773
95% t UCL (Assumes normality)	0.026	95% H-Stat UCL	0.291

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	0.0272	95% GROS Approximate Gamma UCL	0.0277
95% Approximate Gamma KM-UCL	0.0325		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,4-DICHLOROBENZENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	40
Number of Detects	44	Number of Non-Detects	15
Number of Distinct Detects	39	Number of Distinct Non-Detects	2
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.866	Maximum Non-Detect	4.8000E-4
Variance Detects	0.0333	Percent Non-Detects	25.42%
Mean Detects	0.0738	SD Detects	0.183
Median Detects	0.0069	CV Detects	2.472
Skewness Detects	3.794	Kurtosis Detects	14.46
Mean of Logged Detects	-4.898	SD of Logged Detects	2.543

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.437	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.944	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.134	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0551	Standard Error of Mean	0.021
SD	0.159	95% KM (BCA) UCL	0.0993
95% KM (t) UCL	0.0901	95% KM (Percentile Bootstrap) UCL	0.0939
95% KM (z) UCL	0.0896	95% KM Bootstrap t UCL	0.156
90% KM Chebyshev UCL	0.118	95% KM Chebyshev UCL	0.146
97.5% KM Chebyshev UCL	0.186	99% KM Chebyshev UCL	0.264

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.3	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.861	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.157	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.145	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.301	k star (bias corrected MLE)	0.295
Theta hat (MLE)	0.246	Theta star (bias corrected MLE)	0.25
nu hat (MLE)	26.46	nu star (bias corrected)	25.99
MLE Mean (bias corrected)	0.0738	MLE Sd (bias corrected)	0.136

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.12	nu hat (KM)	14.15
Approximate Chi Square Value (14.15, α)	6.677	Adjusted Chi Square Value (14.15, β)	6.548
95% Gamma Approximate KM-UCL (use when n>=50)	0.117	95% Gamma Adjusted KM-UCL (use when n<50)	0.119

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0576
Maximum	0.866	Median	0.01
SD	0.16	CV	2.771
k hat (MLE)	0.343	k star (bias corrected MLE)	0.336
Theta hat (MLE)	0.168	Theta star (bias corrected MLE)	0.171
nu hat (MLE)	40.43	nu star (bias corrected)	39.7
MLE Mean (bias corrected)	0.0576	MLE Sd (bias corrected)	0.0993
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (39.70, α)	26.27	Adjusted Chi Square Value (39.70, β)	25.99
95% Gamma Approximate UCL (use when n>=50)	0.0871	95% Gamma Adjusted UCL (use when n<50)	0.088

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.952	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.944	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0866	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.134	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0551	Mean in Log Scale	-6.375
SD in Original Scale	0.16	SD in Log Scale	3.44
95% t UCL (assumes normality of ROS data)	0.09	95% Percentile Bootstrap UCL	0.0931
95% BCA Bootstrap UCL	0.109	95% Bootstrap t UCL	0.15
95% H-UCL (Log ROS)	10.75		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.991	95% H-UCL (KM -Log)	1.172
KM SD (logged)	2.867	95% Critical H Value (KM-Log)	5.421
KM Standard Error of Mean (logged)	0.378		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0551	Mean in Log Scale	-6.144
SD in Original Scale	0.16	SD in Log Scale	3.077
95% t UCL (Assumes normality)	0.09	95% H-Stat UCL	2.456

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.264

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1-CHLOROBUTANE

General Statistics

Total Number of Observations	19	Number of Distinct Observations	12
Number of Detects	11	Number of Non-Detects	8
Number of Distinct Detects	10	Number of Distinct Non-Detects	2
Minimum Detect	3.0000E-4	Minimum Non-Detect	5.8000E-4
Maximum Detect	0.445	Maximum Non-Detect	0.00288
Variance Detects	0.0181	Percent Non-Detects	42.11%
Mean Detects	0.0735	SD Detects	0.135
Median Detects	0.0175	CV Detects	1.833
Skewness Detects	2.579	Kurtosis Detects	6.652
Mean of Logged Detects	-3.829	SD of Logged Detects	1.828

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.556	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.408	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0427	Standard Error of Mean	0.0251
SD	0.104	95% KM (BCA) UCL	0.0893
95% KM (t) UCL	0.0861	95% KM (Percentile Bootstrap) UCL	0.0873
95% KM (z) UCL	0.0839	95% KM Bootstrap t UCL	0.361
90% KM Chebyshev UCL	0.118	95% KM Chebyshev UCL	0.152
97.5% KM Chebyshev UCL	0.199	99% KM Chebyshev UCL	0.292

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.113	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.78	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.275	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.269	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.519	k star (bias corrected MLE)	0.438
Theta hat (MLE)	0.142	Theta star (bias corrected MLE)	0.168
nu hat (MLE)	11.41	nu star (bias corrected)	9.634
MLE Mean (bias corrected)	0.0735	MLE Sd (bias corrected)	0.111

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.168	nu hat (KM)	6.373
Approximate Chi Square Value (6.37, α)	1.833	Adjusted Chi Square Value (6.37, β)	1.629
95% Gamma Approximate KM-UCL (use when n>=50)	0.148	95% Gamma Adjusted KM-UCL (use when n<50)	0.167

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	3.0000E-4	Mean	0.0467
Maximum	0.445	Median	0.014
SD	0.105	CV	2.255
k hat (MLE)	0.57	k star (bias corrected MLE)	0.515
Theta hat (MLE)	0.082	Theta star (bias corrected MLE)	0.0907
nu hat (MLE)	21.66	nu star (bias corrected)	19.57
MLE Mean (bias corrected)	0.0467	MLE Sd (bias corrected)	0.0651
		Adjusted Level of Significance (β)	0.0369
Approximate Chi Square Value (19.57, α)	10.54	Adjusted Chi Square Value (19.57, β)	9.96
95% Gamma Approximate UCL (use when n>=50)	0.0868	95% Gamma Adjusted UCL (use when n<50)	0.0919

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.837	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.314	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0429	Mean in Log Scale	-5.342
SD in Original Scale	0.107	SD in Log Scale	2.378
95% t UCL (assumes normality of ROS data)	0.0854	95% Percentile Bootstrap UCL	0.0866
95% BCA Bootstrap UCL	0.12	95% Bootstrap t UCL	0.356
95% H-UCL (Log ROS)	1.284		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0428	Mean in Log Scale	-5.478
SD in Original Scale	0.107	SD in Log Scale	2.453
95% t UCL (Assumes normality)	0.0853	95% H-Stat UCL	1.586

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL 0.292

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-CHLOROTOLUENE

General Statistics

Total Number of Observations	18	Number of Distinct Observations	16
Number of Detects	15	Number of Non-Detects	3
Number of Distinct Detects	14	Number of Distinct Non-Detects	2
Minimum Detect	4.9000E-4	Minimum Non-Detect	6.1000E-4
Maximum Detect	0.396	Maximum Non-Detect	0.00305
Variance Detects	0.0106	Percent Non-Detects	16.67%
Mean Detects	0.0789	SD Detects	0.103
Median Detects	0.0542	CV Detects	1.304
Skewness Detects	2.272	Kurtosis Detects	6.354
Mean of Logged Detects	-3.773	SD of Logged Detects	2.112

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.734	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.223	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.229	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0658	Standard Error of Mean	0.0232
SD	0.0952	95% KM (BCA) UCL	0.107
95% KM (t) UCL	0.106	95% KM (Percentile Bootstrap) UCL	0.104
95% KM (z) UCL	0.104	95% KM Bootstrap t UCL	0.133
90% KM Chebyshev UCL	0.136	95% KM Chebyshev UCL	0.167
97.5% KM Chebyshev UCL	0.211	99% KM Chebyshev UCL	0.297

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.381	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.792	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.151	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.234	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.513	k star (bias corrected MLE)	0.455
Theta hat (MLE)	0.154	Theta star (bias corrected MLE)	0.173
nu hat (MLE)	15.4	nu star (bias corrected)	13.65
MLE Mean (bias corrected)	0.0789	MLE Sd (bias corrected)	0.117

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.478	nu hat (KM)	17.21
Approximate Chi Square Value (17.21, α)	8.822	Adjusted Chi Square Value (17.21, β)	8.249
95% Gamma Approximate KM-UCL (use when n>=50)	0.128	95% Gamma Adjusted KM-UCL (use when n<50)	0.137

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	4.9000E-4	Mean	0.0674
Maximum	0.396	Median	0.0285
SD	0.097	CV	1.439
k hat (MLE)	0.52	k star (bias corrected MLE)	0.47
Theta hat (MLE)	0.13	Theta star (bias corrected MLE)	0.143
nu hat (MLE)	18.72	nu star (bias corrected)	16.94
MLE Mean (bias corrected)	0.0674	MLE Sd (bias corrected)	0.0982
		Adjusted Level of Significance (β)	0.0357
Approximate Chi Square Value (16.94, α)	8.626	Adjusted Chi Square Value (16.94, β)	8.061
95% Gamma Approximate UCL (use when n>=50)	0.132	95% Gamma Adjusted UCL (use when n<50)	0.142

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.9	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.881	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.229	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0659	Mean in Log Scale	-4.291
SD in Original Scale	0.0979	SD in Log Scale	2.267
95% t UCL (assumes normality of ROS data)	0.106	95% Percentile Bootstrap UCL	0.105
95% BCA Bootstrap UCL	0.123	95% Bootstrap t UCL	0.135
95% H-UCL (Log ROS)	2.507		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.362	95% H-UCL (KM -Log)	2.585
KM SD (logged)	2.29	95% Critical H Value (KM-Log)	4.844
KM Standard Error of Mean (logged)	0.562		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0659	Mean in Log Scale	-4.314
SD in Original Scale	0.0979	SD in Log Scale	2.308
95% t UCL (Assumes normality)	0.106	95% H-Stat UCL	2.945

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.106	95% KM (Percentile Bootstrap) UCL	0.104

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BENZENE

General Statistics

Total Number of Observations	62	Number of Distinct Observations	41
Number of Detects	49	Number of Non-Detects	13
Number of Distinct Detects	40	Number of Distinct Non-Detects	2
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	2.06	Maximum Non-Detect	2.8000E-4
Variance Detects	0.152	Percent Non-Detects	20.97%
Mean Detects	0.11	SD Detects	0.39
Median Detects	0.0053	CV Detects	3.526
Skewness Detects	4.514	Kurtosis Detects	20.02
Mean of Logged Detects	-5.139	SD of Logged Detects	2.475

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.309	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.418	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.127	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0873	Standard Error of Mean	0.0444
SD	0.346	95% KM (BCA) UCL	0.171
95% KM (t) UCL	0.161	95% KM (Percentile Bootstrap) UCL	0.168
95% KM (z) UCL	0.16	95% KM Bootstrap t UCL	0.39
90% KM Chebyshev UCL	0.22	95% KM Chebyshev UCL	0.281
97.5% KM Chebyshev UCL	0.364	99% KM Chebyshev UCL	0.529

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.842	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.891	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.196	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.139	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.243	k star (bias corrected MLE)	0.242
Theta hat (MLE)	0.455	Theta star (bias corrected MLE)	0.457
nu hat (MLE)	23.82	nu star (bias corrected)	23.69
MLE Mean (bias corrected)	0.11	MLE Sd (bias corrected)	0.225

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0638	nu hat (KM)	7.914
Approximate Chi Square Value (7.91, α)	2.685	Adjusted Chi Square Value (7.91, β)	2.613
95% Gamma Approximate KM-UCL (use when n>=50)	0.257	95% Gamma Adjusted KM-UCL (use when n<50)	0.264

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0894
Maximum	2.06	Median	0.01
SD	0.348	CV	3.892
k hat (MLE)	0.269	k star (bias corrected MLE)	0.266
Theta hat (MLE)	0.333	Theta star (bias corrected MLE)	0.336
nu hat (MLE)	33.32	nu star (bias corrected)	33.04
MLE Mean (bias corrected)	0.0894	MLE Sd (bias corrected)	0.173
		Adjusted Level of Significance (β)	0.0461
Approximate Chi Square Value (33.04, α)	20.9	Adjusted Chi Square Value (33.04, β)	20.67
95% Gamma Approximate UCL (use when n>=50)	0.141	95% Gamma Adjusted UCL (use when n<50)	0.143

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.953	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.127	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0873	Mean in Log Scale	-6.333
SD in Original Scale	0.348	SD in Log Scale	3.258
95% t UCL (assumes normality of ROS data)	0.161	95% Percentile Bootstrap UCL	0.163
95% BCA Bootstrap UCL	0.215	95% Bootstrap t UCL	0.396
95% H-UCL (Log ROS)	2.269		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.991	95% H-UCL (KM -Log)	0.38
KM SD (logged)	2.735	95% Critical H Value (KM-Log)	3.666
KM Standard Error of Mean (logged)	0.351		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0873	Mean in Log Scale	-6.122
SD in Original Scale	0.348	SD in Log Scale	2.921
95% t UCL (Assumes normality)	0.161	95% H-Stat UCL	0.683

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.364

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHLOROBENZENE

General Statistics

Total Number of Observations	62	Number of Distinct Observations	43
Number of Detects	49	Number of Non-Detects	13
Number of Distinct Detects	42	Number of Distinct Non-Detects	2
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	8.1	Maximum Non-Detect	7.1000E-4
Variance Detects	2.104	Percent Non-Detects	20.97%
Mean Detects	0.586	SD Detects	1.451
Median Detects	0.029	CV Detects	2.477
Skewness Detects	3.805	Kurtosis Detects	16.22
Mean of Logged Detects	-3.687	SD of Logged Detects	3.24

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.473	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.127	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.463	Standard Error of Mean	0.167
SD	1.298	95% KM (BCA) UCL	0.799
95% KM (t) UCL	0.741	95% KM (Percentile Bootstrap) UCL	0.757
95% KM (z) UCL	0.737	95% KM Bootstrap t UCL	1.027
90% KM Chebyshev UCL	0.963	95% KM Chebyshev UCL	1.189
97.5% KM Chebyshev UCL	1.503	99% KM Chebyshev UCL	2.121

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.412	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.898	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.153	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.14	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.229	k star (bias corrected MLE)	0.228
Theta hat (MLE)	2.562	Theta star (bias corrected MLE)	2.567
nu hat (MLE)	22.4	nu star (bias corrected)	22.36
MLE Mean (bias corrected)	0.586	MLE Sd (bias corrected)	1.226

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.127	nu hat (KM)	15.76
Approximate Chi Square Value (15.76, α)	7.793	Adjusted Chi Square Value (15.76, β)	7.66
95% Gamma Approximate KM-UCL (use when n>=50)	0.936	95% Gamma Adjusted KM-UCL (use when n<50)	0.952

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.465
Maximum	8.1	Median	0.01
SD	1.308	CV	2.814
k hat (MLE)	0.231	k star (bias corrected MLE)	0.231
Theta hat (MLE)	2.013	Theta star (bias corrected MLE)	2.017
nu hat (MLE)	28.65	nu star (bias corrected)	28.59
MLE Mean (bias corrected)	0.465	MLE Sd (bias corrected)	0.968
		Adjusted Level of Significance (β)	0.0461
Approximate Chi Square Value (28.59, α)	17.39	Adjusted Chi Square Value (28.59, β)	17.18
95% Gamma Approximate UCL (use when n>=50)	0.765	95% Gamma Adjusted UCL (use when n<50)	0.774

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.945	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.947	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0931	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.127	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.463	Mean in Log Scale	-5.219
SD in Original Scale	1.309	SD in Log Scale	4.221
95% t UCL (assumes normality of ROS data)	0.741	95% Percentile Bootstrap UCL	0.777
95% BCA Bootstrap UCL	0.855	95% Bootstrap t UCL	0.955
95% H-UCL (Log ROS)	919.3		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.84	95% H-UCL (KM -Log)	56.13
KM SD (logged)	3.626	95% Critical H Value (KM-Log)	4.945
KM Standard Error of Mean (logged)	0.465		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.463	Mean in Log Scale	-4.959
SD in Original Scale	1.309	SD in Log Scale	3.81
95% t UCL (Assumes normality)	0.741	95% H-Stat UCL	126.2

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	1.503

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHLOROFORM

General Statistics

Total Number of Observations	59	Number of Distinct Observations	13
Number of Detects	21	Number of Non-Detects	38
Number of Distinct Detects	11	Number of Distinct Non-Detects	7
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.00569	Maximum Non-Detect	0.005
Variance Detects	1.7224E-6	Percent Non-Detects	64.41%
Mean Detects	8.3762E-4	SD Detects	0.00131
Median Detects	3.0000E-4	CV Detects	1.567
Skewness Detects	2.969	Kurtosis Detects	9.676
Mean of Logged Detects	-7.831	SD of Logged Detects	1.183

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.592	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.287	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.7476E-4	Standard Error of Mean	1.1273E-4
SD	8.4151E-4	95% KM (BCA) UCL	5.8290E-4
95% KM (t) UCL	5.6319E-4	95% KM (Percentile Bootstrap) UCL	5.7869E-4
95% KM (z) UCL	5.6018E-4	95% KM Bootstrap t UCL	8.0580E-4
90% KM Chebyshev UCL	7.1294E-4	95% KM Chebyshev UCL	8.6612E-4
97.5% KM Chebyshev UCL	0.00108	99% KM Chebyshev UCL	0.0015

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.11	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.78	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.221	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.197	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.796	k star (bias corrected MLE)	0.714
Theta hat (MLE)	0.00105	Theta star (bias corrected MLE)	0.00117
nu hat (MLE)	33.42	nu star (bias corrected)	29.98
MLE Mean (bias corrected)	8.3762E-4	MLE Sd (bias corrected)	9.9147E-4

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.198	nu hat (KM)	23.4
Approximate Chi Square Value (23.40, α)	13.4	Adjusted Chi Square Value (23.40, β)	13.21
95% Gamma Approximate KM-UCL (use when n>=50)	6.5473E-4	95% Gamma Adjusted KM-UCL (use when n<50)	6.6416E-4

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.00674
Maximum	0.01	Median	0.01
SD	0.00449	CV	0.666
k hat (MLE)	0.789	k star (bias corrected MLE)	0.76
Theta hat (MLE)	0.00854	Theta star (bias corrected MLE)	0.00887
nu hat (MLE)	93.1	nu star (bias corrected)	89.7
MLE Mean (bias corrected)	0.00674	MLE Sd (bias corrected)	0.00773
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (89.70, α)	68.86	Adjusted Chi Square Value (89.70, β)	68.4
95% Gamma Approximate UCL (use when n>=50)	0.00878	95% Gamma Adjusted UCL (use when n<50)	0.00884

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.921	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.165	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.2560E-4	Mean in Log Scale	-9.637
SD in Original Scale	8.6191E-4	SD in Log Scale	1.787
95% t UCL (assumes normality of ROS data)	5.1317E-4	95% Percentile Bootstrap UCL	5.2405E-4
95% BCA Bootstrap UCL	6.1179E-4	95% Bootstrap t UCL	7.4537E-4
95% H-UCL (Log ROS)	7.4011E-4		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-8.659	95% H-UCL (KM -Log)	3.6615E-4
KM SD (logged)	0.957	95% Critical H Value (KM-Log)	2.295
KM Standard Error of Mean (logged)	0.133		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4.2356E-4	Mean in Log Scale	-8.691
SD in Original Scale	8.9014E-4	SD in Log Scale	1.211
95% t UCL (Assumes normality)	6.1727E-4	95% H-Stat UCL	5.4049E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL 5.8290E-4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ETHYLBENZENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	29
Number of Detects	28	Number of Non-Detects	31
Number of Distinct Detects	27	Number of Distinct Non-Detects	3
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	2.082	Maximum Non-Detect	3.9000E-4
Variance Detects	0.154	Percent Non-Detects	52.54%
Mean Detects	0.123	SD Detects	0.393
Median Detects	0.0322	CV Detects	3.184
Skewness Detects	4.928	Kurtosis Detects	25.15
Mean of Logged Detects	-4.163	SD of Logged Detects	2.226

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.321	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.421	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0586	Standard Error of Mean	0.0362
SD	0.273	95% KM (BCA) UCL	0.127
95% KM (t) UCL	0.119	95% KM (Percentile Bootstrap) UCL	0.127
95% KM (z) UCL	0.118	95% KM Bootstrap t UCL	0.357
90% KM Chebyshev UCL	0.167	95% KM Chebyshev UCL	0.216
97.5% KM Chebyshev UCL	0.285	99% KM Chebyshev UCL	0.419

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.451	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.848	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.22	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.179	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.328	k star (bias corrected MLE)	0.317
Theta hat (MLE)	0.376	Theta star (bias corrected MLE)	0.39
nu hat (MLE)	18.38	nu star (bias corrected)	17.74
MLE Mean (bias corrected)	0.123	MLE Sd (bias corrected)	0.219

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0461	nu hat (KM)	5.445
Approximate Chi Square Value (5.45, α)	1.363	Adjusted Chi Square Value (5.45, β)	1.314
95% Gamma Approximate KM-UCL (use when n>=50)	0.234	95% Gamma Adjusted KM-UCL (use when n<50)	0.243

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0638
Maximum	2.082	Median	0.01
SD	0.274	CV	4.295
k hat (MLE)	0.4	k star (bias corrected MLE)	0.391
Theta hat (MLE)	0.159	Theta star (bias corrected MLE)	0.163
nu hat (MLE)	47.23	nu star (bias corrected)	46.16
MLE Mean (bias corrected)	0.0638	MLE Sd (bias corrected)	0.102
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (46.16, α)	31.57	Adjusted Chi Square Value (46.16, β)	31.27
95% Gamma Approximate UCL (use when n>=50)	0.0933	95% Gamma Adjusted UCL (use when n<50)	0.0942

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.973	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.154	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0587	Mean in Log Scale	-7.317
SD in Original Scale	0.275	SD in Log Scale	3.71
95% t UCL (assumes normality of ROS data)	0.119	95% Percentile Bootstrap UCL	0.129
95% BCA Bootstrap UCL	0.169	95% Bootstrap t UCL	0.429
95% H-UCL (Log ROS)	16.81		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.815	95% H-UCL (KM -Log)	0.685
KM SD (logged)	2.936	95% Critical H Value (KM-Log)	5.516
KM Standard Error of Mean (logged)	0.389		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0586	Mean in Log Scale	-7.147
SD in Original Scale	0.275	SD in Log Scale	3.244
95% t UCL (Assumes normality)	0.119	95% H-Stat UCL	1.931

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.419

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

M+P-XYLENE

General Statistics

Total Number of Observations	23	Number of Distinct Observations	7
Number of Detects	5	Number of Non-Detects	18
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	0.0032	Minimum Non-Detect	2.0000E-4
Maximum Detect	0.1	Maximum Non-Detect	0.001
Variance Detects	0.00202	Percent Non-Detects	78.26%
Mean Detects	0.036	SD Detects	0.0449
Median Detects	0.0055	CV Detects	1.25
Skewness Detects	0.903	Kurtosis Detects	-1.632
Mean of Logged Detects	-4.29	SD of Logged Detects	1.649

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.782	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.351	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00797	Standard Error of Mean	0.00556
SD	0.0239	95% KM (BCA) UCL	0.0166
95% KM (t) UCL	0.0175	95% KM (Percentile Bootstrap) UCL	0.017
95% KM (z) UCL	0.0171	95% KM Bootstrap t UCL	0.098
90% KM Chebyshev UCL	0.0247	95% KM Chebyshev UCL	0.0322
97.5% KM Chebyshev UCL	0.0427	99% KM Chebyshev UCL	0.0633

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.636	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.704	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.356	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.369	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.635	k star (bias corrected MLE)	0.387
Theta hat (MLE)	0.0566	Theta star (bias corrected MLE)	0.0928
nu hat (MLE)	6.352	nu star (bias corrected)	3.874
MLE Mean (bias corrected)	0.036	MLE Sd (bias corrected)	0.0578

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.112	nu hat (KM)	5.141
Approximate Chi Square Value (5.14, α)	1.218	Adjusted Chi Square Value (5.14, β)	1.087
95% Gamma Approximate KM-UCL (use when n>=50)	0.0337	95% Gamma Adjusted KM-UCL (use when n<50)	0.0377

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0032	Mean	0.0156
Maximum	0.1	Median	0.01
SD	0.0221	CV	1.411
k hat (MLE)	1.464	k star (bias corrected MLE)	1.302
Theta hat (MLE)	0.0107	Theta star (bias corrected MLE)	0.012
nu hat (MLE)	67.33	nu star (bias corrected)	59.88
MLE Mean (bias corrected)	0.0156	MLE Sd (bias corrected)	0.0137
		Adjusted Level of Significance (β)	0.0389
Approximate Chi Square Value (59.88, α)	43.09	Adjusted Chi Square Value (59.88, β)	42.06
95% Gamma Approximate UCL (use when n>=50)	0.0217	95% Gamma Adjusted UCL (use when n<50)	0.0223

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.807	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.31	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0079	Mean in Log Scale	-9.977
SD in Original Scale	0.0244	SD in Log Scale	4.06
95% t UCL (assumes normality of ROS data)	0.0166	95% Percentile Bootstrap UCL	0.0176
95% BCA Bootstrap UCL	0.0207	95% Bootstrap t UCL	0.127
95% H-UCL (Log ROS)	131.7		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.598	95% H-UCL (KM -Log)	0.0135
KM SD (logged)	1.874	95% Critical H Value (KM-Log)	3.845
KM Standard Error of Mean (logged)	0.437		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00791	Mean in Log Scale	-8.071
SD in Original Scale	0.0244	SD in Log Scale	2.181
95% t UCL (Assumes normality)	0.0167	95% H-Stat UCL	0.0255

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0175	95% KM (Percentile Bootstrap) UCL	0.017

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

METHYLENE CHLORIDE

General Statistics

Total Number of Observations	60	Number of Distinct Observations	20
Number of Detects	14	Number of Non-Detects	46
Number of Distinct Detects	14	Number of Distinct Non-Detects	8
Minimum Detect	2.0000E-4	Minimum Non-Detect	2.0000E-4
Maximum Detect	2.734	Maximum Non-Detect	0.01
Variance Detects	0.531	Percent Non-Detects	76.67%
Mean Detects	0.205	SD Detects	0.728
Median Detects	0.00195	CV Detects	3.557
Skewness Detects	3.733	Kurtosis Detects	13.95
Mean of Logged Detects	-5.765	SD of Logged Detects	2.541

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.315	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.486	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0479	Standard Error of Mean	0.0469
SD	0.35	95% KM (BCA) UCL	0.139
95% KM (t) UCL	0.126	95% KM (Percentile Bootstrap) UCL	0.139
95% KM (z) UCL	0.125	95% KM Bootstrap t UCL	10.82
90% KM Chebyshev UCL	0.189	95% KM Chebyshev UCL	0.252
97.5% KM Chebyshev UCL	0.341	99% KM Chebyshev UCL	0.514

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.611	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.898	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.386	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.255	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.179	k star (bias corrected MLE)	0.188
Theta hat (MLE)	1.143	Theta star (bias corrected MLE)	1.087
nu hat (MLE)	5.016	nu star (bias corrected)	5.274
MLE Mean (bias corrected)	0.205	MLE Sd (bias corrected)	0.472

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0188	nu hat (KM)	2.253
Approximate Chi Square Value (2.25, α)	0.191	Adjusted Chi Square Value (2.25, β)	0.181
95% Gamma Approximate KM-UCL (use when n>=50)	0.567	95% Gamma Adjusted KM-UCL (use when n<50)	0.596

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.0000E-4	Mean	0.0554
Maximum	2.734	Median	0.01
SD	0.352	CV	6.346
k hat (MLE)	0.341	k star (bias corrected MLE)	0.335
Theta hat (MLE)	0.163	Theta star (bias corrected MLE)	0.166
nu hat (MLE)	40.87	nu star (bias corrected)	40.16
MLE Mean (bias corrected)	0.0554	MLE Sd (bias corrected)	0.0958
		Adjusted Level of Significance (β)	0.046
Approximate Chi Square Value (40.16, α)	26.64	Adjusted Chi Square Value (40.16, β)	26.37
95% Gamma Approximate UCL (use when n>=50)	0.0836	95% Gamma Adjusted UCL (use when n<50)	0.0844

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.841	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.221	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0478	Mean in Log Scale	-11.96
SD in Original Scale	0.353	SD in Log Scale	4.528
95% t UCL (assumes normality of ROS data)	0.124	95% Percentile Bootstrap UCL	0.139
95% BCA Bootstrap UCL	0.228	95% Bootstrap t UCL	10.36
95% H-UCL (Log ROS)	20.7		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.837	95% H-UCL (KM -Log)	0.00327
KM SD (logged)	1.659	95% Critical H Value (KM-Log)	3.408
KM Standard Error of Mean (logged)	0.224		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0481	Mean in Log Scale	-7.88
SD in Original Scale	0.353	SD in Log Scale	1.881
95% t UCL (Assumes normality)	0.124	95% H-Stat UCL	0.00552

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.341

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

METHYL-T-BUTYL ETHER

General Statistics

Total Number of Observations	53	Number of Distinct Observations	38
Number of Detects	42	Number of Non-Detects	11
Number of Distinct Detects	34	Number of Distinct Non-Detects	4
Minimum Detect	2.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.0405	Maximum Non-Detect	0.005
Variance Detects	9.2137E-5	Percent Non-Detects	20.75%
Mean Detects	0.00744	SD Detects	0.0096
Median Detects	0.00182	CV Detects	1.29
Skewness Detects	1.573	Kurtosis Detects	2.239
Mean of Logged Detects	-5.927	SD of Logged Detects	1.578

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.729	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.942	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.273	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.137	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00597	Standard Error of Mean	0.00124
SD	0.00892	95% KM (BCA) UCL	0.00802
95% KM (t) UCL	0.00805	95% KM (Percentile Bootstrap) UCL	0.0081
95% KM (z) UCL	0.00801	95% KM Bootstrap t UCL	0.00858
90% KM Chebyshev UCL	0.00969	95% KM Chebyshev UCL	0.0114
97.5% KM Chebyshev UCL	0.0137	99% KM Chebyshev UCL	0.0183

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.602	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.803	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.195	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.143	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.602	k star (bias corrected MLE)	0.575
Theta hat (MLE)	0.0124	Theta star (bias corrected MLE)	0.0129
nu hat (MLE)	50.57	nu star (bias corrected)	48.29
MLE Mean (bias corrected)	0.00744	MLE Sd (bias corrected)	0.00981

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.449	nu hat (KM)	47.56
Approximate Chi Square Value (47.56, α)	32.73	Adjusted Chi Square Value (47.56, β)	32.38
95% Gamma Approximate KM-UCL (use when n>=50)	0.00868	95% Gamma Adjusted KM-UCL (use when n<50)	0.00877

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.0000E-4	Mean	0.00797
Maximum	0.0405	Median	0.00642
SD	0.00859	CV	1.077
k hat (MLE)	0.732	k star (bias corrected MLE)	0.703
Theta hat (MLE)	0.0109	Theta star (bias corrected MLE)	0.0113
nu hat (MLE)	77.58	nu star (bias corrected)	74.53
MLE Mean (bias corrected)	0.00797	MLE Sd (bias corrected)	0.00951
		Adjusted Level of Significance (β)	0.0455
Approximate Chi Square Value (74.53, α)	55.64	Adjusted Chi Square Value (74.53, β)	55.19
95% Gamma Approximate UCL (use when n>=50)	0.0107	95% Gamma Adjusted UCL (use when n<50)	0.0108

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.862	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.942	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.139	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.137	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00596	Mean in Log Scale	-6.464
SD in Original Scale	0.00901	SD in Log Scale	1.82
95% t UCL (assumes normality of ROS data)	0.00803	95% Percentile Bootstrap UCL	0.00809
95% BCA Bootstrap UCL	0.0084	95% Bootstrap t UCL	0.0087
95% H-UCL (Log ROS)	0.0191		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00602	Mean in Log Scale	-6.384
SD in Original Scale	0.00898	SD in Log Scale	1.751
95% t UCL (Assumes normality)	0.00808	95% H-Stat UCL	0.0173

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL 0.0137

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NAPHTHALENE

General Statistics

Total Number of Observations	48	Number of Distinct Observations	27
Number of Detects	26	Number of Non-Detects	22
Number of Distinct Detects	26	Number of Distinct Non-Detects	2
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.036	Maximum Non-Detect	9.7000E-4
Variance Detects	6.8284E-5	Percent Non-Detects	45.83%
Mean Detects	0.00638	SD Detects	0.00826
Median Detects	0.00262	CV Detects	1.295
Skewness Detects	2.18	Kurtosis Detects	5.61
Mean of Logged Detects	-5.845	SD of Logged Detects	1.396

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.722	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.287	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00351	Standard Error of Mean	9.9100E-4
SD	0.00673	95% KM (BCA) UCL	0.00538
95% KM (t) UCL	0.00517	95% KM (Percentile Bootstrap) UCL	0.00529
95% KM (z) UCL	0.00514	95% KM Bootstrap t UCL	0.00606
90% KM Chebyshev UCL	0.00648	95% KM Chebyshev UCL	0.00783
97.5% KM Chebyshev UCL	0.00969	99% KM Chebyshev UCL	0.0134

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.617	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.784	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.178	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.178	Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.757	k star (bias corrected MLE)	0.695
Theta hat (MLE)	0.00843	Theta star (bias corrected MLE)	0.00918
nu hat (MLE)	39.35	nu star (bias corrected)	36.14
MLE Mean (bias corrected)	0.00638	MLE Sd (bias corrected)	0.00765

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.271	nu hat (KM)	26.04
Approximate Chi Square Value (26.04, α)	15.41	Adjusted Chi Square Value (26.04, β)	15.15
95% Gamma Approximate KM-UCL (use when n>=50)	0.00592	95% Gamma Adjusted KM-UCL (use when n<50)	0.00602

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.00804
Maximum	0.036	Median	0.01
SD	0.0063	CV	0.783
k hat (MLE)	1.244	k star (bias corrected MLE)	1.18
Theta hat (MLE)	0.00646	Theta star (bias corrected MLE)	0.00681
nu hat (MLE)	119.4	nu star (bias corrected)	113.3
MLE Mean (bias corrected)	0.00804	MLE Sd (bias corrected)	0.0074
		Adjusted Level of Significance (β)	0.045
Approximate Chi Square Value (113.26, α)	89.69	Adjusted Chi Square Value (113.26, β)	89.04
95% Gamma Approximate UCL (use when n>=50)	0.0102	95% Gamma Adjusted UCL (use when n<50)	0.0102

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.973	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.109	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00352	Mean in Log Scale	-7.466
SD in Original Scale	0.0068	SD in Log Scale	2.195
95% t UCL (assumes normality of ROS data)	0.00516	95% Percentile Bootstrap UCL	0.0053
95% BCA Bootstrap UCL	0.0056	95% Bootstrap t UCL	0.00602
95% H-UCL (Log ROS)	0.022		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.372	95% H-UCL (KM -Log)	0.0115
KM SD (logged)	1.95	95% Critical H Value (KM-Log)	3.531
KM Standard Error of Mean (logged)	0.288		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0035	Mean in Log Scale	-7.61
SD in Original Scale	0.00681	SD in Log Scale	2.236
95% t UCL (Assumes normality)	0.00515	95% H-Stat UCL	0.0218

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	0.00538	95% GROS Adjusted Gamma UCL	0.0102
95% Adjusted Gamma KM-UCL	0.00602		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

O-XYLENE

General Statistics

Total Number of Observations	50	Number of Distinct Observations	25
Number of Detects	22	Number of Non-Detects	28
Number of Distinct Detects	22	Number of Distinct Non-Detects	3
Minimum Detect	5.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	1.28	Maximum Non-Detect	0.001
Variance Detects	0.0791	Percent Non-Detects	56%
Mean Detects	0.107	SD Detects	0.281
Median Detects	0.0235	CV Detects	2.634
Skewness Detects	3.883	Kurtosis Detects	15.91
Mean of Logged Detects	-4.205	SD of Logged Detects	2.088

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.411	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.396	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.047	Standard Error of Mean	0.0275
SD	0.19	95% KM (BCA) UCL	0.097
95% KM (t) UCL	0.0931	95% KM (Percentile Bootstrap) UCL	0.0983
95% KM (z) UCL	0.0922	95% KM Bootstrap t UCL	0.298
90% KM Chebyshev UCL	0.129	95% KM Chebyshev UCL	0.167
97.5% KM Chebyshev UCL	0.219	99% KM Chebyshev UCL	0.32

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.299	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.838	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.218	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.2	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.343	k star (bias corrected MLE)	0.326
Theta hat (MLE)	0.311	Theta star (bias corrected MLE)	0.327
nu hat (MLE)	15.09	nu star (bias corrected)	14.36
MLE Mean (bias corrected)	0.107	MLE Sd (bias corrected)	0.187

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0614	nu hat (KM)	6.141
Approximate Chi Square Value (6.14, α)	1.712	Adjusted Chi Square Value (6.14, β)	1.644
95% Gamma Approximate KM-UCL (use when n>=50)	0.169	95% Gamma Adjusted KM-UCL (use when n<50)	0.176

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	5.0000E-4	Mean	0.0526
Maximum	1.28	Median	0.01
SD	0.19	CV	3.621
k hat (MLE)	0.437	k star (bias corrected MLE)	0.424
Theta hat (MLE)	0.12	Theta star (bias corrected MLE)	0.124
nu hat (MLE)	43.73	nu star (bias corrected)	42.44
MLE Mean (bias corrected)	0.0526	MLE Sd (bias corrected)	0.0807
		Adjusted Level of Significance (β)	0.0452
Approximate Chi Square Value (42.44, α)	28.5	Adjusted Chi Square Value (42.44, β)	28.16
95% Gamma Approximate UCL (use when n>=50)	0.0783	95% Gamma Adjusted UCL (use when n<50)	0.0792

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.959	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.148	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.047	Mean in Log Scale	-7.609
SD in Original Scale	0.192	SD in Log Scale	3.713
95% t UCL (assumes normality of ROS data)	0.0925	95% Percentile Bootstrap UCL	0.0994
95% BCA Bootstrap UCL	0.132	95% Bootstrap t UCL	0.321
95% H-UCL (Log ROS)	12.89		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.006	95% H-UCL (KM -Log)	0.347
KM SD (logged)	2.828	95% Critical H Value (KM-Log)	4.825
KM Standard Error of Mean (logged)	0.409		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.047	Mean in Log Scale	-7.309
SD in Original Scale	0.192	SD in Log Scale	3.126
95% t UCL (Assumes normality)	0.0925	95% H-Stat UCL	0.935

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	0.32

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

P-CHLOROTOLUENE

General Statistics

Total Number of Observations	19	Number of Distinct Observations	17
Number of Detects	16	Number of Non-Detects	3
Number of Distinct Detects	15	Number of Distinct Non-Detects	2
Minimum Detect	2.9000E-4	Minimum Non-Detect	5.6000E-4
Maximum Detect	0.562	Maximum Non-Detect	0.0028
Variance Detects	0.0192	Percent Non-Detects	15.79%
Mean Detects	0.0847	SD Detects	0.139
Median Detects	0.0415	CV Detects	1.636
Skewness Detects	3.033	Kurtosis Detects	10.43
Mean of Logged Detects	-3.906	SD of Logged Detects	2.261

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.608	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.276	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.222	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0714	Standard Error of Mean	0.0301
SD	0.127	95% KM (BCA) UCL	0.123
95% KM (t) UCL	0.124	95% KM (Percentile Bootstrap) UCL	0.125
95% KM (z) UCL	0.121	95% KM Bootstrap t UCL	0.185
90% KM Chebyshev UCL	0.162	95% KM Chebyshev UCL	0.202
97.5% KM Chebyshev UCL	0.259	99% KM Chebyshev UCL	0.37

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.303	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.807	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.125	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.229	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.449	k star (bias corrected MLE)	0.407
Theta hat (MLE)	0.188	Theta star (bias corrected MLE)	0.208
nu hat (MLE)	14.38	nu star (bias corrected)	13.02
MLE Mean (bias corrected)	0.0847	MLE Sd (bias corrected)	0.133

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.316	nu hat (KM)	12.02
Approximate Chi Square Value (12.02, α)	5.243	Adjusted Chi Square Value (12.02, β)	4.855
95% Gamma Approximate KM-UCL (use when n>=50)	0.164	95% Gamma Adjusted KM-UCL (use when n<50)	0.177

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.9000E-4	Mean	0.0729
Maximum	0.562	Median	0.0162
SD	0.13	CV	1.777
k hat (MLE)	0.46	k star (bias corrected MLE)	0.423
Theta hat (MLE)	0.158	Theta star (bias corrected MLE)	0.172
nu hat (MLE)	17.5	nu star (bias corrected)	16.07
MLE Mean (bias corrected)	0.0729	MLE Sd (bias corrected)	0.112
		Adjusted Level of Significance (β)	0.0369
Approximate Chi Square Value (16.07, α)	8.01	Adjusted Chi Square Value (16.07, β)	7.515
95% Gamma Approximate UCL (use when n>=50)	0.146	95% Gamma Adjusted UCL (use when n<50)	0.156

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.913	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.887	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.193	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.222	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0714	Mean in Log Scale	-4.445
SD in Original Scale	0.13	SD in Log Scale	2.438
95% t UCL (assumes normality of ROS data)	0.123	95% Percentile Bootstrap UCL	0.127
95% BCA Bootstrap UCL	0.153	95% Bootstrap t UCL	0.189
95% H-UCL (Log ROS)	4.144		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.53	95% H-UCL (KM -Log)	4.551
KM SD (logged)	2.476	95% Critical H Value (KM-Log)	5.108
KM Standard Error of Mean (logged)	0.588		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0715	Mean in Log Scale	-4.411
SD in Original Scale	0.13	SD in Log Scale	2.407
95% t UCL (Assumes normality)	0.123	95% H-Stat UCL	3.723

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.202	95% GROS Adjusted Gamma UCL	0.156
95% Adjusted Gamma KM-UCL	0.177		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

P-ISOPROPYLTOLUENE

General Statistics

Total Number of Observations	20	Number of Distinct Observations	8
Number of Detects	5	Number of Non-Detects	15
Number of Distinct Detects	5	Number of Distinct Non-Detects	3
Minimum Detect	0.00113	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.0107	Maximum Non-Detect	0.00164
Variance Detects	1.6117E-5	Percent Non-Detects	75%
Mean Detects	0.00363	SD Detects	0.00401
Median Detects	0.00201	CV Detects	1.106
Skewness Detects	2.029	Kurtosis Detects	4.202
Mean of Logged Detects	-6.002	SD of Logged Detects	0.913

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.716	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.352	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00101	Standard Error of Mean	5.8999E-4
SD	0.00235	95% KM (BCA) UCL	0.00223
95% KM (t) UCL	0.00203	95% KM (Percentile Bootstrap) UCL	0.00209
95% KM (z) UCL	0.00198	95% KM Bootstrap t UCL	0.00266
90% KM Chebyshev UCL	0.00278	95% KM Chebyshev UCL	0.00358
97.5% KM Chebyshev UCL	0.00469	99% KM Chebyshev UCL	0.00688

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.513	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.687	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.259	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.362	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.448	k star (bias corrected MLE)	0.713
Theta hat (MLE)	0.00251	Theta star (bias corrected MLE)	0.00509
nu hat (MLE)	14.48	nu star (bias corrected)	7.127
MLE Mean (bias corrected)	0.00363	MLE Sd (bias corrected)	0.0043

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.182	nu hat (KM)	7.297
Approximate Chi Square Value (7.30, α)	2.335	Adjusted Chi Square Value (7.30, β)	2.12
95% Gamma Approximate KM-UCL (use when n>=50)	0.00314	95% Gamma Adjusted KM-UCL (use when n<50)	0.00346

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00113	Mean	0.00841
Maximum	0.0107	Median	0.01
SD	0.00338	CV	0.402
k hat (MLE)	3.002	k star (bias corrected MLE)	2.585
Theta hat (MLE)	0.0028	Theta star (bias corrected MLE)	0.00325
nu hat (MLE)	120.1	nu star (bias corrected)	103.4
MLE Mean (bias corrected)	0.00841	MLE Sd (bias corrected)	0.00523
		Adjusted Level of Significance (β)	0.038
Approximate Chi Square Value (103.40, α)	80.93	Adjusted Chi Square Value (103.40, β)	79.36
95% Gamma Approximate UCL (use when n>=50)	0.0107	95% Gamma Adjusted UCL (use when n<50)	0.011

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.883	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.201	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00103	Mean in Log Scale	-8.474
SD in Original Scale	0.00241	SD in Log Scale	1.838
95% t UCL (assumes normality of ROS data)	0.00196	95% Percentile Bootstrap UCL	0.00202
95% BCA Bootstrap UCL	0.00256	95% Bootstrap t UCL	0.00426
95% H-UCL (Log ROS)	0.00614		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-8.355	95% H-UCL (KM -Log)	0.00212
KM SD (logged)	1.463	95% Critical H Value (KM-Log)	3.363
KM Standard Error of Mean (logged)	0.377		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00112	Mean in Log Scale	-7.852
SD in Original Scale	0.00238	SD in Log Scale	1.346
95% t UCL (Assumes normality)	0.00204	95% H-Stat UCL	0.00256

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00203	95% KM (Percentile Bootstrap) UCL	0.00209

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

t-Butyl Alcohol

General Statistics

Total Number of Observations	36	Number of Distinct Observations	11
Number of Detects	9	Number of Non-Detects	27
Number of Distinct Detects	9	Number of Distinct Non-Detects	3
Minimum Detect	0.005	Minimum Non-Detect	0.004
Maximum Detect	0.063	Maximum Non-Detect	0.2
Variance Detects	3.2442E-4	Percent Non-Detects	75%
Mean Detects	0.0169	SD Detects	0.018
Median Detects	0.011	CV Detects	1.064
Skewness Detects	2.562	Kurtosis Detects	7.028
Mean of Logged Detects	-4.4	SD of Logged Detects	0.777

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.652	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.321	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0074	Standard Error of Mean	0.00185
SD	0.0103	95% KM (BCA) UCL	0.011
95% KM (t) UCL	0.0105	95% KM (Percentile Bootstrap) UCL	0.0108
95% KM (z) UCL	0.0104	95% KM Bootstrap t UCL	0.0155
90% KM Chebyshev UCL	0.013	95% KM Chebyshev UCL	0.0155
97.5% KM Chebyshev UCL	0.019	99% KM Chebyshev UCL	0.0258

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.591	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.732	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.205	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.283	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.704	k star (bias corrected MLE)	1.21
Theta hat (MLE)	0.00993	Theta star (bias corrected MLE)	0.014
nu hat (MLE)	30.67	nu star (bias corrected)	21.78
MLE Mean (bias corrected)	0.0169	MLE Sd (bias corrected)	0.0154

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.515	nu hat (KM)	37.11
Approximate Chi Square Value (37.11, α)	24.17	Adjusted Chi Square Value (37.11, β)	23.69
95% Gamma Approximate KM-UCL (use when n>=50)	0.0114	95% Gamma Adjusted KM-UCL (use when n<50)	0.0116

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.005	Mean	0.0117
Maximum	0.063	Median	0.01
SD	0.00913	CV	0.778
k hat (MLE)	4.772	k star (bias corrected MLE)	4.393
Theta hat (MLE)	0.00246	Theta star (bias corrected MLE)	0.00267
nu hat (MLE)	343.6	nu star (bias corrected)	316.3
MLE Mean (bias corrected)	0.0117	MLE Sd (bias corrected)	0.0056
		Adjusted Level of Significance (β)	0.0428
Approximate Chi Square Value (316.29, α)	276.1	Adjusted Chi Square Value (316.29, β)	274.4
95% Gamma Approximate UCL (use when n>=50)	0.0134	95% Gamma Adjusted UCL (use when n<50)	0.0135

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.92	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.154	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00527	Mean in Log Scale	-6.345
SD in Original Scale	0.011	SD in Log Scale	1.498
95% t UCL (assumes normality of ROS data)	0.00838	95% Percentile Bootstrap UCL	0.00857
95% BCA Bootstrap UCL	0.0102	95% Bootstrap t UCL	0.0124
95% H-UCL (Log ROS)	0.0115		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.223	95% H-UCL (KM -Log)	0.00805
KM SD (logged)	0.619	95% Critical H Value (KM-Log)	2.004
KM Standard Error of Mean (logged)	0.112		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0089	Mean in Log Scale	-5.563
SD in Original Scale	0.019	SD in Log Scale	1.064
95% t UCL (Assumes normality)	0.0142	95% H-Stat UCL	0.0105

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0105	95% GROS Adjusted Gamma UCL	0.0135
95% Adjusted Gamma KM-UCL	0.0116		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TETRACHLOROETHYLENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	13
Number of Detects	18	Number of Non-Detects	41
Number of Distinct Detects	10	Number of Distinct Non-Detects	5
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.004	Maximum Non-Detect	0.005
Variance Detects	1.2870E-6	Percent Non-Detects	69.49%
Mean Detects	0.00104	SD Detects	0.00113
Median Detects	9.6000E-4	CV Detects	1.091
Skewness Detects	1.394	Kurtosis Detects	1.493
Mean of Logged Detects	-7.58	SD of Logged Detects	1.341

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.809	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.9309E-4	Standard Error of Mean	1.0161E-4
SD	7.5191E-4	95% KM (BCA) UCL	5.6964E-4
95% KM (t) UCL	5.6294E-4	95% KM (Percentile Bootstrap) UCL	5.7845E-4
95% KM (z) UCL	5.6022E-4	95% KM Bootstrap t UCL	6.5603E-4
90% KM Chebyshev UCL	6.9792E-4	95% KM Chebyshev UCL	8.3600E-4
97.5% KM Chebyshev UCL	0.00103	99% KM Chebyshev UCL	0.0014

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.864	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.774	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.229	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.211	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.831	k star (bias corrected MLE)	0.73
Theta hat (MLE)	0.00125	Theta star (bias corrected MLE)	0.00142
nu hat (MLE)	29.92	nu star (bias corrected)	26.27
MLE Mean (bias corrected)	0.00104	MLE Sd (bias corrected)	0.00122

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.273	nu hat (KM)	32.25
Approximate Chi Square Value (32.25, α)	20.27	Adjusted Chi Square Value (32.25, β)	20.03
95% Gamma Approximate KM-UCL (use when n>=50)	6.2540E-4	95% Gamma Adjusted KM-UCL (use when n<50)	6.3284E-4

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.00727
Maximum	0.01	Median	0.01
SD	0.00421	CV	0.579
k hat (MLE)	0.983	k star (bias corrected MLE)	0.945
Theta hat (MLE)	0.00739	Theta star (bias corrected MLE)	0.00769
nu hat (MLE)	116	nu star (bias corrected)	111.5
MLE Mean (bias corrected)	0.00727	MLE Sd (bias corrected)	0.00748
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (111.48, α)	88.11	Adjusted Chi Square Value (111.48, β)	87.59
95% Gamma Approximate UCL (use when n>=50)	0.00919	95% Gamma Adjusted UCL (use when n<50)	0.00925

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.865	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.225	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.209	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.3377E-4	Mean in Log Scale	-10.33
SD in Original Scale	7.7481E-4	SD in Log Scale	2.369
95% t UCL (assumes normality of ROS data)	5.0238E-4	95% Percentile Bootstrap UCL	5.1705E-4
95% BCA Bootstrap UCL	5.6290E-4	95% Bootstrap t UCL	5.8537E-4
95% H-UCL (Log ROS)	0.00223		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4.5059E-4	Mean in Log Scale	-8.755
SD in Original Scale	7.9944E-4	SD in Log Scale	1.361
95% t UCL (Assumes normality)	6.2457E-4	95% H-Stat UCL	6.7917E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL 5.6964E-4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TOLUENE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	29
Number of Detects	27	Number of Non-Detects	32
Number of Distinct Detects	27	Number of Distinct Non-Detects	3
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	13.81	Maximum Non-Detect	5.0000E-4
Variance Detects	11.7	Percent Non-Detects	54.24%
Mean Detects	1.211	SD Detects	3.421
Median Detects	0.0152	CV Detects	2.825
Skewness Detects	3.236	Kurtosis Detects	9.742
Mean of Logged Detects	-3.409	SD of Logged Detects	3.075

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.402	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.418	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.554	Standard Error of Mean	0.312
SD	2.349	95% KM (BCA) UCL	1.077
95% KM (t) UCL	1.075	95% KM (Percentile Bootstrap) UCL	1.113
95% KM (z) UCL	1.067	95% KM Bootstrap t UCL	2.587
90% KM Chebyshev UCL	1.489	95% KM Chebyshev UCL	1.913
97.5% KM Chebyshev UCL	2.501	99% KM Chebyshev UCL	3.656

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.082	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.9	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.251	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.186	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.204	k star (bias corrected MLE)	0.206
Theta hat (MLE)	5.94	Theta star (bias corrected MLE)	5.881
nu hat (MLE)	11.01	nu star (bias corrected)	11.12
MLE Mean (bias corrected)	1.211	MLE Sd (bias corrected)	2.668

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0556	nu hat (KM)	6.564
Approximate Chi Square Value (6.56, α)	1.934	Adjusted Chi Square Value (6.56, β)	1.872
95% Gamma Approximate KM-UCL (use when n>=50)	1.88	95% Gamma Adjusted KM-UCL (use when n<50)	1.942

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.559
Maximum	13.81	Median	0.01
SD	2.368	CV	4.233
k hat (MLE)	0.21	k star (bias corrected MLE)	0.211
Theta hat (MLE)	2.664	Theta star (bias corrected MLE)	2.656
nu hat (MLE)	24.78	nu star (bias corrected)	24.86
MLE Mean (bias corrected)	0.559	MLE Sd (bias corrected)	1.219
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (24.86, α)	14.5	Adjusted Chi Square Value (24.86, β)	14.3
95% Gamma Approximate UCL (use when n>=50)	0.959	95% Gamma Adjusted UCL (use when n<50)	0.972

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.966	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.158	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.554	Mean in Log Scale	-8.141
SD in Original Scale	2.37	SD in Log Scale	5.356
95% t UCL (assumes normality of ROS data)	1.07	95% Percentile Bootstrap UCL	1.107
95% BCA Bootstrap UCL	1.411	95% Bootstrap t UCL	2.748
95% H-UCL (Log ROS)	359029		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.555	95% H-UCL (KM -Log)	14.7
KM SD (logged)	3.538	95% Critical H Value (KM-Log)	6.422
KM Standard Error of Mean (logged)	0.469		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.554	Mean in Log Scale	-6.879
SD in Original Scale	2.37	SD in Log Scale	3.828
95% t UCL (Assumes normality)	1.07	95% H-Stat UCL	49.34

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	3.656

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

TRICHLOROETHYLENE

General Statistics

Total Number of Observations	61	Number of Distinct Observations	29
Number of Detects	41	Number of Non-Detects	20
Number of Distinct Detects	26	Number of Distinct Non-Detects	3
Minimum Detect	2.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.018	Maximum Non-Detect	0.005
Variance Detects	1.1877E-5	Percent Non-Detects	32.79%
Mean Detects	0.00255	SD Detects	0.00345
Median Detects	0.0012	CV Detects	1.353
Skewness Detects	2.78	Kurtosis Detects	9.606
Mean of Logged Detects	-6.672	SD of Logged Detects	1.22

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.681	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.941	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.248	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.138	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00177	Standard Error of Mean	3.9083E-4
SD	0.00301	95% KM (BCA) UCL	0.00244
95% KM (t) UCL	0.00242	95% KM (Percentile Bootstrap) UCL	0.00242
95% KM (z) UCL	0.00241	95% KM Bootstrap t UCL	0.00274
90% KM Chebyshev UCL	0.00294	95% KM Chebyshev UCL	0.00347
97.5% KM Chebyshev UCL	0.00421	99% KM Chebyshev UCL	0.00566

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.828	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.785	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.128	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.143	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.843	k star (bias corrected MLE)	0.798
Theta hat (MLE)	0.00302	Theta star (bias corrected MLE)	0.00319
nu hat (MLE)	69.15	nu star (bias corrected)	65.43
MLE Mean (bias corrected)	0.00255	MLE Sd (bias corrected)	0.00285

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.345	nu hat (KM)	42.04
Approximate Chi Square Value (42.04, α)	28.18	Adjusted Chi Square Value (42.04, β)	27.9
95% Gamma Approximate KM-UCL (use when n>=50)	0.00264	95% Gamma Adjusted KM-UCL (use when n<50)	0.00266

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	2.0000E-4	Mean	0.00499
Maximum	0.018	Median	0.00282
SD	0.00451	CV	0.904
k hat (MLE)	0.849	k star (bias corrected MLE)	0.818
Theta hat (MLE)	0.00588	Theta star (bias corrected MLE)	0.0061
nu hat (MLE)	103.5	nu star (bias corrected)	99.77
MLE Mean (bias corrected)	0.00499	MLE Sd (bias corrected)	0.00552
		Adjusted Level of Significance (β)	0.0461
Approximate Chi Square Value (99.77, α)	77.73	Adjusted Chi Square Value (99.77, β)	77.26
95% Gamma Approximate UCL (use when n>=50)	0.00641	95% Gamma Adjusted UCL (use when n<50)	0.00644

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.957	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.941	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0811	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.138	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00176	Mean in Log Scale	-7.519
SD in Original Scale	0.00304	SD in Log Scale	1.653
95% t UCL (assumes normality of ROS data)	0.00241	95% Percentile Bootstrap UCL	0.00243
95% BCA Bootstrap UCL	0.00257	95% Bootstrap t UCL	0.00269
95% H-UCL (Log ROS)	0.0038		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.427	95% H-UCL (KM -Log)	0.00298
KM SD (logged)	1.497	95% Critical H Value (KM-Log)	2.534
KM Standard Error of Mean (logged)	0.197		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00179	Mean in Log Scale	-7.467
SD in Original Scale	0.00303	SD in Log Scale	1.631
95% t UCL (Assumes normality)	0.00244	95% H-Stat UCL	0.0038

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	0.00244	95% GROS Approximate Gamma UCL	0.00641
95% Approximate Gamma KM-UCL	0.00264		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VINYL CHLORIDE

General Statistics

Total Number of Observations	59	Number of Distinct Observations	32
Number of Detects	34	Number of Non-Detects	25
Number of Distinct Detects	28	Number of Distinct Non-Detects	5
Minimum Detect	1.0000E-4	Minimum Non-Detect	8.0000E-5
Maximum Detect	0.34	Maximum Non-Detect	0.004
Variance Detects	0.00353	Percent Non-Detects	42.37%
Mean Detects	0.0162	SD Detects	0.0594
Median Detects	0.002	CV Detects	3.678
Skewness Detects	5.248	Kurtosis Detects	28.71
Mean of Logged Detects	-6.219	SD of Logged Detects	1.776

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.288	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.417	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.152	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00938	Standard Error of Mean	0.00597
SD	0.0452	95% KM (BCA) UCL	0.0208
95% KM (t) UCL	0.0194	95% KM (Percentile Bootstrap) UCL	0.0203
95% KM (z) UCL	0.0192	95% KM Bootstrap t UCL	0.0892
90% KM Chebyshev UCL	0.0273	95% KM Chebyshev UCL	0.0354
97.5% KM Chebyshev UCL	0.0466	99% KM Chebyshev UCL	0.0688

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.757	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.85	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.293	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.163	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.325	k star (bias corrected MLE)	0.316
Theta hat (MLE)	0.0497	Theta star (bias corrected MLE)	0.0512
nu hat (MLE)	22.1	nu star (bias corrected)	21.48
MLE Mean (bias corrected)	0.0162	MLE Sd (bias corrected)	0.0288

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0431	nu hat (KM)	5.09
Approximate Chi Square Value (5.09, α)	1.194	Adjusted Chi Square Value (5.09, β)	1.148
95% Gamma Approximate KM-UCL (use when n>=50)	0.04	95% Gamma Adjusted KM-UCL (use when n<50)	0.0416

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.0136
Maximum	0.34	Median	0.01
SD	0.0449	CV	3.317
k hat (MLE)	0.513	k star (bias corrected MLE)	0.498
Theta hat (MLE)	0.0264	Theta star (bias corrected MLE)	0.0272
nu hat (MLE)	60.5	nu star (bias corrected)	58.76
MLE Mean (bias corrected)	0.0136	MLE Sd (bias corrected)	0.0192
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (58.76, α)	42.13	Adjusted Chi Square Value (58.76, β)	41.78
95% Gamma Approximate UCL (use when n>=50)	0.0189	95% Gamma Adjusted UCL (use when n<50)	0.0191

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.949	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.933	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.144	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.152	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00935	Mean in Log Scale	-7.901
SD in Original Scale	0.0455	SD in Log Scale	2.541
95% t UCL (assumes normality of ROS data)	0.0193	95% Percentile Bootstrap UCL	0.0202
95% BCA Bootstrap UCL	0.0304	95% Bootstrap t UCL	0.0938
95% H-UCL (Log ROS)	0.0482		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.486	95% H-UCL (KM -Log)	0.0125
KM SD (logged)	2.03	95% Critical H Value (KM-Log)	3.9
KM Standard Error of Mean (logged)	0.273		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00944	Mean in Log Scale	-7.477
SD in Original Scale	0.0455	SD in Log Scale	2.185
95% t UCL (Assumes normality)	0.0193	95% H-Stat UCL	0.0204

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.0466

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

XYLENES,TOTAL

General Statistics

Total Number of Observations	59	Number of Distinct Observations	31
Number of Detects	28	Number of Non-Detects	31
Number of Distinct Detects	28	Number of Distinct Non-Detects	4
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	3.294	Maximum Non-Detect	0.001
Variance Detects	0.454	Percent Non-Detects	52.54%
Mean Detects	0.294	SD Detects	0.674
Median Detects	0.0473	CV Detects	2.294
Skewness Detects	3.709	Kurtosis Detects	15.24
Mean of Logged Detects	-3.406	SD of Logged Detects	2.567

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.484	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.331	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.139	Standard Error of Mean	0.0635
SD	0.479	95% KM (BCA) UCL	0.259
95% KM (t) UCL	0.246	95% KM (Percentile Bootstrap) UCL	0.254
95% KM (z) UCL	0.244	95% KM Bootstrap t UCL	0.388
90% KM Chebyshev UCL	0.33	95% KM Chebyshev UCL	0.416
97.5% KM Chebyshev UCL	0.536	99% KM Chebyshev UCL	0.771

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.645	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.851	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.117	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.179	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.314	k star (bias corrected MLE)	0.304
Theta hat (MLE)	0.936	Theta star (bias corrected MLE)	0.967
nu hat (MLE)	17.57	nu star (bias corrected)	17.02
MLE Mean (bias corrected)	0.294	MLE Sd (bias corrected)	0.533

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0848	nu hat (KM)	10.01
Approximate Chi Square Value (10.01, α)	3.949	Adjusted Chi Square Value (10.01, β)	3.854
95% Gamma Approximate KM-UCL (use when n>=50)	0.354	95% Gamma Adjusted KM-UCL (use when n<50)	0.362

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.145
Maximum	3.294	Median	0.01
SD	0.481	CV	3.328
k hat (MLE)	0.324	k star (bias corrected MLE)	0.319
Theta hat (MLE)	0.447	Theta star (bias corrected MLE)	0.454
nu hat (MLE)	38.21	nu star (bias corrected)	37.6
MLE Mean (bias corrected)	0.145	MLE Sd (bias corrected)	0.256
		Adjusted Level of Significance (β)	0.0459
Approximate Chi Square Value (37.60, α)	24.56	Adjusted Chi Square Value (37.60, β)	24.3
95% Gamma Approximate UCL (use when n>=50)	0.222	95% Gamma Adjusted UCL (use when n<50)	0.224

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.98	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.095	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.14	Mean in Log Scale	-7.055
SD in Original Scale	0.483	SD in Log Scale	4.258
95% t UCL (assumes normality of ROS data)	0.245	95% Percentile Bootstrap UCL	0.25
95% BCA Bootstrap UCL	0.307	95% Bootstrap t UCL	0.39
95% H-UCL (Log ROS)	503.7		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.454	95% H-UCL (KM -Log)	7.31
KM SD (logged)	3.378	95% Critical H Value (KM-Log)	6.176
KM Standard Error of Mean (logged)	0.448		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.139	Mean in Log Scale	-6.684
SD in Original Scale	0.483	SD in Log Scale	3.623
95% t UCL (Assumes normality)	0.245	95% H-Stat UCL	19.97

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.246	95% GROS Approximate Gamma UCL	0.222
95% Approximate Gamma KM-UCL	0.354		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,4-DIOXANE

General Statistics

Total Number of Observations	15	Number of Distinct Observations	7
Number of Detects	11	Number of Non-Detects	4
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	0.002	Minimum Non-Detect	9.0000E-4
Maximum Detect	0.039	Maximum Non-Detect	0.001
Variance Detects	1.1902E-4	Percent Non-Detects	26.67%
Mean Detects	0.00627	SD Detects	0.0109
Median Detects	0.003	CV Detects	1.739
Skewness Detects	3.256	Kurtosis Detects	10.7
Mean of Logged Detects	-5.635	SD of Logged Detects	0.871

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.429	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.456	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00484	Standard Error of Mean	0.0025
SD	0.00922	95% KM (BCA) UCL	0.00991
95% KM (t) UCL	0.00924	95% KM (Percentile Bootstrap) UCL	0.00977
95% KM (z) UCL	0.00895	95% KM Bootstrap t UCL	0.0275
90% KM Chebyshev UCL	0.0123	95% KM Chebyshev UCL	0.0157
97.5% KM Chebyshev UCL	0.0204	99% KM Chebyshev UCL	0.0297

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.997	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.751	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.362	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.262	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.021	k star (bias corrected MLE)	0.803
Theta hat (MLE)	0.00614	Theta star (bias corrected MLE)	0.00781
nu hat (MLE)	22.47	nu star (bias corrected)	17.67
MLE Mean (bias corrected)	0.00627	MLE Sd (bias corrected)	0.007

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.276	nu hat (KM)	8.269
Approximate Chi Square Value (8.27, α)	2.892	Adjusted Chi Square Value (8.27, β)	2.514
95% Gamma Approximate KM-UCL (use when n>=50)	0.0138	95% Gamma Adjusted KM-UCL (use when n<50)	0.0159

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	0.00727
Maximum	0.039	Median	0.004
SD	0.00938	CV	1.29
k hat (MLE)	1.287	k star (bias corrected MLE)	1.074
Theta hat (MLE)	0.00564	Theta star (bias corrected MLE)	0.00676
nu hat (MLE)	38.62	nu star (bias corrected)	32.23
MLE Mean (bias corrected)	0.00727	MLE Sd (bias corrected)	0.00701
		Adjusted Level of Significance (β)	0.0324
Approximate Chi Square Value (32.23, α)	20.26	Adjusted Chi Square Value (32.23, β)	19.09
95% Gamma Approximate UCL (use when n>=50)	0.0116	95% Gamma Adjusted UCL (use when n<50)	0.0123

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.681	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.85	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.266	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.267	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00476	Mean in Log Scale	-6.129
SD in Original Scale	0.00958	SD in Log Scale	1.132
95% t UCL (assumes normality of ROS data)	0.00911	95% Percentile Bootstrap UCL	0.00952
95% BCA Bootstrap UCL	0.0123	95% Bootstrap t UCL	0.0263
95% H-UCL (Log ROS)	0.0101		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.003	95% H-UCL (KM -Log)	0.00742
KM SD (logged)	0.936	95% Critical H Value (KM-Log)	2.644
KM Standard Error of Mean (logged)	0.254		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00472	Mean in Log Scale	-6.181
SD in Original Scale	0.0096	SD in Log Scale	1.191
95% t UCL (Assumes normality)	0.00909	95% H-Stat UCL	0.0111

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	0.00991

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2,4-DIMETHYLPHENOL

General Statistics

Total Number of Observations	20	Number of Distinct Observations	6
Number of Detects	3	Number of Non-Detects	17
Number of Distinct Detects	3	Number of Distinct Non-Detects	3
Minimum Detect	0.005	Minimum Non-Detect	5.0000E-4
Maximum Detect	0.1	Maximum Non-Detect	0.003
Variance Detects	0.00291	Percent Non-Detects	85%
Mean Detects	0.0377	SD Detects	0.0539
Median Detects	0.0082	CV Detects	1.43
Skewness Detects	1.725	Kurtosis Detects	N/A
Mean of Logged Detects	-4.135	SD of Logged Detects	1.606

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.775	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.375	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00609	Standard Error of Mean	0.00592
SD	0.0216	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.0163	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0158	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0239	95% KM Chebyshev UCL	0.0319
97.5% KM Chebyshev UCL	0.0431	99% KM Chebyshev UCL	0.065

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.704	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0536	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	4.225	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0792	nu hat (KM)	3.166
		Adjusted Level of Significance (β)	0.038
Approximate Chi Square Value (3.17, α)	0.423	Adjusted Chi Square Value (3.17, β)	0.358
95% Gamma Approximate KM-UCL (use when n>=50)	0.0455	95% Gamma Adjusted KM-UCL (use when n<50)	0.0538

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.87	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.328	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0057	Mean in Log Scale	-12.07
SD in Original Scale	0.0223	SD in Log Scale	4.766
95% t UCL (assumes normality of ROS data)	0.0143	95% Percentile Bootstrap UCL	0.0154
95% BCA Bootstrap UCL	0.0211	95% Bootstrap t UCL	0.114
95% H-UCL (Log ROS)	17959		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.081	95% H-UCL (KM -Log)	0.00542
KM SD (logged)	1.338	95% Critical H Value (KM-Log)	3.156
KM Standard Error of Mean (logged)	0.366		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00604	Mean in Log Scale	-7.421
SD in Original Scale	0.0222	SD in Log Scale	1.625
95% t UCL (Assumes normality)	0.0146	95% H-Stat UCL	0.00871

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0163	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

2-METHYLNAPHTHALENE

General Statistics

Total Number of Observations	20	Number of Distinct Observations	7
Number of Detects	4	Number of Non-Detects	16
Number of Distinct Detects	4	Number of Distinct Non-Detects	3
Minimum Detect	4.0000E-4	Minimum Non-Detect	9.0000E-5
Maximum Detect	0.005	Maximum Non-Detect	9.0000E-4
Variance Detects	4.7877E-6	Percent Non-Detects	80%
Mean Detects	0.00174	SD Detects	0.00219
Median Detects	7.8000E-4	CV Detects	1.258
Skewness Detects	1.921	Kurtosis Detects	3.719
Mean of Logged Detects	-6.879	SD of Logged Detects	1.12

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.729	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.382	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	4.2488E-4	Standard Error of Mean	2.7742E-4
SD	0.00107	95% KM (BCA) UCL	N/A
95% KM (t) UCL	9.0458E-4	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	8.8120E-4	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00126	95% KM Chebyshev UCL	0.00163
97.5% KM Chebyshev UCL	0.00216	99% KM Chebyshev UCL	0.00319

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.493	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.666	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.327	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.402	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.088	k star (bias corrected MLE)	0.439
Theta hat (MLE)	0.0016	Theta star (bias corrected MLE)	0.00397
nu hat (MLE)	8.702	nu star (bias corrected)	3.509
MLE Mean (bias corrected)	0.00174	MLE Sd (bias corrected)	0.00263

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.157	nu hat (KM)	6.265
Approximate Chi Square Value (6.27, α)	1.777	Adjusted Chi Square Value (6.27, β)	1.595
95% Gamma Approximate KM-UCL (use when n>=50)	0.0015	95% Gamma Adjusted KM-UCL (use when n<50)	0.00167

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	4.0000E-4	Mean	0.00835
Maximum	0.01	Median	0.01
SD	0.0035	CV	0.419
k hat (MLE)	1.973	k star (bias corrected MLE)	1.711
Theta hat (MLE)	0.00423	Theta star (bias corrected MLE)	0.00488
nu hat (MLE)	78.93	nu star (bias corrected)	68.43
MLE Mean (bias corrected)	0.00835	MLE Sd (bias corrected)	0.00638
		Adjusted Level of Significance (β)	0.038
Approximate Chi Square Value (68.43, α)	50.39	Adjusted Chi Square Value (68.43, β)	49.16
95% Gamma Approximate UCL (use when n>=50)	0.0113	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.893	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.26	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.7402E-4	Mean in Log Scale	-10.35
SD in Original Scale	0.00112	SD in Log Scale	2.316
95% t UCL (assumes normality of ROS data)	8.0601E-4	95% Percentile Bootstrap UCL	8.5317E-4
95% BCA Bootstrap UCL	0.00113	95% Bootstrap t UCL	0.00299
95% H-UCL (Log ROS)	0.00625		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-8.808	95% H-UCL (KM -Log)	5.2272E-4
KM SD (logged)	1.073	95% Critical H Value (KM-Log)	2.742
KM Standard Error of Mean (logged)	0.281		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4.2500E-4	Mean in Log Scale	-9.142
SD in Original Scale	0.00111	SD in Log Scale	1.424
95% t UCL (Assumes normality)	8.5313E-4	95% H-Stat UCL	8.6713E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	9.0458E-4	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

3-NITROANILINE

General Statistics

Total Number of Observations	20	Number of Distinct Observations	5
Number of Detects	2	Number of Non-Detects	18
Number of Distinct Detects	2	Number of Distinct Non-Detects	3
Minimum Detect	5.8000E-4	Minimum Non-Detect	5.0000E-4
Maximum Detect	0.00346	Maximum Non-Detect	0.001
Variance Detects	4.1472E-6	Percent Non-Detects	90%
Mean Detects	0.00202	SD Detects	0.00204
Median Detects	0.00202	CV Detects	1.008
Skewness Detects	N/A	Kurtosis Detects	N/A
Mean of Logged Detects	-6.559	SD of Logged Detects	1.263

Warning: Data set has only 2 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Not Enough Data to Perform GOF Test

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	6.5275E-4	Standard Error of Mean	2.0376E-4
SD	6.4430E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00101	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	9.8791E-4	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00126	95% KM Chebyshev UCL	0.00154
97.5% KM Chebyshev UCL	0.00193	99% KM Chebyshev UCL	0.00268

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.555	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0013	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	6.219	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.026	nu hat (KM)	41.06
		Adjusted Level of Significance (β)	0.038
Approximate Chi Square Value (41.06, α)	27.37	Adjusted Chi Square Value (41.06, β)	26.49
95% Gamma Approximate KM-UCL (use when n>=50)	9.7910E-4	95% Gamma Adjusted KM-UCL (use when n<50)	0.00101

Lognormal GOF Test on Detected Observations Only

Not Enough Data to Perform GOF Test

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.1950E-4	Mean in Log Scale	-11.94
SD in Original Scale	7.7369E-4	SD in Log Scale	2.824
95% t UCL (assumes normality of ROS data)	5.1865E-4	95% Percentile Bootstrap UCL	5.4250E-4
95% BCA Bootstrap UCL	7.4099E-4	95% Bootstrap t UCL	0.00478
95% H-UCL (Log ROS)	0.0154		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4.5950E-4	Mean in Log Scale	-8.027
SD in Original Scale	7.1369E-4	SD in Log Scale	0.622
95% t UCL (Assumes normality)	7.3544E-4	95% H-Stat UCL	5.3838E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Biphenyl

General Statistics

Total Number of Observations	15	Number of Distinct Observations	4
Number of Detects	3	Number of Non-Detects	12
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	6.0000E-4	Minimum Non-Detect	5.0000E-4
Maximum Detect	0.024	Maximum Non-Detect	5.0000E-4
Variance Detects	1.7945E-4	Percent Non-Detects	80%
Mean Detects	0.00853	SD Detects	0.0134
Median Detects	0.001	CV Detects	1.57
Skewness Detects	1.73	Kurtosis Detects	N/A
Mean of Logged Detects	-6.019	SD of Logged Detects	1.999

Warning: Data set has only 3 Detected Values.
This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.763	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.38	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00211	Standard Error of Mean	0.00185
SD	0.00585	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00537	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00515	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00766	95% KM Chebyshev UCL	0.0102
97.5% KM Chebyshev UCL	0.0137	99% KM Chebyshev UCL	0.0205

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	0.505	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0169	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	3.032	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.13	nu hat (KM)	3.887
		Adjusted Level of Significance (β)	0.0324
Approximate Chi Square Value (3.89, α)	0.678	Adjusted Chi Square Value (3.89, β)	0.535
95% Gamma Approximate KM-UCL (use when n>=50)	0.0121	95% Gamma Adjusted KM-UCL (use when n<50)	0.0153

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.852	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.338	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00171	Mean in Log Scale	-14.23
SD in Original Scale	0.00617	SD in Log Scale	5.694
95% t UCL (assumes normality of ROS data)	0.00452	95% Percentile Bootstrap UCL	0.00488
95% BCA Bootstrap UCL	0.00653	95% Bootstrap t UCL	0.0685
95% H-UCL (Log ROS)	8.002E+8		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-7.284	95% H-UCL (KM -Log)	0.00219
KM SD (logged)	0.966	95% Critical H Value (KM-Log)	2.69
KM Standard Error of Mean (logged)	0.305		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00191	Mean in Log Scale	-7.839
SD in Original Scale	0.00612	SD in Log Scale	1.208
95% t UCL (Assumes normality)	0.00469	95% H-Stat UCL	0.00221

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00537	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BIS(2-ETHYLHEXYL)PHTHALATE

General Statistics

Total Number of Observations	20	Number of Distinct Observations	5
Number of Detects	4	Number of Non-Detects	16
Number of Distinct Detects	4	Number of Distinct Non-Detects	1
Minimum Detect	0.00557	Minimum Non-Detect	0.002
Maximum Detect	0.018	Maximum Non-Detect	0.002
Variance Detects	3.4155E-5	Percent Non-Detects	80%
Mean Detects	0.00937	SD Detects	0.00584
Median Detects	0.00695	CV Detects	0.624
Skewness Detects	1.83	Kurtosis Detects	3.359
Mean of Logged Detects	-4.791	SD of Logged Detects	0.537

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.766	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.35	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00347	Standard Error of Mean	9.5924E-4
SD	0.00372	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00513	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00505	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00635	95% KM Chebyshev UCL	0.00765
97.5% KM Chebyshev UCL	0.00946	99% KM Chebyshev UCL	0.013

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.533	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.659	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.322	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.396	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	4.302	k star (bias corrected MLE)	1.242
Theta hat (MLE)	0.00218	Theta star (bias corrected MLE)	0.00754
nu hat (MLE)	34.42	nu star (bias corrected)	9.938
MLE Mean (bias corrected)	0.00937	MLE Sd (bias corrected)	0.0084

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.874	nu hat (KM)	34.96
Approximate Chi Square Value (34.96, α)	22.43	Adjusted Chi Square Value (34.96, β)	21.64
95% Gamma Approximate KM-UCL (use when n>=50)	0.00541	95% Gamma Adjusted KM-UCL (use when n<50)	0.00561

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 11:23:00 AM
From File	GW-ProUCL-Plume-RECENT.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.00557	Mean	0.00987
Maximum	0.018	Median	0.01
SD	0.00234	CV	0.237
k hat (MLE)	20.59	k star (bias corrected MLE)	17.54
Theta hat (MLE)	4.7949E-4	Theta star (bias corrected MLE)	5.6304E-4
nu hat (MLE)	823.6	nu star (bias corrected)	701.4
MLE Mean (bias corrected)	0.00987	MLE Sd (bias corrected)	0.00236
		Adjusted Level of Significance (β)	0.038
Approximate Chi Square Value (701.41, α)	641	Adjusted Chi Square Value (701.41, β)	636.4
95% Gamma Approximate UCL (use when n>=50)	0.0108	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.838	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.288	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00264	Mean in Log Scale	-6.887
SD in Original Scale	0.00423	SD in Log Scale	1.46
95% t UCL (assumes normality of ROS data)	0.00427	95% Percentile Bootstrap UCL	0.00425
95% BCA Bootstrap UCL	0.005	95% Bootstrap t UCL	0.00622
95% H-UCL (Log ROS)	0.00914		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.93	95% H-UCL (KM -Log)	0.0043
KM SD (logged)	0.606	95% Critical H Value (KM-Log)	2.129
KM Standard Error of Mean (logged)	0.156		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00267	Mean in Log Scale	-6.484
SD in Original Scale	0.00414	SD in Log Scale	0.894
95% t UCL (Assumes normality)	0.00428	95% H-Stat UCL	0.00379

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00513	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	32
Number of Detects	31	Number of Non-Detects	3
Number of Distinct Detects	31	Number of Distinct Non-Detects	1
Minimum Detect	0.229	Minimum Non-Detect	0.2
Maximum Detect	35	Maximum Non-Detect	0.2
Variance Detects	38.99	Percent Non-Detects	8.824%
Mean Detects	5.24	SD Detects	6.244
Median Detects	4.35	CV Detects	1.192
Skewness Detects	3.845	Kurtosis Detects	17.88
Mean of Logged Detects	1.195	SD of Logged Detects	1.048

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.599	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.159	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	4.796	Standard Error of Mean	1.052
SD	6.037	95% KM (BCA) UCL	6.843
95% KM (t) UCL	6.577	95% KM (Percentile Bootstrap) UCL	6.627
95% KM (z) UCL	6.527	95% KM Bootstrap t UCL	8.352
90% KM Chebyshev UCL	7.953	95% KM Chebyshev UCL	9.383
97.5% KM Chebyshev UCL	11.37	99% KM Chebyshev UCL	15.27

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.681	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.77	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.163	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.162	Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.224	k star (bias corrected MLE)	1.127
Theta hat (MLE)	4.281	Theta star (bias corrected MLE)	4.649
nu hat (MLE)	75.9	nu star (bias corrected)	69.89
MLE Mean (bias corrected)	5.24	MLE Sd (bias corrected)	4.936

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.631	nu hat (KM)	42.91
Approximate Chi Square Value (42.91, α)	28.89	Adjusted Chi Square Value (42.91, β)	28.32
95% Gamma Approximate KM-UCL (use when n>=50)	7.123	95% Gamma Adjusted KM-UCL (use when n<50)	7.266

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	4.779
Maximum	35	Median	4.215
SD	6.141	CV	1.285
k hat (MLE)	0.688	k star (bias corrected MLE)	0.647
Theta hat (MLE)	6.947	Theta star (bias corrected MLE)	7.388
nu hat (MLE)	46.78	nu star (bias corrected)	43.98
MLE Mean (bias corrected)	4.779	MLE Sd (bias corrected)	5.942
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (43.98, α)	29.77	Adjusted Chi Square Value (43.98, β)	29.19
95% Gamma Approximate UCL (use when n>=50)	7.059	95% Gamma Adjusted UCL (use when n<50)	7.199

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.167	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.159	Detected Data Not Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	4.807	Mean in Log Scale	0.99
SD in Original Scale	6.119	SD in Log Scale	1.206
95% t UCL (assumes normality of ROS data)	6.583	95% Percentile Bootstrap UCL	6.702
95% BCA Bootstrap UCL	7.449	95% Bootstrap t UCL	8.192
95% H-UCL (Log ROS)	9.832		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	0.948	95% H-UCL (KM -Log)	10.63
KM SD (logged)	1.266	95% Critical H Value (KM-Log)	2.791
KM Standard Error of Mean (logged)	0.221		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	4.787	Mean in Log Scale	0.887
SD in Original Scale	6.135	SD in Log Scale	1.419
95% t UCL (Assumes normality)	6.567	95% H-Stat UCL	13.94

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	9.383	95% GROS Adjusted Gamma UCL	7.199
95% Adjusted Gamma KM-UCL	7.266		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ALUMINUM T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	37
		Number of Missing Observations	0
Minimum	0.25	Mean	21.91
Maximum	189	Median	4.565
SD	47.19	Std. Error of Mean	7.656
Coefficient of Variation	2.154	Skewness	2.751

Normal GOF Test

Shapiro Wilk Test Statistic	0.483	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.938	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.416	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.144	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	34.82	95% Adjusted-CLT UCL (Chen-1995)	38.15
		95% Modified-t UCL (Johnson-1978)	35.39

Gamma GOF Test

A-D Test Statistic	3.619	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.823	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.289	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.152	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.452	k star (bias corrected MLE)	0.434
Theta hat (MLE)	48.41	Theta star (bias corrected MLE)	50.44
nu hat (MLE)	34.39	nu star (bias corrected)	33.01
MLE Mean (bias corrected)	21.91	MLE Sd (bias corrected)	33.24
		Approximate Chi Square Value (0.05)	20.87
Adjusted Level of Significance	0.0434	Adjusted Chi Square Value	20.47

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	34.64	95% Adjusted Gamma UCL (use when n<50)	35.32

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.926	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.938	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.17	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.144	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-1.386	Mean of logged Data	1.661
Maximum of Logged Data	5.242	SD of logged Data	1.602

Assuming Lognormal Distribution

95% H-UCL	43.72	90% Chebyshev (MVUE) UCL	35.86
95% Chebyshev (MVUE) UCL	44.1	97.5% Chebyshev (MVUE) UCL	55.53
99% Chebyshev (MVUE) UCL	77.99		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	34.5	95% Jackknife UCL	34.82
95% Standard Bootstrap UCL	34.39	95% Bootstrap-t UCL	42.1
95% Hall's Bootstrap UCL	33.87	95% Percentile Bootstrap UCL	35.23
95% BCA Bootstrap UCL	38.28		
90% Chebyshev(Mean, Sd) UCL	44.87	95% Chebyshev(Mean, Sd) UCL	55.28
97.5% Chebyshev(Mean, Sd) UCL	69.72	99% Chebyshev(Mean, Sd) UCL	98.08

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 55.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	8
Number of Detects	6	Number of Non-Detects	28
Number of Distinct Detects	6	Number of Distinct Non-Detects	2
Minimum Detect	0.0065	Minimum Non-Detect	0.005
Maximum Detect	0.0126	Maximum Non-Detect	0.0098
Variance Detects	5.1040E-6	Percent Non-Detects	82.35%
Mean Detects	0.0093	SD Detects	0.00226
Median Detects	0.0097	CV Detects	0.243
Skewness Detects	0.0823	Kurtosis Detects	-0.626
Mean of Logged Detects	-4.703	SD of Logged Detects	0.25

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.941	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.184	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00656	Standard Error of Mean	6.4073E-4
SD	0.00204	95% KM (BCA) UCL	0.0077
95% KM (t) UCL	0.00764	95% KM (Percentile Bootstrap) UCL	0.00766
95% KM (z) UCL	0.00761	95% KM Bootstrap t UCL	0.00764
90% KM Chebyshev UCL	0.00848	95% KM Chebyshev UCL	0.00935
97.5% KM Chebyshev UCL	0.0106	99% KM Chebyshev UCL	0.0129

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.326	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.697	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.215	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.332	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	19.74	k star (bias corrected MLE)	9.982
Theta hat (MLE)	4.7106E-4	Theta star (bias corrected MLE)	9.3164E-4
nu hat (MLE)	236.9	nu star (bias corrected)	119.8
MLE Mean (bias corrected)	0.0093	MLE Sd (bias corrected)	0.00294

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	10.29	nu hat (KM)	699.7
Approximate Chi Square Value (699.67, α)	639.3	Adjusted Chi Square Value (699.67, β)	636.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.00717	95% Gamma Adjusted KM-UCL (use when n<50)	0.00721

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0065	Mean	0.00988
Maximum	0.0126	Median	0.01
SD	9.2016E-4	CV	0.0932
k hat (MLE)	102.5	k star (bias corrected MLE)	93.52
Theta hat (MLE)	9.6312E-5	Theta star (bias corrected MLE)	1.0561E-4
nu hat (MLE)	6973	nu star (bias corrected)	6359
MLE Mean (bias corrected)	0.00988	MLE Sd (bias corrected)	0.00102
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (N/A, α)	6175	Adjusted Chi Square Value (N/A, β)	6166
95% Gamma Approximate UCL (use when n>=50)	0.0102	95% Gamma Adjusted UCL (use when n<50)	0.0102

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.929	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.788	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.224	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.362	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00636	Mean in Log Scale	-5.111
SD in Original Scale	0.00216	SD in Log Scale	0.327
95% t UCL (assumes normality of ROS data)	0.00698	95% Percentile Bootstrap UCL	0.00698
95% BCA Bootstrap UCL	0.00697	95% Bootstrap t UCL	0.00706
95% H-UCL (Log ROS)	0.00705		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.069	95% H-UCL (KM -Log)	0.00713
KM SD (logged)	0.279	95% Critical H Value (KM-Log)	1.787
KM Standard Error of Mean (logged)	0.0921		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00539	Mean in Log Scale	-5.289
SD in Original Scale	0.00218	SD in Log Scale	0.364
95% t UCL (Assumes normality)	0.00603	95% H-Stat UCL	0.00606

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00764	95% KM (Percentile Bootstrap) UCL	0.00766

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ARSENIC T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	17
Number of Detects	14	Number of Non-Detects	24
Number of Distinct Detects	14	Number of Distinct Non-Detects	3
Minimum Detect	0.0065	Minimum Non-Detect	0.005
Maximum Detect	0.138	Maximum Non-Detect	0.0098
Variance Detects	0.00145	Percent Non-Detects	63.16%
Mean Detects	0.0365	SD Detects	0.038
Median Detects	0.018	CV Detects	1.041
Skewness Detects	1.678	Kurtosis Detects	2.84
Mean of Logged Detects	-3.773	SD of Logged Detects	0.993

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.783	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0175	Standard Error of Mean	0.00451
SD	0.0266	95% KM (BCA) UCL	0.0249
95% KM (t) UCL	0.0251	95% KM (Percentile Bootstrap) UCL	0.0251
95% KM (z) UCL	0.0249	95% KM Bootstrap t UCL	0.0303
90% KM Chebyshev UCL	0.031	95% KM Chebyshev UCL	0.0371
97.5% KM Chebyshev UCL	0.0456	99% KM Chebyshev UCL	0.0623

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.675	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.756	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.221	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.234	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.218	k star (bias corrected MLE)	1.004
Theta hat (MLE)	0.03	Theta star (bias corrected MLE)	0.0364
nu hat (MLE)	34.09	nu star (bias corrected)	28.12
MLE Mean (bias corrected)	0.0365	MLE Sd (bias corrected)	0.0365

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.431	nu hat (KM)	32.75
Approximate Chi Square Value (32.75, α)	20.67	Adjusted Chi Square Value (32.75, β)	20.27
95% Gamma Approximate KM-UCL (use when n>=50)	0.0277	95% Gamma Adjusted KM-UCL (use when n<50)	0.0282

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0065	Mean	0.0198
Maximum	0.138	Median	0.01
SD	0.026	CV	1.315
k hat (MLE)	1.476	k star (bias corrected MLE)	1.377
Theta hat (MLE)	0.0134	Theta star (bias corrected MLE)	0.0144
nu hat (MLE)	112.2	nu star (bias corrected)	104.7
MLE Mean (bias corrected)	0.0198	MLE Sd (bias corrected)	0.0169
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (104.66, α)	82.05	Adjusted Chi Square Value (104.66, β)	81.22
95% Gamma Approximate UCL (use when n>=50)	0.0252	95% Gamma Adjusted UCL (use when n<50)	0.0255

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.913	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.874	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.2	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.237	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0157	Mean in Log Scale	-5.215
SD in Original Scale	0.0278	SD in Log Scale	1.487
95% t UCL (assumes normality of ROS data)	0.0233	95% Percentile Bootstrap UCL	0.0231
95% BCA Bootstrap UCL	0.0256	95% Bootstrap t UCL	0.0281
95% H-UCL (Log ROS)	0.0343		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.607	95% H-UCL (KM -Log)	0.0206
KM SD (logged)	0.885	95% Critical H Value (KM-Log)	2.269
KM Standard Error of Mean (logged)	0.164		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0164	Mean in Log Scale	-4.801
SD in Original Scale	0.0274	SD in Log Scale	1.005
95% t UCL (Assumes normality)	0.0239	95% H-Stat UCL	0.0203

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0251	95% KM (Percentile Bootstrap) UCL	0.0251

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BARIUM D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	27
Number of Detects	27	Number of Non-Detects	7
Number of Distinct Detects	26	Number of Distinct Non-Detects	1
Minimum Detect	0.0244	Minimum Non-Detect	0.2
Maximum Detect	0.0985	Maximum Non-Detect	0.2
Variance Detects	3.1954E-4	Percent Non-Detects	20.59%
Mean Detects	0.0465	SD Detects	0.0179
Median Detects	0.0411	CV Detects	0.385
Skewness Detects	1.246	Kurtosis Detects	1.444
Mean of Logged Detects	-3.132	SD of Logged Detects	0.353

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.894	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.172	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0465	Standard Error of Mean	0.00344
SD	0.0175	95% KM (BCA) UCL	0.0523
95% KM (t) UCL	0.0523	95% KM (Percentile Bootstrap) UCL	0.0522
95% KM (z) UCL	0.0521	95% KM Bootstrap t UCL	0.0533
90% KM Chebyshev UCL	0.0568	95% KM Chebyshev UCL	0.0615
97.5% KM Chebyshev UCL	0.068	99% KM Chebyshev UCL	0.0807

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.492	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.745	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.142	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.168	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	8.108	k star (bias corrected MLE)	7.232
Theta hat (MLE)	0.00573	Theta star (bias corrected MLE)	0.00643
nu hat (MLE)	437.9	nu star (bias corrected)	390.5
MLE Mean (bias corrected)	0.0465	MLE Sd (bias corrected)	0.0173

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	7.021	nu hat (KM)	477.5
Approximate Chi Square Value (477.45, α)	427.8	Adjusted Chi Square Value (477.45, β)	425.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.0519	95% Gamma Adjusted KM-UCL (use when n<50)	0.0522

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0244	Mean	0.0464
Maximum	0.0985	Median	0.0412
SD	0.0171	CV	0.369
k hat (MLE)	8.518	k star (bias corrected MLE)	7.786
Theta hat (MLE)	0.00544	Theta star (bias corrected MLE)	0.00595
nu hat (MLE)	579.2	nu star (bias corrected)	529.5
MLE Mean (bias corrected)	0.0464	MLE Sd (bias corrected)	0.0166
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (529.47, α)	477.1	Adjusted Chi Square Value (529.47, β)	474.7
95% Gamma Approximate UCL (use when n>=50)	0.0514	95% Gamma Adjusted UCL (use when n<50)	0.0517

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.923	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.12	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.171	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0463	Mean in Log Scale	-3.132
SD in Original Scale	0.0169	SD in Log Scale	0.339
95% t UCL (assumes normality of ROS data)	0.0512	95% Percentile Bootstrap UCL	0.051
95% BCA Bootstrap UCL	0.0513	95% Bootstrap t UCL	0.0519
95% H-UCL (Log ROS)	0.0515		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.132	95% H-UCL (KM -Log)	0.0518
KM SD (logged)	0.347	95% Critical H Value (KM-Log)	1.828
KM Standard Error of Mean (logged)	0.068		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0575	Mean in Log Scale	-2.961
SD in Original Scale	0.0271	SD in Log Scale	0.463
95% t UCL (Assumes normality)	0.0654	95% H-Stat UCL	0.0672

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Percentile Bootstrap) UCL	0.0522	95% GROS Adjusted Gamma UCL	0.0517
95% Adjusted Gamma KM-UCL	0.0522		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BARIUM T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	34
Number of Detects	33	Number of Non-Detects	5
Number of Distinct Detects	33	Number of Distinct Non-Detects	1
Minimum Detect	0.0236	Minimum Non-Detect	0.2
Maximum Detect	1.03	Maximum Non-Detect	0.2
Variance Detects	0.0593	Percent Non-Detects	13.16%
Mean Detects	0.142	SD Detects	0.243
Median Detects	0.0477	CV Detects	1.711
Skewness Detects	2.785	Kurtosis Detects	7.281
Mean of Logged Detects	-2.681	SD of Logged Detects	1.028

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.518	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.931	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.393	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.154	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.13	Standard Error of Mean	0.0372
SD	0.226	95% KM (BCA) UCL	0.196
95% KM (t) UCL	0.193	95% KM (Percentile Bootstrap) UCL	0.191
95% KM (z) UCL	0.191	95% KM Bootstrap t UCL	0.269
90% KM Chebyshev UCL	0.241	95% KM Chebyshev UCL	0.292
97.5% KM Chebyshev UCL	0.362	99% KM Chebyshev UCL	0.5

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.435	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.785	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.323	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.159	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.81	k star (bias corrected MLE)	0.757
Theta hat (MLE)	0.176	Theta star (bias corrected MLE)	0.188
nu hat (MLE)	53.47	nu star (bias corrected)	49.94
MLE Mean (bias corrected)	0.142	MLE Sd (bias corrected)	0.164

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.33	nu hat (KM)	25.11
Approximate Chi Square Value (25.11, α)	14.7	Adjusted Chi Square Value (25.11, β)	14.37
95% Gamma Approximate KM-UCL (use when n>=50)	0.222	95% Gamma Adjusted KM-UCL (use when n<50)	0.227

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.132
Maximum	1.03	Median	0.0466
SD	0.229	CV	1.737
k hat (MLE)	0.795	k star (bias corrected MLE)	0.75
Theta hat (MLE)	0.166	Theta star (bias corrected MLE)	0.176
nu hat (MLE)	60.44	nu star (bias corrected)	57
MLE Mean (bias corrected)	0.132	MLE Sd (bias corrected)	0.152
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (57.00, α)	40.65	Adjusted Chi Square Value (57.00, β)	40.07
95% Gamma Approximate UCL (use when n>=50)	0.185	95% Gamma Adjusted UCL (use when n<50)	0.188

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.787	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.931	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.239	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.154	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.131	Mean in Log Scale	-2.717
SD in Original Scale	0.228	SD in Log Scale	0.981
95% t UCL (assumes normality of ROS data)	0.194	95% Percentile Bootstrap UCL	0.194
95% BCA Bootstrap UCL	0.213	95% Bootstrap t UCL	0.246
95% H-UCL (Log ROS)	0.157		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.137	Mean in Log Scale	-2.631
SD in Original Scale	0.227	SD in Log Scale	0.965
95% t UCL (Assumes normality)	0.199	95% H-Stat UCL	0.167

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.362

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BERYLLIUM D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	12
Number of Detects	17	Number of Non-Detects	17
Number of Distinct Detects	11	Number of Distinct Non-Detects	2
Minimum Detect	0.0017	Minimum Non-Detect	0.0014
Maximum Detect	0.0069	Maximum Non-Detect	0.005
Variance Detects	2.0601E-6	Percent Non-Detects	50%
Mean Detects	0.00285	SD Detects	0.00144
Median Detects	0.0024	CV Detects	0.503
Skewness Detects	1.895	Kurtosis Detects	3.164
Mean of Logged Detects	-5.948	SD of Logged Detects	0.406

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.738	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.307	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00223	Standard Error of Mean	2.1794E-4
SD	0.0012	95% KM (BCA) UCL	0.00262
95% KM (t) UCL	0.0026	95% KM (Percentile Bootstrap) UCL	0.00261
95% KM (z) UCL	0.00259	95% KM Bootstrap t UCL	0.00274
90% KM Chebyshev UCL	0.00288	95% KM Chebyshev UCL	0.00318
97.5% KM Chebyshev UCL	0.00359	99% KM Chebyshev UCL	0.0044

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.237	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.741	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.261	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.21	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	5.792	k star (bias corrected MLE)	4.809
Theta hat (MLE)	4.9260E-4	Theta star (bias corrected MLE)	5.9328E-4
nu hat (MLE)	196.9	nu star (bias corrected)	163.5
MLE Mean (bias corrected)	0.00285	MLE Sd (bias corrected)	0.0013

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	3.438	nu hat (KM)	233.8
Approximate Chi Square Value (233.76, α)	199.4	Adjusted Chi Square Value (233.76, β)	197.8
95% Gamma Approximate KM-UCL (use when n>=50)	0.00261	95% Gamma Adjusted KM-UCL (use when n<50)	0.00263

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0017	Mean	0.00643
Maximum	0.01	Median	0.00845
SD	0.00376	CV	0.585
k hat (MLE)	2.333	k star (bias corrected MLE)	2.147
Theta hat (MLE)	0.00275	Theta star (bias corrected MLE)	0.00299
nu hat (MLE)	158.6	nu star (bias corrected)	146
MLE Mean (bias corrected)	0.00643	MLE Sd (bias corrected)	0.00439
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (145.98, α)	119.1	Adjusted Chi Square Value (145.98, β)	117.9
95% Gamma Approximate UCL (use when n>=50)	0.00788	95% Gamma Adjusted UCL (use when n<50)	0.00796

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.856	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.892	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.232	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.215	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00209	Mean in Log Scale	-6.329
SD in Original Scale	0.00133	SD in Log Scale	0.56
95% t UCL (assumes normality of ROS data)	0.00248	95% Percentile Bootstrap UCL	0.00249
95% BCA Bootstrap UCL	0.00257	95% Bootstrap t UCL	0.0026
95% H-UCL (Log ROS)	0.00253		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00215	Mean in Log Scale	-6.344
SD in Original Scale	0.00138	SD in Log Scale	0.666
95% t UCL (Assumes normality)	0.00255	95% H-Stat UCL	0.00279

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0026	95% KM (% Bootstrap) UCL	0.00261

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

BERYLLIUM T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	25
Number of Detects	25	Number of Non-Detects	13
Number of Distinct Detects	24	Number of Distinct Non-Detects	2
Minimum Detect	0.0014	Minimum Non-Detect	0.0014
Maximum Detect	0.0096	Maximum Non-Detect	0.005
Variance Detects	5.8113E-6	Percent Non-Detects	34.21%
Mean Detects	0.00373	SD Detects	0.00241
Median Detects	0.0026	CV Detects	0.647
Skewness Detects	1.254	Kurtosis Detects	0.396
Mean of Logged Detects	-5.762	SD of Logged Detects	0.572

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.81	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.267	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.177	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00304	Standard Error of Mean	3.6260E-4
SD	0.00217	95% KM (BCA) UCL	0.00373
95% KM (t) UCL	0.00366	95% KM (Percentile Bootstrap) UCL	0.00367
95% KM (z) UCL	0.00364	95% KM Bootstrap t UCL	0.0038
90% KM Chebyshev UCL	0.00413	95% KM Chebyshev UCL	0.00462
97.5% KM Chebyshev UCL	0.00531	99% KM Chebyshev UCL	0.00665

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.216	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.751	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.208	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.176	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	3.1	k star (bias corrected MLE)	2.755
Theta hat (MLE)	0.0012	Theta star (bias corrected MLE)	0.00135
nu hat (MLE)	155	nu star (bias corrected)	137.7
MLE Mean (bias corrected)	0.00373	MLE Sd (bias corrected)	0.00225

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	1.974	nu hat (KM)	150
Approximate Chi Square Value (150.00, α)	122.7	Adjusted Chi Square Value (150.00, β)	121.7
95% Gamma Approximate KM-UCL (use when n>=50)	0.00372	95% Gamma Adjusted KM-UCL (use when n<50)	0.00375

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0014	Mean	0.00587
Maximum	0.01	Median	0.0054
SD	0.00359	CV	0.611
k hat (MLE)	2.338	k star (bias corrected MLE)	2.171
Theta hat (MLE)	0.00251	Theta star (bias corrected MLE)	0.00271
nu hat (MLE)	177.7	nu star (bias corrected)	165
MLE Mean (bias corrected)	0.00587	MLE Sd (bias corrected)	0.00399
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (165.01, α)	136.3	Adjusted Chi Square Value (165.01, β)	135.2
95% Gamma Approximate UCL (use when n>=50)	0.00711	95% Gamma Adjusted UCL (use when n<50)	0.00717

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.912	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.918	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.168	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.177	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00293	Mean in Log Scale	-6.09
SD in Original Scale	0.00229	SD in Log Scale	0.722
95% t UCL (assumes normality of ROS data)	0.00356	95% Percentile Bootstrap UCL	0.00358
95% BCA Bootstrap UCL	0.00365	95% Bootstrap t UCL	0.00372
95% H-UCL (Log ROS)	0.00377		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.982	95% H-UCL (KM -Log)	0.00358
KM SD (logged)	0.572	95% Critical H Value (KM-Log)	1.972
KM Standard Error of Mean (logged)	0.0975		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00298	Mean in Log Scale	-6.075
SD in Original Scale	0.00227	SD in Log Scale	0.74
95% t UCL (Assumes normality)	0.0036	95% H-Stat UCL	0.00391

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	0.00373

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CADMIUM D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	11
Number of Detects	9	Number of Non-Detects	25
Number of Distinct Detects	9	Number of Distinct Non-Detects	2
Minimum Detect	0.0042	Minimum Non-Detect	0.002
Maximum Detect	0.0522	Maximum Non-Detect	0.004
Variance Detects	3.4990E-4	Percent Non-Detects	73.53%
Mean Detects	0.0175	SD Detects	0.0187
Median Detects	0.0096	CV Detects	1.07
Skewness Detects	1.45	Kurtosis Detects	0.499
Mean of Logged Detects	-4.492	SD of Logged Detects	0.961

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.719	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.29	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0061	Standard Error of Mean	0.00207
SD	0.0114	95% KM (BCA) UCL	0.00948
95% KM (t) UCL	0.00959	95% KM (Percentile Bootstrap) UCL	0.00956
95% KM (z) UCL	0.00949	95% KM Bootstrap t UCL	0.0158
90% KM Chebyshev UCL	0.0123	95% KM Chebyshev UCL	0.0151
97.5% KM Chebyshev UCL	0.019	99% KM Chebyshev UCL	0.0267

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.72	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.739	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.216	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.285	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.263	k star (bias corrected MLE)	0.916
Theta hat (MLE)	0.0138	Theta star (bias corrected MLE)	0.0191
nu hat (MLE)	22.73	nu star (bias corrected)	16.48
MLE Mean (bias corrected)	0.0175	MLE Sd (bias corrected)	0.0183

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.288	nu hat (KM)	19.6
Approximate Chi Square Value (19.60, α)	10.56	Adjusted Chi Square Value (19.60, β)	10.23
95% Gamma Approximate KM-UCL (use when n>=50)	0.0113	95% Gamma Adjusted KM-UCL (use when n<50)	0.0117

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0042	Mean	0.012
Maximum	0.0522	Median	0.01
SD	0.0098	CV	0.818
k hat (MLE)	3.474	k star (bias corrected MLE)	3.187
Theta hat (MLE)	0.00345	Theta star (bias corrected MLE)	0.00376
nu hat (MLE)	236.2	nu star (bias corrected)	216.7
MLE Mean (bias corrected)	0.012	MLE Sd (bias corrected)	0.00671
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (216.72, α)	183.6	Adjusted Chi Square Value (216.72, β)	182.1
95% Gamma Approximate UCL (use when n>=50)	0.0141	95% Gamma Adjusted UCL (use when n<50)	0.0143

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.873	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.829	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.197	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.295	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00505	Mean in Log Scale	-7.247
SD in Original Scale	0.0119	SD in Log Scale	2.145
95% t UCL (assumes normality of ROS data)	0.00851	95% Percentile Bootstrap UCL	0.00878
95% BCA Bootstrap UCL	0.00997	95% Bootstrap t UCL	0.0149
95% H-UCL (Log ROS)	0.0328		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.759	95% H-UCL (KM -Log)	0.00673
KM SD (logged)	0.891	95% Critical H Value (KM-Log)	2.322
KM Standard Error of Mean (logged)	0.162		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00551	Mean in Log Scale	-6.166
SD in Original Scale	0.0118	SD in Log Scale	1.15
95% t UCL (Assumes normality)	0.00892	95% H-Stat UCL	0.00688

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00959	95% KM (Percentile Bootstrap) UCL	0.00956

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CADMIUM T

General Statistics

Total Number of Observations	46	Number of Distinct Observations	24
Number of Detects	22	Number of Non-Detects	24
Number of Distinct Detects	21	Number of Distinct Non-Detects	3
Minimum Detect	5.5000E-4	Minimum Non-Detect	7.6000E-4
Maximum Detect	0.613	Maximum Non-Detect	0.004
Variance Detects	0.0166	Percent Non-Detects	52.17%
Mean Detects	0.0445	SD Detects	0.129
Median Detects	0.00875	CV Detects	2.898
Skewness Detects	4.469	Kurtosis Detects	20.49
Mean of Logged Detects	-4.694	SD of Logged Detects	1.682

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.343	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.384	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0218	Standard Error of Mean	0.0136
SD	0.0898	95% KM (BCA) UCL	0.0485
95% KM (t) UCL	0.0445	95% KM (Percentile Bootstrap) UCL	0.0478
95% KM (z) UCL	0.0441	95% KM Bootstrap t UCL	0.152
90% KM Chebyshev UCL	0.0624	95% KM Chebyshev UCL	0.0808
97.5% KM Chebyshev UCL	0.106	99% KM Chebyshev UCL	0.157

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.589	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.823	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.223	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.198	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.414	k star (bias corrected MLE)	0.388
Theta hat (MLE)	0.107	Theta star (bias corrected MLE)	0.115
nu hat (MLE)	18.21	nu star (bias corrected)	17.06
MLE Mean (bias corrected)	0.0445	MLE Sd (bias corrected)	0.0714

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0588	nu hat (KM)	5.407
Approximate Chi Square Value (5.41, α)	1.345	Adjusted Chi Square Value (5.41, β)	1.281
95% Gamma Approximate KM-UCL (use when n>=50)	0.0875	95% Gamma Adjusted KM-UCL (use when n<50)	0.0919

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	5.5000E-4	Mean	0.0265
Maximum	0.613	Median	0.01
SD	0.0898	CV	3.389
k hat (MLE)	0.607	k star (bias corrected MLE)	0.582
Theta hat (MLE)	0.0437	Theta star (bias corrected MLE)	0.0456
nu hat (MLE)	55.82	nu star (bias corrected)	53.51
MLE Mean (bias corrected)	0.0265	MLE Sd (bias corrected)	0.0347
		Adjusted Level of Significance (β)	0.0448
Approximate Chi Square Value (53.51, α)	37.71	Adjusted Chi Square Value (53.51, β)	37.28
95% Gamma Approximate UCL (use when n>=50)	0.0376	95% Gamma Adjusted UCL (use when n<50)	0.038

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.967	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.911	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.114	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.189	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0218	Mean in Log Scale	-6.203
SD in Original Scale	0.0908	SD in Log Scale	2.067
95% t UCL (assumes normality of ROS data)	0.0443	95% Percentile Bootstrap UCL	0.0475
95% BCA Bootstrap UCL	0.064	95% Bootstrap t UCL	0.147
95% H-UCL (Log ROS)	0.0532		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.937	95% H-UCL (KM -Log)	0.0237
KM SD (logged)	1.677	95% Critical H Value (KM-Log)	3.144
KM Standard Error of Mean (logged)	0.27		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0219	Mean in Log Scale	-5.831
SD in Original Scale	0.0908	SD in Log Scale	1.617
95% t UCL (Assumes normality)	0.0443	95% H-Stat UCL	0.0227

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	0.0808

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	5
Number of Detects	3	Number of Non-Detects	31
Number of Distinct Detects	3	Number of Distinct Non-Detects	2
Minimum Detect	0.0065	Minimum Non-Detect	0.0034
Maximum Detect	0.011	Maximum Non-Detect	0.01
Variance Detects	5.2500E-6	Percent Non-Detects	91.18%
Mean Detects	0.0085	SD Detects	0.00229
Median Detects	0.008	CV Detects	0.27
Skewness Detects	0.935	Kurtosis Detects	N/A
Mean of Logged Detects	-4.791	SD of Logged Detects	0.265

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.964	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.253	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0039	Standard Error of Mean	3.5039E-4
SD	0.0016	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00449	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00448	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00495	95% KM Chebyshev UCL	0.00543
97.5% KM Chebyshev UCL	0.00609	99% KM Chebyshev UCL	0.00739

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	21.27	k star (bias corrected MLE)	N/A
Theta hat (MLE)	3.9954E-4	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	127.6	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	5.955	nu hat (KM)	404.9
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (404.94, α)	359.3	Adjusted Chi Square Value (404.94, β)	357.2
95% Gamma Approximate KM-UCL (use when n>=50)	0.0044	95% Gamma Adjusted KM-UCL (use when n<50)	0.00442

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.985	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.222	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00316	Mean in Log Scale	-5.941
SD in Original Scale	0.00215	SD in Log Scale	0.61
95% t UCL (assumes normality of ROS data)	0.00379	95% Percentile Bootstrap UCL	0.00381
95% BCA Bootstrap UCL	0.00389	95% Bootstrap t UCL	0.00403
95% H-UCL (Log ROS)	0.00393		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.595	95% H-UCL (KM -Log)	0.0042
KM SD (logged)	0.272	95% Critical H Value (KM-Log)	1.784
KM Standard Error of Mean (logged)	0.0604		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00288	Mean in Log Scale	-6.047
SD in Original Scale	0.00225	SD in Log Scale	0.576
95% t UCL (Assumes normality)	0.00354	95% H-Stat UCL	0.00341

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00449	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

CHROMIUM T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	14
Number of Detects	12	Number of Non-Detects	26
Number of Distinct Detects	12	Number of Distinct Non-Detects	2
Minimum Detect	0.0012	Minimum Non-Detect	0.0034
Maximum Detect	2.06	Maximum Non-Detect	0.01
Variance Detects	0.571	Percent Non-Detects	68.42%
Mean Detects	0.577	SD Detects	0.756
Median Detects	0.202	CV Detects	1.31
Skewness Detects	1.107	Kurtosis Detects	-0.22
Mean of Logged Detects	-2.593	SD of Logged Detects	2.799

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.78	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.268	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.183	Standard Error of Mean	0.0824
SD	0.486	95% KM (BCA) UCL	0.32
95% KM (t) UCL	0.322	95% KM (Percentile Bootstrap) UCL	0.318
95% KM (z) UCL	0.319	95% KM Bootstrap t UCL	0.434
90% KM Chebyshev UCL	0.431	95% KM Chebyshev UCL	0.543
97.5% KM Chebyshev UCL	0.698	99% KM Chebyshev UCL	1.004

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.644	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.818	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.233	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.264	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.332	k star (bias corrected MLE)	0.305
Theta hat (MLE)	1.737	Theta star (bias corrected MLE)	1.893
nu hat (MLE)	7.971	nu star (bias corrected)	7.311
MLE Mean (bias corrected)	0.577	MLE Sd (bias corrected)	1.045

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.142	nu hat (KM)	10.8
Approximate Chi Square Value (10.80, α)	4.445	Adjusted Chi Square Value (10.80, β)	4.277
95% Gamma Approximate KM-UCL (use when n>=50)	0.445	95% Gamma Adjusted KM-UCL (use when n<50)	0.463

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0012	Mean	0.189
Maximum	2.06	Median	0.01
SD	0.491	CV	2.598
k hat (MLE)	0.299	k star (bias corrected MLE)	0.293
Theta hat (MLE)	0.631	Theta star (bias corrected MLE)	0.644
nu hat (MLE)	22.76	nu star (bias corrected)	22.29
MLE Mean (bias corrected)	0.189	MLE Sd (bias corrected)	0.349
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (22.29, α)	12.56	Adjusted Chi Square Value (22.29, β)	12.26
95% Gamma Approximate UCL (use when n>=50)	0.335	95% Gamma Adjusted UCL (use when n<50)	0.344

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.879	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.859	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.219	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.256	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.184	Mean in Log Scale	-5.761
SD in Original Scale	0.493	SD in Log Scale	3.207
95% t UCL (assumes normality of ROS data)	0.319	95% Percentile Bootstrap UCL	0.334
95% BCA Bootstrap UCL	0.377	95% Bootstrap t UCL	0.438
95% H-UCL (Log ROS)	10.38		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.197	95% H-UCL (KM -Log)	0.443
KM SD (logged)	2.342	95% Critical H Value (KM-Log)	4.258
KM Standard Error of Mean (logged)	0.427		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.184	Mean in Log Scale	-5.04
SD in Original Scale	0.493	SD in Log Scale	2.301
95% t UCL (Assumes normality)	0.319	95% H-Stat UCL	0.447

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.322	95% GROS Adjusted Gamma UCL	0.344
95% Adjusted Gamma KM-UCL	0.463		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	28
Number of Detects	26	Number of Non-Detects	8
Number of Distinct Detects	26	Number of Distinct Non-Detects	2
Minimum Detect	0.0024	Minimum Non-Detect	0.0023
Maximum Detect	0.0748	Maximum Non-Detect	0.05
Variance Detects	4.0915E-4	Percent Non-Detects	23.53%
Mean Detects	0.0313	SD Detects	0.0202
Median Detects	0.0281	CV Detects	0.646
Skewness Detects	0.68	Kurtosis Detects	-0.128
Mean of Logged Detects	-3.734	SD of Logged Detects	0.852

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.108	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0286	Standard Error of Mean	0.00355
SD	0.0192	95% KM (BCA) UCL	0.0344
95% KM (t) UCL	0.0346	95% KM (Percentile Bootstrap) UCL	0.0344
95% KM (z) UCL	0.0345	95% KM Bootstrap t UCL	0.0353
90% KM Chebyshev UCL	0.0393	95% KM Chebyshev UCL	0.0441
97.5% KM Chebyshev UCL	0.0508	99% KM Chebyshev UCL	0.0639

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.26	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.757	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.122	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.173	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.004	k star (bias corrected MLE)	1.798
Theta hat (MLE)	0.0156	Theta star (bias corrected MLE)	0.0174
nu hat (MLE)	104.2	nu star (bias corrected)	93.51
MLE Mean (bias corrected)	0.0313	MLE Sd (bias corrected)	0.0233

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	2.232	nu hat (KM)	151.8
Approximate Chi Square Value (151.76, α)	124.3	Adjusted Chi Square Value (151.76, β)	123.1
95% Gamma Approximate KM-UCL (use when n>=50)	0.035	95% Gamma Adjusted KM-UCL (use when n<50)	0.0353

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0024	Mean	0.0289
Maximum	0.0748	Median	0.0263
SD	0.0188	CV	0.652
k hat (MLE)	2.173	k star (bias corrected MLE)	2.001
Theta hat (MLE)	0.0133	Theta star (bias corrected MLE)	0.0144
nu hat (MLE)	147.8	nu star (bias corrected)	136.1
MLE Mean (bias corrected)	0.0289	MLE Sd (bias corrected)	0.0204
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (136.07, α)	110.1	Adjusted Chi Square Value (136.07, β)	109
95% Gamma Approximate UCL (use when n>=50)	0.0357	95% Gamma Adjusted UCL (use when n<50)	0.036

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.925	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.169	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0281	Mean in Log Scale	-3.86
SD in Original Scale	0.0193	SD in Log Scale	0.857
95% t UCL (assumes normality of ROS data)	0.0337	95% Percentile Bootstrap UCL	0.0335
95% BCA Bootstrap UCL	0.0337	95% Bootstrap t UCL	0.0341
95% H-UCL (Log ROS)	0.0428		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.87	95% H-UCL (KM -Log)	0.0466
KM SD (logged)	0.922	95% Critical H Value (KM-Log)	2.358
KM Standard Error of Mean (logged)	0.179		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0291	Mean in Log Scale	-3.814
SD in Original Scale	0.0185	SD in Log Scale	0.907
95% t UCL (Assumes normality)	0.0345	95% H-Stat UCL	0.0481

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0346	95% KM (Percentile Bootstrap) UCL	0.0344

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COBALT T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	30
Number of Detects	29	Number of Non-Detects	9
Number of Distinct Detects	28	Number of Distinct Non-Detects	2
Minimum Detect	0.0051	Minimum Non-Detect	0.0023
Maximum Detect	0.0745	Maximum Non-Detect	0.05
Variance Detects	3.4714E-4	Percent Non-Detects	23.68%
Mean Detects	0.032	SD Detects	0.0186
Median Detects	0.0302	CV Detects	0.583
Skewness Detects	0.754	Kurtosis Detects	0.203
Mean of Logged Detects	-3.636	SD of Logged Detects	0.68

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.932	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.12	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.029	Standard Error of Mean	0.00321
SD	0.0183	95% KM (BCA) UCL	0.0343
95% KM (t) UCL	0.0344	95% KM (Percentile Bootstrap) UCL	0.0343
95% KM (z) UCL	0.0343	95% KM Bootstrap t UCL	0.0348
90% KM Chebyshev UCL	0.0387	95% KM Chebyshev UCL	0.043
97.5% KM Chebyshev UCL	0.0491	99% KM Chebyshev UCL	0.0609

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.312	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.754	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.104	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.164	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	2.751	k star (bias corrected MLE)	2.489
Theta hat (MLE)	0.0116	Theta star (bias corrected MLE)	0.0128
nu hat (MLE)	159.5	nu star (bias corrected)	144.4
MLE Mean (bias corrected)	0.032	MLE Sd (bias corrected)	0.0203

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	2.508	nu hat (KM)	190.6
Approximate Chi Square Value (190.63, α)	159.7	Adjusted Chi Square Value (190.63, β)	158.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.0347	95% Gamma Adjusted KM-UCL (use when n<50)	0.0349

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0051	Mean	0.0294
Maximum	0.0745	Median	0.0277
SD	0.0177	CV	0.602
k hat (MLE)	2.739	k star (bias corrected MLE)	2.54
Theta hat (MLE)	0.0108	Theta star (bias corrected MLE)	0.0116
nu hat (MLE)	208.1	nu star (bias corrected)	193
MLE Mean (bias corrected)	0.0294	MLE Sd (bias corrected)	0.0185
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (193.04, α)	161.9	Adjusted Chi Square Value (193.04, β)	160.7
95% Gamma Approximate UCL (use when n>=50)	0.0351	95% Gamma Adjusted UCL (use when n<50)	0.0354

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.147	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0289	Mean in Log Scale	-3.762
SD in Original Scale	0.0181	SD in Log Scale	0.717
95% t UCL (assumes normality of ROS data)	0.0339	95% Percentile Bootstrap UCL	0.0336
95% BCA Bootstrap UCL	0.0339	95% Bootstrap t UCL	0.0343
95% H-UCL (Log ROS)	0.0385		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.823	95% H-UCL (KM -Log)	0.0443
KM SD (logged)	0.874	95% Critical H Value (KM-Log)	2.257
KM Standard Error of Mean (logged)	0.159		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0291	Mean in Log Scale	-3.81
SD in Original Scale	0.0177	SD in Log Scale	0.922
95% t UCL (Assumes normality)	0.0339	95% H-Stat UCL	0.048

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0344	95% KM (Percentile Bootstrap) UCL	0.0343

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER D

General Statistics

Total Number of Observations	31	Number of Distinct Observations	28
Number of Detects	26	Number of Non-Detects	5
Number of Distinct Detects	26	Number of Distinct Non-Detects	2
Minimum Detect	0.0031	Minimum Non-Detect	0.0027
Maximum Detect	121	Maximum Non-Detect	0.025
Variance Detects	868.1	Percent Non-Detects	16.13%
Mean Detects	8.984	SD Detects	29.46
Median Detects	0.0214	CV Detects	3.279
Skewness Detects	3.429	Kurtosis Detects	10.92
Mean of Logged Detects	-2.972	SD of Logged Detects	3.063

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.343	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.456	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	7.536	Standard Error of Mean	4.884
SD	26.66	95% KM (BCA) UCL	18.07
95% KM (t) UCL	15.83	95% KM (Percentile Bootstrap) UCL	15.65
95% KM (z) UCL	15.57	95% KM Bootstrap t UCL	102.8
90% KM Chebyshev UCL	22.19	95% KM Chebyshev UCL	28.82
97.5% KM Chebyshev UCL	38.04	99% KM Chebyshev UCL	56.13

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	4.816	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.949	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.395	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.194	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.149	k star (bias corrected MLE)	0.157
Theta hat (MLE)	60.34	Theta star (bias corrected MLE)	57.09
nu hat (MLE)	7.743	nu star (bias corrected)	8.183
MLE Mean (bias corrected)	8.984	MLE Sd (bias corrected)	22.65

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0799	nu hat (KM)	4.953
Approximate Chi Square Value (4.95, α)	1.13	Adjusted Chi Square Value (4.95, β)	1.034
95% Gamma Approximate KM-UCL (use when n>=50)	33.02	95% Gamma Adjusted KM-UCL (use when n<50)	36.09

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0031	Mean	7.537
Maximum	121	Median	0.0108
SD	27.1	CV	3.596
k hat (MLE)	0.147	k star (bias corrected MLE)	0.154
Theta hat (MLE)	51.37	Theta star (bias corrected MLE)	48.93
nu hat (MLE)	9.097	nu star (bias corrected)	9.55
MLE Mean (bias corrected)	7.537	MLE Sd (bias corrected)	19.2
		Adjusted Level of Significance (β)	0.0413
Approximate Chi Square Value (9.55, α)	3.662	Adjusted Chi Square Value (9.55, β)	3.462
95% Gamma Approximate UCL (use when n>=50)	19.65	95% Gamma Adjusted UCL (use when n<50)	20.79

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.77	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.174	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	7.536	Mean in Log Scale	-3.597
SD in Original Scale	27.11	SD in Log Scale	3.299
95% t UCL (assumes normality of ROS data)	15.8	95% Percentile Bootstrap UCL	16.22
95% BCA Bootstrap UCL	19.94	95% Bootstrap t UCL	102.9
95% H-UCL (Log ROS)	217.9		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	7.537	Mean in Log Scale	-3.343
SD in Original Scale	27.11	SD in Log Scale	2.959
95% t UCL (Assumes normality)	15.8	95% H-Stat UCL	49.91

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	56.13

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

COPPER T

General Statistics

Total Number of Observations	41	Number of Distinct Observations	33
Number of Detects	31	Number of Non-Detects	10
Number of Distinct Detects	30	Number of Distinct Non-Detects	3
Minimum Detect	0.0034	Minimum Non-Detect	9.4000E-4
Maximum Detect	123	Maximum Non-Detect	0.025
Variance Detects	947.4	Percent Non-Detects	24.39%
Mean Detects	13.72	SD Detects	30.78
Median Detects	0.248	CV Detects	2.243
Skewness Detects	2.543	Kurtosis Detects	5.91
Mean of Logged Detects	-1.096	SD of Logged Detects	3.317

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.525	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.379	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.159	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	10.37	Standard Error of Mean	4.283
SD	26.98	95% KM (BCA) UCL	18.74
95% KM (t) UCL	17.59	95% KM (Percentile Bootstrap) UCL	18.03
95% KM (z) UCL	17.42	95% KM Bootstrap t UCL	22.56
90% KM Chebyshev UCL	23.22	95% KM Chebyshev UCL	29.05
97.5% KM Chebyshev UCL	37.12	99% KM Chebyshev UCL	52.99

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.043	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.906	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.249	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.175	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.198	k star (bias corrected MLE)	0.201
Theta hat (MLE)	69.17	Theta star (bias corrected MLE)	68.38
nu hat (MLE)	12.3	nu star (bias corrected)	12.44
MLE Mean (bias corrected)	13.72	MLE Sd (bias corrected)	30.63

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.148	nu hat (KM)	12.13
Approximate Chi Square Value (12.13, α)	5.31	Adjusted Chi Square Value (12.13, β)	5.145
95% Gamma Approximate KM-UCL (use when n>=50)	23.69	95% Gamma Adjusted KM-UCL (use when n<50)	24.45

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0034	Mean	10.38
Maximum	123	Median	0.0449
SD	27.31	CV	2.632
k hat (MLE)	0.175	k star (bias corrected MLE)	0.178
Theta hat (MLE)	59.28	Theta star (bias corrected MLE)	58.14
nu hat (MLE)	14.35	nu star (bias corrected)	14.64
MLE Mean (bias corrected)	10.38	MLE Sd (bias corrected)	24.56
		Adjusted Level of Significance (β)	0.0441
Approximate Chi Square Value (14.64, α)	7.009	Adjusted Chi Square Value (14.64, β)	6.816
95% Gamma Approximate UCL (use when n>=50)	21.67	95% Gamma Adjusted UCL (use when n<50)	22.28

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.926	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.104	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.159	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	10.37	Mean in Log Scale	-2.87
SD in Original Scale	27.32	SD in Log Scale	4.36
95% t UCL (assumes normality of ROS data)	17.56	95% Percentile Bootstrap UCL	18.31
95% BCA Bootstrap UCL	19.79	95% Bootstrap t UCL	23.56
95% H-UCL (Log ROS)	110330		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-2.472	95% H-UCL (KM -Log)	3877
KM SD (logged)	3.748	95% Critical H Value (KM-Log)	6.264
KM Standard Error of Mean (logged)	0.597		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	10.38	Mean in Log Scale	-2.357
SD in Original Scale	27.32	SD in Log Scale	3.682
95% t UCL (Assumes normality)	17.56	95% H-Stat UCL	3007

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	52.99

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

IRON D

General Statistics

Total Number of Observations	35	Number of Distinct Observations	30
Number of Detects	28	Number of Non-Detects	7
Number of Distinct Detects	28	Number of Distinct Non-Detects	2
Minimum Detect	0.0613	Minimum Non-Detect	0.0522
Maximum Detect	53	Maximum Non-Detect	0.1
Variance Detects	130.1	Percent Non-Detects	20%
Mean Detects	8.582	SD Detects	11.41
Median Detects	4.96	CV Detects	1.329
Skewness Detects	2.435	Kurtosis Detects	7.752
Mean of Logged Detects	1.024	SD of Logged Detects	1.864

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.733	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.228	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	6.876	Standard Error of Mean	1.822
SD	10.58	95% KM (BCA) UCL	10.18
95% KM (t) UCL	9.957	95% KM (Percentile Bootstrap) UCL	10.1
95% KM (z) UCL	9.873	95% KM Bootstrap t UCL	11.55
90% KM Chebyshev UCL	12.34	95% KM Chebyshev UCL	14.82
97.5% KM Chebyshev UCL	18.25	99% KM Chebyshev UCL	25

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.404	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.805	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.112	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.174	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.555	k star (bias corrected MLE)	0.52
Theta hat (MLE)	15.45	Theta star (bias corrected MLE)	16.51
nu hat (MLE)	31.1	nu star (bias corrected)	29.1
MLE Mean (bias corrected)	8.582	MLE Sd (bias corrected)	11.9

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.422	nu hat (KM)	29.55
Approximate Chi Square Value (29.55, α)	18.14	Adjusted Chi Square Value (29.55, β)	17.71
95% Gamma Approximate KM-UCL (use when n>=50)	11.2	95% Gamma Adjusted KM-UCL (use when n<50)	11.47

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	6.867
Maximum	53	Median	1.4
SD	10.74	CV	1.564
k hat (MLE)	0.334	k star (bias corrected MLE)	0.324
Theta hat (MLE)	20.56	Theta star (bias corrected MLE)	21.17
nu hat (MLE)	23.38	nu star (bias corrected)	22.71
MLE Mean (bias corrected)	6.867	MLE Sd (bias corrected)	12.06
		Adjusted Level of Significance (β)	0.0425
Approximate Chi Square Value (22.71, α)	12.87	Adjusted Chi Square Value (22.71, β)	12.52
95% Gamma Approximate UCL (use when n>=50)	12.12	95% Gamma Adjusted UCL (use when n<50)	12.46

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.936	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.924	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.173	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.167	Detected Data Not Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	6.877	Mean in Log Scale	0.2
SD in Original Scale	10.74	SD in Log Scale	2.383
95% t UCL (assumes normality of ROS data)	9.946	95% Percentile Bootstrap UCL	9.947
95% BCA Bootstrap UCL	10.92	95% Bootstrap t UCL	11.23
95% H-UCL (Log ROS)	131.2		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	0.232	95% H-UCL (KM -Log)	92.06
KM SD (logged)	2.279	95% Critical H Value (KM-Log)	4.332
KM Standard Error of Mean (logged)	0.392		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	6.871	Mean in Log Scale	0.109
SD in Original Scale	10.74	SD in Log Scale	2.494
95% t UCL (Assumes normality)	9.941	95% H-Stat UCL	185.1

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	14.82	95% GROS Adjusted Gamma UCL	12.46
95% Adjusted Gamma KM-UCL	11.47		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

IRON T

General Statistics

Total Number of Observations	39	Number of Distinct Observations	38
Number of Detects	37	Number of Non-Detects	2
Number of Distinct Detects	37	Number of Distinct Non-Detects	1
Minimum Detect	0.0604	Minimum Non-Detect	0.0522
Maximum Detect	770	Maximum Non-Detect	0.0522
Variance Detects	30560	Percent Non-Detects	5.128%
Mean Detects	73.78	SD Detects	174.8
Median Detects	7.78	CV Detects	2.369
Skewness Detects	2.921	Kurtosis Detects	8.147
Mean of Logged Detects	1.896	SD of Logged Detects	2.538

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.48	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.409	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	70	Standard Error of Mean	27.39
SD	168.7	95% KM (BCA) UCL	122.6
95% KM (t) UCL	116.2	95% KM (Percentile Bootstrap) UCL	116.8
95% KM (z) UCL	115.1	95% KM Bootstrap t UCL	154.7
90% KM Chebyshev UCL	152.2	95% KM Chebyshev UCL	189.4
97.5% KM Chebyshev UCL	241.1	99% KM Chebyshev UCL	342.6

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	1.85	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.863	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.225	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.158	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.289	k star (bias corrected MLE)	0.283
Theta hat (MLE)	255.7	Theta star (bias corrected MLE)	260.6
nu hat (MLE)	21.35	nu star (bias corrected)	20.95
MLE Mean (bias corrected)	73.78	MLE Sd (bias corrected)	138.7

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.172	nu hat (KM)	13.42
Approximate Chi Square Value (13.42, α)	6.179	Adjusted Chi Square Value (13.42, β)	5.985
95% Gamma Approximate KM-UCL (use when n>=50)	152.1	95% Gamma Adjusted KM-UCL (use when n<50)	157

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	70
Maximum	770	Median	6.53
SD	170.9	CV	2.442
k hat (MLE)	0.262	k star (bias corrected MLE)	0.259
Theta hat (MLE)	266.8	Theta star (bias corrected MLE)	270
nu hat (MLE)	20.47	nu star (bias corrected)	20.23
MLE Mean (bias corrected)	70	MLE Sd (bias corrected)	137.5
		Adjusted Level of Significance (β)	0.0437
Approximate Chi Square Value (20.23, α)	11.02	Adjusted Chi Square Value (20.23, β)	10.75
95% Gamma Approximate UCL (use when n>=50)	128.5	95% Gamma Adjusted UCL (use when n<50)	131.7

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.953	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.936	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.117	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.146	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	70	Mean in Log Scale	1.584
SD in Original Scale	170.9	SD in Log Scale	2.821
95% t UCL (assumes normality of ROS data)	116.2	95% Percentile Bootstrap UCL	117.5
95% BCA Bootstrap UCL	136.4	95% Bootstrap t UCL	152.2
95% H-UCL (Log ROS)	2598		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	1.647	95% H-UCL (KM -Log)	1414
KM SD (logged)	2.663	95% Critical H Value (KM-Log)	4.773
KM Standard Error of Mean (logged)	0.432		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	70	Mean in Log Scale	1.612
SD in Original Scale	170.9	SD in Log Scale	2.763
95% t UCL (Assumes normality)	116.2	95% H-Stat UCL	2080

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	342.6

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

LEAD D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	10
Number of Detects	8	Number of Non-Detects	26
Number of Distinct Detects	8	Number of Distinct Non-Detects	2
Minimum Detect	0.0032	Minimum Non-Detect	0.003
Maximum Detect	0.0959	Maximum Non-Detect	0.0069
Variance Detects	0.00101	Percent Non-Detects	76.47%
Mean Detects	0.0239	SD Detects	0.0318
Median Detects	0.009	CV Detects	1.33
Skewness Detects	2.082	Kurtosis Detects	4.315
Mean of Logged Detects	-4.377	SD of Logged Detects	1.174

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.703	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.299	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00804	Standard Error of Mean	0.0031
SD	0.0169	95% KM (BCA) UCL	0.0134
95% KM (t) UCL	0.0133	95% KM (Percentile Bootstrap) UCL	0.0134
95% KM (z) UCL	0.0131	95% KM Bootstrap t UCL	0.0281
90% KM Chebyshev UCL	0.0173	95% KM Chebyshev UCL	0.0216
97.5% KM Chebyshev UCL	0.0274	99% KM Chebyshev UCL	0.0389

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.517	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.739	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.272	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.302	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.908	k star (bias corrected MLE)	0.651
Theta hat (MLE)	0.0263	Theta star (bias corrected MLE)	0.0368
nu hat (MLE)	14.52	nu star (bias corrected)	10.41
MLE Mean (bias corrected)	0.0239	MLE Sd (bias corrected)	0.0296

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.226	nu hat (KM)	15.39
Approximate Chi Square Value (15.39, α)	7.534	Adjusted Chi Square Value (15.39, β)	7.262
95% Gamma Approximate KM-UCL (use when n>=50)	0.0164	95% Gamma Adjusted KM-UCL (use when n<50)	0.017

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0032	Mean	0.0133
Maximum	0.0959	Median	0.01
SD	0.0158	CV	1.192
k hat (MLE)	2.332	k star (bias corrected MLE)	2.146
Theta hat (MLE)	0.00569	Theta star (bias corrected MLE)	0.00619
nu hat (MLE)	158.6	nu star (bias corrected)	145.9
MLE Mean (bias corrected)	0.0133	MLE Sd (bias corrected)	0.00906
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (145.93, α)	119	Adjusted Chi Square Value (145.93, β)	117.8
95% Gamma Approximate UCL (use when n>=50)	0.0163	95% Gamma Adjusted UCL (use when n<50)	0.0164

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.933	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.212	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00663	Mean in Log Scale	-6.714
SD in Original Scale	0.0176	SD in Log Scale	1.883
95% t UCL (assumes normality of ROS data)	0.0117	95% Percentile Bootstrap UCL	0.0121
95% BCA Bootstrap UCL	0.0146	95% Bootstrap t UCL	0.0276
95% H-UCL (Log ROS)	0.0239		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.435	95% H-UCL (KM -Log)	0.00813
KM SD (logged)	0.795	95% Critical H Value (KM-Log)	2.216
KM Standard Error of Mean (logged)	0.149		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00809	Mean in Log Scale	-5.439
SD in Original Scale	0.0172	SD in Log Scale	0.84
95% t UCL (Assumes normality)	0.0131	95% H-Stat UCL	0.00861

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.0133	95% KM (Percentile Bootstrap) UCL	0.0134

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

LEAD T

General Statistics

Total Number of Observations	43	Number of Distinct Observations	23
Number of Detects	19	Number of Non-Detects	24
Number of Distinct Detects	19	Number of Distinct Non-Detects	4
Minimum Detect	0.002	Minimum Non-Detect	0.0022
Maximum Detect	0.83	Maximum Non-Detect	0.01
Variance Detects	0.0449	Percent Non-Detects	55.81%
Mean Detects	0.14	SD Detects	0.212
Median Detects	0.027	CV Detects	1.515
Skewness Detects	2.248	Kurtosis Detects	5.669
Mean of Logged Detects	-3.27	SD of Logged Detects	1.859

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.697	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.258	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0635	Standard Error of Mean	0.024
SD	0.153	95% KM (BCA) UCL	0.108
95% KM (t) UCL	0.104	95% KM (Percentile Bootstrap) UCL	0.105
95% KM (z) UCL	0.103	95% KM Bootstrap t UCL	0.138
90% KM Chebyshev UCL	0.135	95% KM Chebyshev UCL	0.168
97.5% KM Chebyshev UCL	0.213	99% KM Chebyshev UCL	0.302

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.592	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.805	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.181	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.21	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.489	k star (bias corrected MLE)	0.447
Theta hat (MLE)	0.286	Theta star (bias corrected MLE)	0.313
nu hat (MLE)	18.58	nu star (bias corrected)	16.98
MLE Mean (bias corrected)	0.14	MLE Sd (bias corrected)	0.209

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.172	nu hat (KM)	14.79
Approximate Chi Square Value (14.79, α)	7.112	Adjusted Chi Square Value (14.79, β)	6.927
95% Gamma Approximate KM-UCL (use when n>=50)	0.132	95% Gamma Adjusted KM-UCL (use when n<50)	0.135

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.002	Mean	0.0674
Maximum	0.83	Median	0.01
SD	0.153	CV	2.275
k hat (MLE)	0.484	k star (bias corrected MLE)	0.466
Theta hat (MLE)	0.139	Theta star (bias corrected MLE)	0.145
nu hat (MLE)	41.65	nu star (bias corrected)	40.07
MLE Mean (bias corrected)	0.0674	MLE Sd (bias corrected)	0.0988
		Adjusted Level of Significance (β)	0.0444
Approximate Chi Square Value (40.07, α)	26.57	Adjusted Chi Square Value (40.07, β)	26.19
95% Gamma Approximate UCL (use when n>=50)	0.102	95% Gamma Adjusted UCL (use when n<50)	0.103

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.948	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.901	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.151	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.203	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0635	Mean in Log Scale	-5.102
SD in Original Scale	0.155	SD in Log Scale	2.306
95% t UCL (assumes normality of ROS data)	0.103	95% Percentile Bootstrap UCL	0.106
95% BCA Bootstrap UCL	0.118	95% Bootstrap t UCL	0.14
95% H-UCL (Log ROS)	0.375		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.735	95% H-UCL (KM -Log)	0.112
KM SD (logged)	1.794	95% Critical H Value (KM-Log)	3.374
KM Standard Error of Mean (logged)	0.294		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0637	Mean in Log Scale	-4.638
SD in Original Scale	0.155	SD in Log Scale	1.746
95% t UCL (Assumes normality)	0.103	95% H-Stat UCL	0.108

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.104	95% GROS Adjusted Gamma UCL	0.103
95% Adjusted Gamma KM-UCL	0.135		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MANGANESE D

General Statistics

Total Number of Observations	35	Number of Distinct Observations	35
		Number of Missing Observations	0
Minimum	0.0244	Mean	0.385
Maximum	0.893	Median	0.377
SD	0.216	Std. Error of Mean	0.0365
Coefficient of Variation	0.561	Skewness	0.421

Normal GOF Test

Shapiro Wilk Test Statistic	0.943	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.122	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.15	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.446	95% Adjusted-CLT UCL (Chen-1995)	0.448
		95% Modified-t UCL (Johnson-1978)	0.447

Gamma GOF Test

A-D Test Statistic	1.013	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.757	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.175	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.15	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	2.4	k star (bias corrected MLE)	2.213
Theta hat (MLE)	0.16	Theta star (bias corrected MLE)	0.174
nu hat (MLE)	168	nu star (bias corrected)	154.9
MLE Mean (bias corrected)	0.385	MLE Sd (bias corrected)	0.259
		Approximate Chi Square Value (0.05)	127.2
Adjusted Level of Significance	0.0425	Adjusted Chi Square Value	126

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.469	95% Adjusted Gamma UCL (use when n<50)	0.473

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.878	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.934	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.207	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.15	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-3.713	Mean of logged Data	-1.178
Maximum of Logged Data	-0.113	SD of logged Data	0.785

Assuming Lognormal Distribution

95% H-UCL	0.564	90% Chebyshev (MVUE) UCL	0.596
95% Chebyshev (MVUE) UCL	0.679	97.5% Chebyshev (MVUE) UCL	0.793
99% Chebyshev (MVUE) UCL	1.018		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.445	95% Jackknife UCL	0.446
95% Standard Bootstrap UCL	0.443	95% Bootstrap-t UCL	0.449
95% Hall's Bootstrap UCL	0.452	95% Percentile Bootstrap UCL	0.447
95% BCA Bootstrap UCL	0.45		
90% Chebyshev(Mean, Sd) UCL	0.494	95% Chebyshev(Mean, Sd) UCL	0.544
97.5% Chebyshev(Mean, Sd) UCL	0.613	99% Chebyshev(Mean, Sd) UCL	0.748

Suggested UCL to Use

95% Student's-t UCL 0.446

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MANGANESE T

General Statistics

Total Number of Observations	39	Number of Distinct Observations	39
		Number of Missing Observations	0
Minimum	0.0246	Mean	0.494
Maximum	1.91	Median	0.45
SD	0.385	Std. Error of Mean	0.0616
Coefficient of Variation	0.779	Skewness	2.326

Normal GOF Test

Shapiro Wilk Test Statistic	0.76	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.939	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.253	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.142	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	0.598	95% Adjusted-CLT UCL (Chen-1995)	0.62
		95% Modified-t UCL (Johnson-1978)	0.602

Gamma GOF Test

A-D Test Statistic	1.143	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.76	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.159	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.143	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	1.951	k star (bias corrected MLE)	1.818
Theta hat (MLE)	0.253	Theta star (bias corrected MLE)	0.272
nu hat (MLE)	152.2	nu star (bias corrected)	141.8
MLE Mean (bias corrected)	0.494	MLE Sd (bias corrected)	0.366
		Approximate Chi Square Value (0.05)	115.3
Adjusted Level of Significance	0.0437	Adjusted Chi Square Value	114.4

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.608	95% Adjusted Gamma UCL (use when n<50)	0.613

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.904	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.939	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.199	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.142	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	-3.705	Mean of logged Data	-0.983
Maximum of Logged Data	0.647	SD of logged Data	0.836

Assuming Lognormal Distribution

95% H-UCL	0.717	90% Chebyshev (MVUE) UCL	0.761
95% Chebyshev (MVUE) UCL	0.868	97.5% Chebyshev (MVUE) UCL	1.016
99% Chebyshev (MVUE) UCL	1.307		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	0.595	95% Jackknife UCL	0.598
95% Standard Bootstrap UCL	0.595	95% Bootstrap-t UCL	0.657
95% Hall's Bootstrap UCL	0.783	95% Percentile Bootstrap UCL	0.601
95% BCA Bootstrap UCL	0.617		
90% Chebyshev(Mean, Sd) UCL	0.679	95% Chebyshev(Mean, Sd) UCL	0.763
97.5% Chebyshev(Mean, Sd) UCL	0.879	99% Chebyshev(Mean, Sd) UCL	1.107

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 0.763

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

MERCURY T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	8
Number of Detects	4	Number of Non-Detects	34
Number of Distinct Detects	4	Number of Distinct Non-Detects	4
Minimum Detect	6.6000E-4	Minimum Non-Detect	2.6000E-5
Maximum Detect	0.01	Maximum Non-Detect	3.1000E-4
Variance Detects	2.0610E-5	Percent Non-Detects	89.47%
Mean Detects	0.00322	SD Detects	0.00454
Median Detects	0.0011	CV Detects	1.412
Skewness Detects	1.957	Kurtosis Detects	3.847
Mean of Logged Detects	-6.424	SD of Logged Detects	1.269

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.694	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.397	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	3.6168E-4	Standard Error of Mean	3.0116E-4
SD	0.00161	95% KM (BCA) UCL	N/A
95% KM (t) UCL	8.6978E-4	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	8.5705E-4	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00127	95% KM Chebyshev UCL	0.00167
97.5% KM Chebyshev UCL	0.00224	99% KM Chebyshev UCL	0.00336

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.599	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.669	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.348	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.404	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.86	k star (bias corrected MLE)	0.382
Theta hat (MLE)	0.00374	Theta star (bias corrected MLE)	0.00842
nu hat (MLE)	6.878	nu star (bias corrected)	3.053
MLE Mean (bias corrected)	0.00322	MLE Sd (bias corrected)	0.0052

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0506	nu hat (KM)	3.846
Approximate Chi Square Value (3.85, α)	0.662	Adjusted Chi Square Value (3.85, β)	0.612
95% Gamma Approximate KM-UCL (use when n>=50)	0.0021	95% Gamma Adjusted KM-UCL (use when n<50)	0.00227

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	6.6000E-4	Mean	0.00929
Maximum	0.01	Median	0.01
SD	0.00247	CV	0.267
k hat (MLE)	4.421	k star (bias corrected MLE)	4.09
Theta hat (MLE)	0.0021	Theta star (bias corrected MLE)	0.00227
nu hat (MLE)	336	nu star (bias corrected)	310.8
MLE Mean (bias corrected)	0.00929	MLE Sd (bias corrected)	0.00459
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (310.82, α)	271	Adjusted Chi Square Value (310.82, β)	269.4
95% Gamma Approximate UCL (use when n>=50)	0.0107	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.825	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.275	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	3.4750E-4	Mean in Log Scale	-13.54
SD in Original Scale	0.00163	SD in Log Scale	3.841
95% t UCL (assumes normality of ROS data)	7.9429E-4	95% Percentile Bootstrap UCL	8.5894E-4
95% BCA Bootstrap UCL	0.00136	95% Bootstrap t UCL	0.00369
95% H-UCL (Log ROS)	0.138		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-10.12	95% H-UCL (KM -Log)	1.7500E-4
KM SD (logged)	1.318	95% Critical H Value (KM-Log)	2.785
KM Standard Error of Mean (logged)	0.247		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	3.7687E-4	Mean in Log Scale	-9.913
SD in Original Scale	0.00163	SD in Log Scale	1.413
95% t UCL (Assumes normality)	8.2203E-4	95% H-Stat UCL	2.6410E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	8.6978E-4	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NICKEL D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	31
Number of Detects	29	Number of Non-Detects	5
Number of Distinct Detects	29	Number of Distinct Non-Detects	2
Minimum Detect	0.0042	Minimum Non-Detect	0.003
Maximum Detect	0.608	Maximum Non-Detect	0.04
Variance Detects	0.02	Percent Non-Detects	14.71%
Mean Detects	0.0726	SD Detects	0.141
Median Detects	0.0344	CV Detects	1.946
Skewness Detects	3.51	Kurtosis Detects	11.42
Mean of Logged Detects	-3.315	SD of Logged Detects	1.004

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.401	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.41	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0648	Standard Error of Mean	0.0227
SD	0.13	95% KM (BCA) UCL	0.103
95% KM (t) UCL	0.103	95% KM (Percentile Bootstrap) UCL	0.102
95% KM (z) UCL	0.102	95% KM Bootstrap t UCL	0.303
90% KM Chebyshev UCL	0.133	95% KM Chebyshev UCL	0.164
97.5% KM Chebyshev UCL	0.206	99% KM Chebyshev UCL	0.29

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.449	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.78	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.304	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.168	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.85	k star (bias corrected MLE)	0.785
Theta hat (MLE)	0.0855	Theta star (bias corrected MLE)	0.0925
nu hat (MLE)	49.3	nu star (bias corrected)	45.54
MLE Mean (bias corrected)	0.0726	MLE Sd (bias corrected)	0.082

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.249	nu hat (KM)	16.96
Approximate Chi Square Value (16.96, α)	8.643	Adjusted Chi Square Value (16.96, β)	8.349
95% Gamma Approximate KM-UCL (use when n>=50)	0.127	95% Gamma Adjusted KM-UCL (use when n<50)	0.132

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0042	Mean	0.064
Maximum	0.608	Median	0.0314
SD	0.132	CV	2.061
k hat (MLE)	0.818	k star (bias corrected MLE)	0.765
Theta hat (MLE)	0.0783	Theta star (bias corrected MLE)	0.0837
nu hat (MLE)	55.6	nu star (bias corrected)	52.03
MLE Mean (bias corrected)	0.064	MLE Sd (bias corrected)	0.0732
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (52.03, α)	36.46	Adjusted Chi Square Value (52.03, β)	35.81
95% Gamma Approximate UCL (use when n>=50)	0.0914	95% Gamma Adjusted UCL (use when n<50)	0.093

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.871	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.194	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0645	Mean in Log Scale	-3.461
SD in Original Scale	0.132	SD in Log Scale	1.034
95% t UCL (assumes normality of ROS data)	0.103	95% Percentile Bootstrap UCL	0.101
95% BCA Bootstrap UCL	0.116	95% Bootstrap t UCL	0.308
95% H-UCL (Log ROS)	0.084		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0644	Mean in Log Scale	-3.479
SD in Original Scale	0.132	SD in Log Scale	1.085
95% t UCL (Assumes normality)	0.103	95% H-Stat UCL	0.09

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.206

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

NICKEL T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	34
Number of Detects	32	Number of Non-Detects	6
Number of Distinct Detects	32	Number of Distinct Non-Detects	2
Minimum Detect	0.0052	Minimum Non-Detect	0.003
Maximum Detect	0.595	Maximum Non-Detect	0.04
Variance Detects	0.0249	Percent Non-Detects	15.79%
Mean Detects	0.103	SD Detects	0.158
Median Detects	0.0385	CV Detects	1.533
Skewness Detects	2.309	Kurtosis Detects	4.257
Mean of Logged Detects	-3.014	SD of Logged Detects	1.15

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.585	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.93	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.349	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.157	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0899	Standard Error of Mean	0.0241
SD	0.146	95% KM (BCA) UCL	0.129
95% KM (t) UCL	0.13	95% KM (Percentile Bootstrap) UCL	0.133
95% KM (z) UCL	0.129	95% KM Bootstrap t UCL	0.154
90% KM Chebyshev UCL	0.162	95% KM Chebyshev UCL	0.195
97.5% KM Chebyshev UCL	0.24	99% KM Chebyshev UCL	0.329

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.329	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.785	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.228	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.161	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.8	k star (bias corrected MLE)	0.746
Theta hat (MLE)	0.129	Theta star (bias corrected MLE)	0.138
nu hat (MLE)	51.22	nu star (bias corrected)	47.75
MLE Mean (bias corrected)	0.103	MLE Sd (bias corrected)	0.119

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.379	nu hat (KM)	28.81
Approximate Chi Square Value (28.81, α)	17.56	Adjusted Chi Square Value (28.81, β)	17.19
95% Gamma Approximate KM-UCL (use when n>=50)	0.147	95% Gamma Adjusted KM-UCL (use when n<50)	0.151

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0052	Mean	0.0889
Maximum	0.595	Median	0.0334
SD	0.148	CV	1.668
k hat (MLE)	0.737	k star (bias corrected MLE)	0.696
Theta hat (MLE)	0.121	Theta star (bias corrected MLE)	0.128
nu hat (MLE)	55.98	nu star (bias corrected)	52.9
MLE Mean (bias corrected)	0.0889	MLE Sd (bias corrected)	0.107
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (52.90, α)	37.19	Adjusted Chi Square Value (52.90, β)	36.64
95% Gamma Approximate UCL (use when n>=50)	0.127	95% Gamma Adjusted UCL (use when n<50)	0.128

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.935	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.93	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.141	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.157	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.0897	Mean in Log Scale	-3.217
SD in Original Scale	0.148	SD in Log Scale	1.206
95% t UCL (assumes normality of ROS data)	0.13	95% Percentile Bootstrap UCL	0.133
95% BCA Bootstrap UCL	0.142	95% Bootstrap t UCL	0.151
95% H-UCL (Log ROS)	0.14		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-3.213	95% H-UCL (KM -Log)	0.138
KM SD (logged)	1.196	95% Critical H Value (KM-Log)	2.63
KM Standard Error of Mean (logged)	0.203		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0894	Mean in Log Scale	-3.224
SD in Original Scale	0.148	SD in Log Scale	1.225
95% t UCL (Assumes normality)	0.13	95% H-Stat UCL	0.144

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.24

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

SELENIUM T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	7
Number of Detects	3	Number of Non-Detects	35
Number of Distinct Detects	3	Number of Distinct Non-Detects	4
Minimum Detect	0.0138	Minimum Non-Detect	0.005
Maximum Detect	0.0278	Maximum Non-Detect	0.0094
Variance Detects	6.4413E-5	Percent Non-Detects	92.11%
Mean Detects	0.0185	SD Detects	0.00803
Median Detects	0.014	CV Detects	0.433
Skewness Detects	1.731	Kurtosis Detects	N/A
Mean of Logged Detects	-4.045	SD of Logged Detects	0.4

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.761	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.381	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00607	Standard Error of Mean	8.1211E-4
SD	0.00409	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00744	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.0074	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.0085	95% KM Chebyshev UCL	0.00961
97.5% KM Chebyshev UCL	0.0111	99% KM Chebyshev UCL	0.0141

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	8.99	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.00206	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	53.94	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	2.204	nu hat (KM)	167.5
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (167.51, α)	138.6	Adjusted Chi Square Value (167.51, β)	137.5
95% Gamma Approximate KM-UCL (use when n>=50)	0.00734	95% Gamma Adjusted KM-UCL (use when n<50)	0.00739

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.765	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.379	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00301	Mean in Log Scale	-6.675
SD in Original Scale	0.00523	SD in Log Scale	1.31
95% t UCL (assumes normality of ROS data)	0.00444	95% Percentile Bootstrap UCL	0.00452
95% BCA Bootstrap UCL	0.00497	95% Bootstrap t UCL	0.0058
95% H-UCL (Log ROS)	0.00542		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.199	95% H-UCL (KM -Log)	0.00652
KM SD (logged)	0.35	95% Critical H Value (KM-Log)	1.815
KM Standard Error of Mean (logged)	0.0696		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00521	Mean in Log Scale	-5.408
SD in Original Scale	0.00443	SD in Log Scale	0.467
95% t UCL (Assumes normality)	0.00643	95% H-Stat UCL	0.00578

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00744	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

SILVER T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	6
Number of Detects	3	Number of Non-Detects	35
Number of Distinct Detects	3	Number of Distinct Non-Detects	4
Minimum Detect	0.0023	Minimum Non-Detect	9.1000E-4
Maximum Detect	0.021	Maximum Non-Detect	0.01
Variance Detects	1.1472E-4	Percent Non-Detects	92.11%
Mean Detects	0.00863	SD Detects	0.0107
Median Detects	0.0026	CV Detects	1.241
Skewness Detects	1.731	Kurtosis Detects	N/A
Mean of Logged Detects	-5.297	SD of Logged Detects	1.243

Warning: Data set has only 3 Detected Values.

This is not enough to compute meaningful or reliable statistics and estimates.

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.762	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.38	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Normal at 5% Significance Level

Detected Data appear Approximate Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00154	Standard Error of Mean	6.4096E-4
SD	0.00322	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00262	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00259	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00346	95% KM Chebyshev UCL	0.00433
97.5% KM Chebyshev UCL	0.00554	99% KM Chebyshev UCL	0.00791

Gamma GOF Tests on Detected Observations Only

Not Enough Data to Perform GOF Test

Gamma Statistics on Detected Data Only

k hat (MLE)	1.053	k star (bias corrected MLE)	N/A
Theta hat (MLE)	0.0082	Theta star (bias corrected MLE)	N/A
nu hat (MLE)	6.321	nu star (bias corrected)	N/A
MLE Mean (bias corrected)	N/A	MLE Sd (bias corrected)	N/A

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.227	nu hat (KM)	17.26
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (17.26, α)	8.859	Adjusted Chi Square Value (17.26, β)	8.609
95% Gamma Approximate KM-UCL (use when n>=50)	0.00299	95% Gamma Adjusted KM-UCL (use when n<50)	0.00308

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.791	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.767	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.368	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.512	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	7.4677E-4	Mean in Log Scale	-10.99
SD in Original Scale	0.00342	SD in Log Scale	2.841
95% t UCL (assumes normality of ROS data)	0.00168	95% Percentile Bootstrap UCL	0.00184
95% BCA Bootstrap UCL	0.0025	95% Bootstrap t UCL	0.0064
95% H-UCL (Log ROS)	0.01		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-6.857	95% H-UCL (KM -Log)	0.00146
KM SD (logged)	0.548	95% Critical H Value (KM-Log)	1.952
KM Standard Error of Mean (logged)	0.111		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0023	Mean in Log Scale	-6.476
SD in Original Scale	0.00344	SD in Log Scale	0.754
95% t UCL (Assumes normality)	0.00324	95% H-Stat UCL	0.00267

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00262	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

THALLIUM T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	8
Number of Detects	4	Number of Non-Detects	34
Number of Distinct Detects	4	Number of Distinct Non-Detects	4
Minimum Detect	0.0104	Minimum Non-Detect	0.0042
Maximum Detect	0.0206	Maximum Non-Detect	0.014
Variance Detects	2.8600E-5	Percent Non-Detects	89.47%
Mean Detects	0.0153	SD Detects	0.00535
Median Detects	0.0151	CV Detects	0.35
Skewness Detects	0.0481	Kurtosis Detects	-5.599
Mean of Logged Detects	-4.228	SD of Logged Detects	0.36

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.819	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.289	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00615	Standard Error of Mean	0.00103
SD	0.00406	95% KM (BCA) UCL	N/A
95% KM (t) UCL	0.00788	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	0.00784	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	0.00923	95% KM Chebyshev UCL	0.0106
97.5% KM Chebyshev UCL	0.0126	99% KM Chebyshev UCL	0.0164

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.546	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.657	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.32	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.395	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	10.61	k star (bias corrected MLE)	2.818
Theta hat (MLE)	0.00144	Theta star (bias corrected MLE)	0.00543
nu hat (MLE)	84.86	nu star (bias corrected)	22.55
MLE Mean (bias corrected)	0.0153	MLE Sd (bias corrected)	0.00911

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	2.289	nu hat (KM)	173.9
Approximate Chi Square Value (173.93, α)	144.4	Adjusted Chi Square Value (173.93, β)	143.3
95% Gamma Approximate KM-UCL (use when n>=50)	0.0074	95% Gamma Adjusted KM-UCL (use when n<50)	0.00746

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.0107
Maximum	0.0206	Median	0.01
SD	0.00229	CV	0.214
k hat (MLE)	32.86	k star (bias corrected MLE)	30.28
Theta hat (MLE)	3.2515E-4	Theta star (bias corrected MLE)	3.5281E-4
nu hat (MLE)	2497	nu star (bias corrected)	2302
MLE Mean (bias corrected)	0.0107	MLE Sd (bias corrected)	0.00194
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (N/A, α)	2191	Adjusted Chi Square Value (N/A, β)	2187
95% Gamma Approximate UCL (use when n>=50)	0.0112	95% Gamma Adjusted UCL (use when n<50)	N/A

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.816	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.283	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.443	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00637	Mean in Log Scale	-5.24
SD in Original Scale	0.00431	SD in Log Scale	0.604
95% t UCL (assumes normality of ROS data)	0.00755	95% Percentile Bootstrap UCL	0.00755
95% BCA Bootstrap UCL	0.00775	95% Bootstrap t UCL	0.00789
95% H-UCL (Log ROS)	0.00776		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.23	95% H-UCL (KM -Log)	0.00691
KM SD (logged)	0.468	95% Critical H Value (KM-Log)	1.892
KM Standard Error of Mean (logged)	0.132		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00685	Mean in Log Scale	-5.119
SD in Original Scale	0.0038	SD in Log Scale	0.545
95% t UCL (Assumes normality)	0.00789	95% H-Stat UCL	0.00826

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00788	95% KM (Percentile Bootstrap) UCL	N/A

Warning: One or more Recommended UCL(s) not available!

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM D

General Statistics

Total Number of Observations	34	Number of Distinct Observations	10
Number of Detects	8	Number of Non-Detects	26
Number of Distinct Detects	8	Number of Distinct Non-Detects	2
Minimum Detect	0.003	Minimum Non-Detect	0.0025
Maximum Detect	0.13	Maximum Non-Detect	0.05
Variance Detects	0.00265	Percent Non-Detects	76.47%
Mean Detects	0.0403	SD Detects	0.0514
Median Detects	0.0067	CV Detects	1.276
Skewness Detects	1.026	Kurtosis Detects	-0.707
Mean of Logged Detects	-4.208	SD of Logged Detects	1.573

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.753	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.363	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.0115	Standard Error of Mean	0.00519
SD	0.0283	95% KM (BCA) UCL	0.0204
95% KM (t) UCL	0.0203	95% KM (Percentile Bootstrap) UCL	0.0199
95% KM (z) UCL	0.02	95% KM Bootstrap t UCL	0.0284
90% KM Chebyshev UCL	0.0271	95% KM Chebyshev UCL	0.0341
97.5% KM Chebyshev UCL	0.0439	99% KM Chebyshev UCL	0.0631

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.876	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.754	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.344	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.307	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.617	k star (bias corrected MLE)	0.469
Theta hat (MLE)	0.0653	Theta star (bias corrected MLE)	0.086
nu hat (MLE)	9.876	nu star (bias corrected)	7.506
MLE Mean (bias corrected)	0.0403	MLE Sd (bias corrected)	0.0589

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.165	nu hat (KM)	11.21
Approximate Chi Square Value (11.21, α)	4.714	Adjusted Chi Square Value (11.21, β)	4.506
95% Gamma Approximate KM-UCL (use when n>=50)	0.0273	95% Gamma Adjusted KM-UCL (use when n<50)	0.0286

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.003	Mean	0.0171
Maximum	0.13	Median	0.01
SD	0.0271	CV	1.579
k hat (MLE)	1.264	k star (bias corrected MLE)	1.172
Theta hat (MLE)	0.0136	Theta star (bias corrected MLE)	0.0146
nu hat (MLE)	85.97	nu star (bias corrected)	79.71
MLE Mean (bias corrected)	0.0171	MLE Sd (bias corrected)	0.0158
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (79.71, α)	60.14	Adjusted Chi Square Value (79.71, β)	59.3
95% Gamma Approximate UCL (use when n>=50)	0.0227	95% Gamma Adjusted UCL (use when n<50)	0.023

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.816	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.818	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.293	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.313	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Approximate Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00978	Mean in Log Scale	-8.222
SD in Original Scale	0.0293	SD in Log Scale	3.035
95% t UCL (assumes normality of ROS data)	0.0183	95% Percentile Bootstrap UCL	0.019
95% BCA Bootstrap UCL	0.0212	95% Bootstrap t UCL	0.0281
95% H-UCL (Log ROS)	0.5		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.548	95% H-UCL (KM -Log)	0.0105
KM SD (logged)	1.04	95% Critical H Value (KM-Log)	2.495
KM Standard Error of Mean (logged)	0.192		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.0146	Mean in Log Scale	-5.573
SD in Original Scale	0.0291	SD in Log Scale	1.54
95% t UCL (Assumes normality)	0.0231	95% H-Stat UCL	0.0291

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Lognormal Distributed at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	0.0439

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

VANADIUM T

General Statistics

Total Number of Observations	38	Number of Distinct Observations	22
Number of Detects	21	Number of Non-Detects	17
Number of Distinct Detects	20	Number of Distinct Non-Detects	2
Minimum Detect	0.0026	Minimum Non-Detect	0.0025
Maximum Detect	2.03	Maximum Non-Detect	0.05
Variance Detects	0.29	Percent Non-Detects	44.74%
Mean Detects	0.316	SD Detects	0.539
Median Detects	0.0728	CV Detects	1.705
Skewness Detects	2.299	Kurtosis Detects	5.096
Mean of Logged Detects	-2.816	SD of Logged Detects	2.118

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.642	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.307	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.176	Standard Error of Mean	0.0699
SD	0.421	95% KM (BCA) UCL	0.3
95% KM (t) UCL	0.294	95% KM (Percentile Bootstrap) UCL	0.302
95% KM (z) UCL	0.291	95% KM Bootstrap t UCL	0.418
90% KM Chebyshev UCL	0.386	95% KM Chebyshev UCL	0.481
97.5% KM Chebyshev UCL	0.613	99% KM Chebyshev UCL	0.872

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.766	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.826	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.211	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.203	Detected Data Not Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.396	k star (bias corrected MLE)	0.371
Theta hat (MLE)	0.798	Theta star (bias corrected MLE)	0.851
nu hat (MLE)	16.63	nu star (bias corrected)	15.59
MLE Mean (bias corrected)	0.316	MLE Sd (bias corrected)	0.519

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.175	nu hat (KM)	13.32
Approximate Chi Square Value (13.32, α)	6.11	Adjusted Chi Square Value (13.32, β)	5.908
95% Gamma Approximate KM-UCL (use when n>=50)	0.384	95% Gamma Adjusted KM-UCL (use when n<50)	0.397

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0026	Mean	0.179
Maximum	2.03	Median	0.01
SD	0.425	CV	2.373
k hat (MLE)	0.354	k star (bias corrected MLE)	0.343
Theta hat (MLE)	0.506	Theta star (bias corrected MLE)	0.522
nu hat (MLE)	26.89	nu star (bias corrected)	26.1
MLE Mean (bias corrected)	0.179	MLE Sd (bias corrected)	0.306
		Adjusted Level of Significance (β)	0.0434
Approximate Chi Square Value (26.10, α)	15.46	Adjusted Chi Square Value (26.10, β)	15.12
95% Gamma Approximate UCL (use when n>=50)	0.302	95% Gamma Adjusted UCL (use when n<50)	0.309

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.939	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.908	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.165	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.193	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.175	Mean in Log Scale	-5.068
SD in Original Scale	0.427	SD in Log Scale	3.202
95% t UCL (assumes normality of ROS data)	0.292	95% Percentile Bootstrap UCL	0.3
95% BCA Bootstrap UCL	0.325	95% Bootstrap t UCL	0.436
95% H-UCL (Log ROS)	20.19		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-4.181	95% H-UCL (KM -Log)	0.689
KM SD (logged)	2.178	95% Critical H Value (KM-Log)	4.011
KM Standard Error of Mean (logged)	0.365		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.178	Mean in Log Scale	-4.231
SD in Original Scale	0.426	SD in Log Scale	2.389
95% t UCL (Assumes normality)	0.294	95% H-Stat UCL	1.382

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Approximate Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (BCA) UCL	0.3	95% GROS Adjusted Gamma UCL	0.309
95% Adjusted Gamma KM-UCL	0.397		

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ZINC D

General Statistics

Total Number of Observations	32	Number of Distinct Observations	30
Number of Detects	29	Number of Non-Detects	3
Number of Distinct Detects	29	Number of Distinct Non-Detects	1
Minimum Detect	0.133	Minimum Non-Detect	0.02
Maximum Detect	36.7	Maximum Non-Detect	0.02
Variance Detects	50.78	Percent Non-Detects	9.375%
Mean Detects	2.725	SD Detects	7.126
Median Detects	0.44	CV Detects	2.616
Skewness Detects	4.292	Kurtosis Detects	19.84
Mean of Logged Detects	-0.413	SD of Logged Detects	1.45

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.397	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.368	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	2.471	Standard Error of Mean	1.208
SD	6.712	95% KM (BCA) UCL	4.627
95% KM (t) UCL	4.519	95% KM (Percentile Bootstrap) UCL	4.497
95% KM (z) UCL	4.457	95% KM Bootstrap t UCL	10.77
90% KM Chebyshev UCL	6.094	95% KM Chebyshev UCL	7.735
97.5% KM Chebyshev UCL	10.01	99% KM Chebyshev UCL	14.49

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	3.576	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.821	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.343	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.173	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.455	k star (bias corrected MLE)	0.431
Theta hat (MLE)	5.984	Theta star (bias corrected MLE)	6.318
nu hat (MLE)	26.41	nu star (bias corrected)	25.01
MLE Mean (bias corrected)	2.725	MLE Sd (bias corrected)	4.149

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.136	nu hat (KM)	8.673
Approximate Chi Square Value (8.67, α)	3.131	Adjusted Chi Square Value (8.67, β)	2.955
95% Gamma Approximate KM-UCL (use when n>=50)	6.845	95% Gamma Adjusted KM-UCL (use when n<50)	7.254

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	2.47
Maximum	36.7	Median	0.394
SD	6.82	CV	2.761
k hat (MLE)	0.387	k star (bias corrected MLE)	0.371
Theta hat (MLE)	6.386	Theta star (bias corrected MLE)	6.652
nu hat (MLE)	24.75	nu star (bias corrected)	23.77
MLE Mean (bias corrected)	2.47	MLE Sd (bias corrected)	4.053
		Adjusted Level of Significance (β)	0.0416
Approximate Chi Square Value (23.77, α)	13.67	Adjusted Chi Square Value (23.77, β)	13.26
95% Gamma Approximate UCL (use when n>=50)	4.294	95% Gamma Adjusted UCL (use when n<50)	4.427

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.838	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.926	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.256	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.165	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	2.472	Mean in Log Scale	-0.715
SD in Original Scale	6.82	SD in Log Scale	1.68
95% t UCL (assumes normality of ROS data)	4.516	95% Percentile Bootstrap UCL	4.615
95% BCA Bootstrap UCL	5.841	95% Bootstrap t UCL	10.96
95% H-UCL (Log ROS)	5.513		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	2.47	Mean in Log Scale	-0.806
SD in Original Scale	6.82	SD in Log Scale	1.855
95% t UCL (Assumes normality)	4.514	95% H-Stat UCL	8.303

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

97.5% KM (Chebyshev) UCL	10.01

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ZINC T

General Statistics

Total Number of Observations	46	Number of Distinct Observations	46
Number of Detects	45	Number of Non-Detects	1
Number of Distinct Detects	45	Number of Distinct Non-Detects	1
Minimum Detect	0.148	Minimum Non-Detect	0.02
Maximum Detect	914	Maximum Non-Detect	0.02
Variance Detects	18521	Percent Non-Detects	2.174%
Mean Detects	26.09	SD Detects	136.1
Median Detects	0.52	CV Detects	5.216
Skewness Detects	6.601	Kurtosis Detects	43.99
Mean of Logged Detects	0.183	SD of Logged Detects	2

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.199	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.434	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	25.52	Standard Error of Mean	19.85
SD	133.2	95% KM (BCA) UCL	66.68
95% KM (t) UCL	58.87	95% KM (Percentile Bootstrap) UCL	64.34
95% KM (z) UCL	58.18	95% KM Bootstrap t UCL	389.3
90% KM Chebyshev UCL	85.09	95% KM Chebyshev UCL	112.1
97.5% KM Chebyshev UCL	149.5	99% KM Chebyshev UCL	223.1

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	6.901	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.895	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.282	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.145	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.233	k star (bias corrected MLE)	0.233
Theta hat (MLE)	111.8	Theta star (bias corrected MLE)	112.2
nu hat (MLE)	21	nu star (bias corrected)	20.93
MLE Mean (bias corrected)	26.09	MLE Sd (bias corrected)	54.1

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	0.0367	nu hat (KM)	3.381
Approximate Chi Square Value (3.38, α)	0.494	Adjusted Chi Square Value (3.38, β)	0.462
95% Gamma Approximate KM-UCL (use when n>=50)	174.8	95% Gamma Adjusted KM-UCL (use when n<50)	186.7

Gamma (KM) may not be used when k hat (KM) is < 0.1

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	11/15/2013 2:03:51 PM
From File	GW-ProUCL-Plume-RECENT_a.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	25.52
Maximum	914	Median	0.516
SD	134.6	CV	5.274
k hat (MLE)	0.228	k star (bias corrected MLE)	0.228
Theta hat (MLE)	111.9	Theta star (bias corrected MLE)	112.1
nu hat (MLE)	20.98	nu star (bias corrected)	20.95
MLE Mean (bias corrected)	25.52	MLE Sd (bias corrected)	53.49
		Adjusted Level of Significance (β)	0.0448
Approximate Chi Square Value (20.95, α)	11.55	Adjusted Chi Square Value (20.95, β)	11.33
95% Gamma Approximate UCL (use when n>=50)	46.28	95% Gamma Adjusted UCL (use when n<50)	47.21

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.86	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.945	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.198	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.132	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	25.52	Mean in Log Scale	0.077
SD in Original Scale	134.6	SD in Log Scale	2.106
95% t UCL (assumes normality of ROS data)	58.86	95% Percentile Bootstrap UCL	64.61
95% BCA Bootstrap UCL	89.14	95% Bootstrap t UCL	343.3
95% H-UCL (Log ROS)	31.95		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	25.52	Mean in Log Scale	0.0794
SD in Original Scale	134.6	SD in Log Scale	2.1
95% t UCL (Assumes normality)	58.86	95% H-Stat UCL	31.49

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

99% KM (Chebyshev) UCL	223.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/14/2014 4:55:31 PM
From File	GW-Plume-Recent-Sb.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

ANTIMONY-Dissolved

General Statistics

Total Number of Observations	34	Number of Distinct Observations	7
Number of Detects	5	Number of Non-Detects	29
Number of Distinct Detects	5	Number of Distinct Non-Detects	2
Minimum Detect	0.0059	Minimum Non-Detect	0.005
Maximum Detect	0.018	Maximum Non-Detect	0.01
Variance Detects	2.2123E-5	Percent Non-Detects	85.29%
Mean Detects	0.0102	SD Detects	0.0047
Median Detects	0.0084	CV Detects	0.459
Skewness Detects	1.469	Kurtosis Detects	2.274
Mean of Logged Detects	-4.656	SD of Logged Detects	0.42

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.873	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.252	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Normal at 5% Significance Level

Detected Data appear Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

Mean	0.00691	Standard Error of Mean	7.8732E-4
SD	0.00251	95% KM (BCA) UCL	0.00845
95% KM (t) UCL	0.00825	95% KM (Percentile Bootstrap) UCL	0.00832
95% KM (z) UCL	0.00821	95% KM Bootstrap t UCL	0.00808
90% KM Chebyshev UCL	0.00928	95% KM Chebyshev UCL	0.0103
97.5% KM Chebyshev UCL	0.0118	99% KM Chebyshev UCL	0.0147

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.314	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.68	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.245	**Kolmogrov-Smirnoff GOF**
5% K-S Critical Value	0.358	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	6.861	k star (bias corrected MLE)	2.878
Theta hat (MLE)	0.00149	Theta star (bias corrected MLE)	0.00356
nu hat (MLE)	68.61	nu star (bias corrected)	28.78
MLE Mean (bias corrected)	0.0102	MLE Sd (bias corrected)	0.00604

Gamma Kaplan-Meier (KM) Statistics

k hat (KM)	7.616	nu hat (KM)	517.9
Approximate Chi Square Value (517.87, α)	466.1	Adjusted Chi Square Value (517.87, β)	463.7
95% Gamma Approximate KM-UCL (use when n>=50)	0.00768	95% Gamma Adjusted KM-UCL (use when n<50)	0.00772

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detected data is small such as < 0.1

For such situations, GROS method tends to yield inflated values of UCLs and BTVs

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.0059	Mean	0.0101
Maximum	0.018	Median	0.01
SD	0.00166	CV	0.164
k hat (MLE)	44.44	k star (bias corrected MLE)	40.54
Theta hat (MLE)	2.2710E-4	Theta star (bias corrected MLE)	2.4895E-4
nu hat (MLE)	3022	nu star (bias corrected)	2757
MLE Mean (bias corrected)	0.0101	MLE Sd (bias corrected)	0.00159
		Adjusted Level of Significance (β)	0.0422
Approximate Chi Square Value (N/A, α)	2636	Adjusted Chi Square Value (N/A, β)	2630
95% Gamma Approximate UCL (use when n>=50)	0.0106	95% Gamma Adjusted UCL (use when n<50)	0.0106

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.955	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.762	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.216	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.396	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.00653	Mean in Log Scale	-5.122
SD in Original Scale	0.00304	SD in Log Scale	0.427
95% t UCL (assumes normality of ROS data)	0.00742	95% Percentile Bootstrap UCL	0.00742
95% BCA Bootstrap UCL	0.00751	95% Bootstrap t UCL	0.00767
95% H-UCL (Log ROS)	0.00751		

UCLs using Lognormal Distribution and KM Estimates when Detected data are Lognormally Distributed

KM Mean (logged)	-5.023	95% H-UCL (KM -Log)	0.00753
KM SD (logged)	0.293	95% Critical H Value (KM-Log)	1.795
KM Standard Error of Mean (logged)	0.111		

DL/2 Statistics

DL/2 Normal		DL/2 Log-Transformed	
Mean in Original Scale	0.00562	Mean in Log Scale	-5.245
SD in Original Scale	0.00261	SD in Log Scale	0.332
95% t UCL (Assumes normality)	0.00638	95% H-Stat UCL	0.00619

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Normal Distributed at 5% Significance Level

Suggested UCL to Use

95% KM (t) UCL	0.00825	95% KM (Percentile Bootstrap) UCL	0.00832

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	5/14/2014 4:56:30 PM
From File	GW-Plume-Recent-12DCP.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

1,2-DICHLOROPROPANE

General Statistics

Total Number of Observations	60	Number of Distinct Observations	8
Number of Detects	1	Number of Non-Detects	59
Number of Distinct Detects	1	Number of Distinct Non-Detects	7

Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).

The data set for variable 1,2-DICHLOROPROPANE was not processed!

ATTACHMENT G
RISK CALCULATION RAGS PART D TABLE 7S

Attachment G
List of Tables
CPS/Madison Superfund Site
Old Bridge, New Jersey

Table	Exposure Point	Receptor	Adolescent Trespasser Surface Soil - ingestion and dermal	Adolescent Trespasser Combined soil - ingestion and dermal	Adult Trespasser Combined soil - ingestion and dermal	Adult Trespasser Combined soil - ingestion and dermal	Outdoor Worker Surface Soil - ingestion and dermal, inhalation dust	Outdoor Worker Combined soil - ingestion and dermal, inhalation dust	Outdoor Worker Groundwater Ingestion	Indoor Worker Surface Soil - ingestion and dermal	Indoor Worker Combined soil - ingestion and dermal	Indoor Worker Groundwater Ingestion	Child Resident Surface Soil - ingestion and dermal	Child Resident Combined soil - ingestion and dermal	Child Resident Groundwater Ingestion, dermal, inhalation	Adult Resident Surface Soil - ingestion and dermal	Adult Resident Combined soil - ingestion and dermal	Adult Resident Groundwater Ingestion, dermal, inhalation	Construction Worker Surface Soil - ingestion and dermal, inhalation dust	Construction Worker Combined soil - ingestion and dermal, inhalation dust	Construction Worker Inhalation vapors trench	Construction Worker Groundwater Ingestion and dermal
G- 1	Area 1	Adolescent Trespasser	X																			
G- 2	Area 1	Adult Trespasser			X																	
G- 3	Area 1	Outdoor Worker					X		X													
G- 4	Area 1	Indoor Worker								X		X										
G- 5	Area 1	Child Resident											X		X							
G- 6	Area 1	Adult Resident														X		X				
G- 7	Area 2	Adolescent Trespasser	X																			
G- 8	Area 2	Adult Trespasser			X																	
G- 9	Area 2	Outdoor Worker					X		X													
G- 10	Area 2	Indoor Worker								X		X										
G- 11	Area 2	Child Resident											X		X							
G- 12	Area 2	Adult Resident														X		X				
G- 13	Area 3	Adolescent Trespasser	X																			
G- 14	Area 3	Adult Trespasser			X																	
G- 15	Area 3	Outdoor Worker					X		X													
G- 16	Area 3	Indoor Worker								X		X										
G- 17	Area 3	Child Resident											X		X							
G- 18	Area 3	Adult Resident														X		X				
G- 19	Area 1	Adolescent Trespasser		X																		
G- 20	Area 1	Adult Trespasser				X																
G- 21	Area 1	Outdoor Worker						X	X													
G- 22	Area 1	Indoor Worker									X	X										
G- 23	Area 1	Child Resident												X	X							
G- 24	Area 1	Adult Resident															X	X				
G- 25	Area 1	Construction Worker																		X	X	
G- 26	Area 2	Adolescent Trespasser		X																		
G- 27	Area 2	Adult Trespasser				X																
G- 28	Area 2	Outdoor Worker						X	X													
G- 29	Area 2	Indoor Worker									X	X										
G- 30	Area 2	Child Resident												X	X							
G- 31	Area 2	Adult Resident															X	X				
G- 32	Area 2	Construction Worker																		X	X	
G- 33	Area 3	Adolescent Trespasser		X																		
G- 34	Area 3	Adult Trespasser				X																
G- 35	Area 3	Outdoor Worker						X	X													
G- 36	Area 3	Indoor Worker									X	X										
G- 37	Area 3	Child Resident												X	X							
G- 38	Area 3	Adult Resident															X	X				
G- 39	Area 3	Construction Worker																		X	X	
G- 40	Sewer Line, Area 1	Construction Worker																		X	X	
G- 41	Sewer Line, Area 2	Construction Worker																		X	X	
G- 42	Sewer Line, Area 3	Construction Worker																		X	X	

TABLE G-1
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-2 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	3.1E-08	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-09	3.6E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			4.9E-05	mg/kg/day	8.0E-04	mg/kg/day	6.E-02
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.0E-02	mg/kg/day	1.E-02
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			1.5E-06	mg/kg/day	2.0E-03	mg/kg/day	7.E-04
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			8.3E-05	mg/kg/day	9.0E-02	mg/kg/day	9.E-04
				1,2-DICHLOROETHANE	0.932	mg/kg	3.7E-08	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-09	4.3E-07	mg/kg/day	6.0E-03	mg/kg/day	7.E-05
				1,2-DICHLOROPROPANE	1.802	mg/kg	7.1E-08	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-09	8.3E-07	mg/kg/day	9.0E-02	mg/kg/day	9.E-06
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			3.0E-07	mg/kg/day	3.0E-03	mg/kg/day	1.E-04
				1,4-DICHLOROBENZENE	6.391	mg/kg	2.5E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-09	3.0E-06	mg/kg/day	7.0E-02	mg/kg/day	4.E-05
				BENZENE	2.72	mg/kg	1.1E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	6.E-09	1.3E-06	mg/kg/day	4.0E-03	mg/kg/day	3.E-04
				CHLOROBENZENE	6.345	mg/kg	NC		NC			2.9E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			9.7E-05	mg/kg/day	NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			4.9E-06	mg/kg/day	1.0E-01	mg/kg/day	5.E-05
				METHYLENE CHLORIDE	6.393	mg/kg	5.8E-07	mg/kg/day	2.0E-03	(mg/kg/day)-1	1.E-09	3.0E-06	mg/kg/day	6.0E-03	mg/kg/day	5.E-04
				O-XYLENE	15.15	mg/kg	NC		NC			7.0E-06	mg/kg/day	2.0E-01	mg/kg/day	3.E-05
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			1.4E-07	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	2.9E-08	mg/kg/day	2.1E-03	(mg/kg/day)-1	6.E-11	3.4E-07	mg/kg/day	6.0E-03	mg/kg/day	6.E-05
				TOLUENE	198.7	mg/kg	NC		NC			9.2E-05	mg/kg/day	8.0E-02	mg/kg/day	1.E-03
				TRICHLOROETHYLENE - Kidney	1.638	mg/kg	1.5E-07	mg/kg/day	9.3E-03	(mg/kg/day)-1	1.E-09	7.6E-07	mg/kg/day	NA		
				TRICHLOROETHYLENE - Liver &	1.638	mg/kg	6.5E-08	mg/kg/day	3.7E-02	(mg/kg/day)-1	2.E-09	7.6E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			2.7E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			9.7E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				BENZO(A)ANTHRACENE	0.0942	mg/kg	8.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.4E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				BENZO(A)PYRENE	0.102	mg/kg	9.3E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	4.7E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				BENZO(B)FLUORANTHENE	0.129	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-09	6.0E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Biphenyl	500	mg/kg	NC		NC			2.3E-04	mg/kg/day	5.0E-01	mg/kg/day	5.E-04
				NAPHTHALENE	0.665	mg/kg	NC		NC			3.1E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	6708	mg/kg	NC		NC			3.1E-03	mg/kg/day	1.0E+00	mg/kg/day	3.E-03
				ANTIMONY	1.114	mg/kg	NC		NC			5.1E-07	mg/kg/day	4.0E-04	mg/kg/day	1.E-03
				ARSENIC	4.564	mg/kg	1.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	26.86	mg/kg	NC		NC			1.2E-05	mg/kg/day	1.5E+00	mg/kg/day	8.E-06
				COBALT	2.796	mg/kg	NC		NC			1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				COPPER	77.49	mg/kg	NC		NC			3.6E-05	mg/kg/day	4.0E-02	mg/kg/day	9.E-04
				MERCURY	0.584	mg/kg	NC		NC			2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				THALLIUM	1.135	mg/kg	NC		NC			5.2E-07	mg/kg/day	1.0E-05	mg/kg/day	5.E-02
				VANADIUM	40.25	mg/kg	NC		NC			1.9E-05	mg/kg/day	5.0E-03	mg/kg/day	4.E-03
			EXPOSURE ROUTE TOTAL								3.E-07					2.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			5.5E-05	mg/kg/day	1.0E-02	mg/kg/day	6.E-03
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			3.8E-05	mg/kg/day	9.0E-02	mg/kg/day	4.E-04
				1,2-DICHLOROETHANE	0.932	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	1.802	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			1.4E-07	mg/kg/day	3.0E-03	mg/kg/day	5.E-05
				1,4-DICHLOROBENZENE	6.391	mg/kg	1.2E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	6.E-10	1.4E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				BENZENE	2.72	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	6.345	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	6.393	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	15.15	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	198.7	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE - Kidney	1.638	mg/kg	--		--			--		NA		
				TRICHLOROETHYLENE - Liver &	1.638	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			4.5E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				BENZO(A)ANTHRACENE	0.0942	mg/kg	5.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	2.6E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				BENZO(A)PYRENE	0.102	mg/kg	5.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	2.8E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(B)FLUORANTHENE	0.129	mg/kg	7.0E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	3.6E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				Biphenyl	500	mg/kg	NC		NC			1.1E-04	mg/kg/day	5.0E-01	mg/kg/day	2.E-04
				NAPHTHALENE	0.665	mg/kg	NC		NC			1.8E-07	mg/kg/day	2.0E-02	mg/kg/day	9.E-06
				ALUMINUM	6708	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	1.114	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	4.564	mg/kg	2.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	2.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	26.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	2.796	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	77.49	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.584	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	1.135	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	40.25	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								9.E-08					9.E-03
		EXPOSURE POINT TOTAL									4.E-07					2.E-01
	EXPOSURE MEDIUM TOTAL										4.E-07					2.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**2.E-01**

TABLE G-1
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/2015
Checked by: BJR 4/10/2015

TABLE G-2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-2 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	2.4E-08	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-09	1.4E-07	mg/kg/day	2.0E-02	mg/kg/day	7.E-06
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			2.0E-05	mg/kg/day	8.0E-04	mg/kg/day	2.E-02
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			4.8E-05	mg/kg/day	1.0E-02	mg/kg/day	5.E-03
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			5.9E-07	mg/kg/day	2.0E-03	mg/kg/day	3.E-04
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			3.3E-05	mg/kg/day	9.0E-02	mg/kg/day	4.E-04
				1,2-DICHLOROETHANE	0.932	mg/kg	2.9E-08	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-09	1.7E-07	mg/kg/day	6.0E-03	mg/kg/day	3.E-05
				1,2-DICHLOROPROPANE	1.802	mg/kg	5.6E-08	mg/kg/day	3.6E-02	(mg/kg/day)-1	2.E-09	3.3E-07	mg/kg/day	9.0E-02	mg/kg/day	4.E-06
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			1.2E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				1,4-DICHLOROBENZENE	6.391	mg/kg	2.0E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-09	1.2E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				BENZENE	2.72	mg/kg	8.5E-08	mg/kg/day	5.5E-02	(mg/kg/day)-1	5.E-09	5.0E-07	mg/kg/day	4.0E-03	mg/kg/day	1.E-04
				CHLOROBENZENE	6.345	mg/kg	NC		NC			1.2E-06	mg/kg/day	2.0E-02	mg/kg/day	6.E-05
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			3.8E-05	mg/kg/day	NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			2.0E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				METHYLENE CHLORIDE	6.393	mg/kg	2.0E-07	mg/kg/day	2.0E-03	(mg/kg/day)-1	4.E-10	1.2E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				O-XYLENE	15.15	mg/kg	NC		NC			2.8E-06	mg/kg/day	2.0E-01	mg/kg/day	1.E-05
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			5.7E-08	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	2.3E-08	mg/kg/day	2.1E-03	(mg/kg/day)-1	5.E-11	1.4E-07	mg/kg/day	6.0E-03	mg/kg/day	2.E-05
				TOLUENE	198.7	mg/kg	NC		NC			3.6E-05	mg/kg/day	8.0E-02	mg/kg/day	5.E-04
				TRICHLOROETHYLENE	1.638	mg/kg	5.1E-08	mg/kg/day	4.6E-02	(mg/kg/day)-1	2.E-09	3.0E-07	mg/kg/day	5.0E-04	mg/kg/day	6.E-04
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				BENZO(A)ANTHRACENE	0.0942	mg/kg	3.0E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.7E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(A)PYRENE	0.102	mg/kg	3.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.9E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(B)FLUORANTHENE	0.129	mg/kg	4.0E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.4E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Biphenyl	500	mg/kg	NC		NC			9.1E-05	mg/kg/day	5.0E-01	mg/kg/day	2.E-04
				NAPHTHALENE	0.665	mg/kg	NC		NC			1.2E-07	mg/kg/day	2.0E-02	mg/kg/day	6.E-06
				ALUMINUM	6708	mg/kg	NC		NC			1.2E-03	mg/kg/day	1.0E+00	mg/kg/day	1.E-03
				ANTIMONY	1.114	mg/kg	NC		NC			2.0E-07	mg/kg/day	4.0E-04	mg/kg/day	5.E-04
				ARSENIC	4.564	mg/kg	8.6E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	5.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	26.86	mg/kg	NC		NC			4.9E-06	mg/kg/day	1.5E+00	mg/kg/day	3.E-06
				COBALT	2.796	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				COPPER	77.49	mg/kg	NC		NC			1.4E-05	mg/kg/day	4.0E-02	mg/kg/day	4.E-04
				MERCURY	0.584	mg/kg	NC		NC			1.1E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				THALLIUM	1.135	mg/kg	NC		NC			2.1E-07	mg/kg/day	1.0E-05	mg/kg/day	2.E-02
				VANADIUM	40.25	mg/kg	NC		NC			7.4E-06	mg/kg/day	5.0E-03	mg/kg/day	1.E-03
			EXPOSURE ROUTE TOTAL								2.E-07					6.E-02
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			1.9E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			1.3E-05	mg/kg/day	9.0E-02	mg/kg/day	1.E-04
				1,2-DICHLOROETHANE	0.932	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	1.802	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			4.9E-08	mg/kg/day	3.0E-03	mg/kg/day	2.E-05
				1,4-DICHLOROBENZENE	6.391	mg/kg	8.1E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	4.E-10	4.7E-07	mg/kg/day	7.0E-02	mg/kg/day	7.E-06
				BENZENE	2.72	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	6.345	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	6.393	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	15.15	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	198.7	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	1.638	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				BENZO(A)ANTHRACENE	0.0942	mg/kg	1.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	9.1E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(A)PYRENE	0.102	mg/kg	1.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	9.8E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.129	mg/kg	2.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Biphenyl	500	mg/kg	NC		NC			3.7E-05	mg/kg/day	5.0E-01	mg/kg/day	7.E-05
				NAPHTHALENE	0.665	mg/kg	NC		NC			6.4E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				ALUMINUM	6708	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	1.114	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	4.564	mg/kg	1.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	1.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				CHROMIUM	26.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	2.796	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	77.49	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.584	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	1.135	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	40.25	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	

TABLE G-2
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								4.E-08					3.E-03
		EXPOSURE POINT TOTAL									2.E-07					6.E-02
	EXPOSURE MEDIUM TOTAL										2.E-07					6.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**6.E-02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 1 (0-2 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	2.4E-07	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-08	6.8E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			9.4E-05	mg/kg/day	8.0E-04	mg/kg/day	1.E-01
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			2.3E-04	mg/kg/day	1.0E-02	mg/kg/day	2.E-02
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			2.8E-06	mg/kg/day	2.0E-03	mg/kg/day	1.E-03
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			1.6E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-DICHLOROETHANE	0.932	mg/kg	2.9E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-08	8.2E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				1,2-DICHLOROPROPANE	1.802	mg/kg	5.7E-07	mg/kg/day	3.6E-02	(mg/kg/day)-1	2.E-08	1.6E-06	mg/kg/day	9.0E-02	mg/kg/day	2.E-05
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			5.8E-07	mg/kg/day	3.0E-03	mg/kg/day	2.E-04
				1,4-DICHLOROBENZENE	6.391	mg/kg	2.0E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-08	5.6E-06	mg/kg/day	7.0E-02	mg/kg/day	8.E-05
				BENZENE	2.72	mg/kg	8.6E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	5.E-08	2.4E-06	mg/kg/day	4.0E-03	mg/kg/day	6.E-04
				CHLOROBENZENE	6.345	mg/kg	NC		NC			5.6E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			1.8E-04	mg/kg/day	NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			9.4E-06	mg/kg/day	1.0E-01	mg/kg/day	9.E-05
				METHYLENE CHLORIDE	6.393	mg/kg	2.0E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				O-XYLENE	15.15	mg/kg	NC		NC			1.3E-05	mg/kg/day	2.0E-01	mg/kg/day	7.E-05
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			2.7E-07	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	2.3E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	5.E-10	6.6E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				TOLUENE	198.7	mg/kg	NC		NC			1.7E-04	mg/kg/day	8.0E-02	mg/kg/day	2.E-03
				TRICHLOROETHYLENE	1.638	mg/kg	5.2E-07	mg/kg/day	4.6E-02	(mg/kg/day)-1	2.E-08	1.4E-06	mg/kg/day	5.0E-04	mg/kg/day	3.E-03
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			5.2E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				BENZO(A)ANTHRACENE	0.0942	mg/kg	3.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	8.3E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.102	mg/kg	3.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	9.0E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(B)FLUORANTHENE	0.129	mg/kg	4.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Biphenyl	500	mg/kg	NC		NC			4.4E-04	mg/kg/day	5.0E-01	mg/kg/day	9.E-04
				NAPHTHALENE	0.665	mg/kg	NC		NC			5.9E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				ALUMINUM	6708	mg/kg	NC		NC			5.9E-03	mg/kg/day	1.0E+00	mg/kg/day	6.E-03
				ANTIMONY	1.114	mg/kg	NC		NC			9.8E-07	mg/kg/day	4.0E-04	mg/kg/day	2.E-03
				ARSENIC	4.564	mg/kg	8.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	2.4E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				CHROMIUM	26.86	mg/kg	NC		NC			2.4E-05	mg/kg/day	1.5E+00	mg/kg/day	2.E-05
				COBALT	2.796	mg/kg	NC		NC			2.5E-06	mg/kg/day	3.0E-04	mg/kg/day	8.E-03
				COPPER	77.49	mg/kg	NC		NC			6.8E-05	mg/kg/day	4.0E-02	mg/kg/day	2.E-03
				MERCURY	0.584	mg/kg	NC		NC			5.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				THALLIUM	1.135	mg/kg	NC		NC			1.0E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	40.25	mg/kg	NC		NC			3.5E-05	mg/kg/day	5.0E-03	mg/kg/day	7.E-03
		EXPOSURE POINT TOTAL									2.E-06					3.E-01
	EXPOSURE MEDIUM TOTAL										2.E-06					3.E-01
	AIR	DUST AT SITE	DUST INHALATION	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	4.2E-08	ug/m3	5.8E-05	(ug/m3)-1	2.E-12	1.2E-07	ug/m3	NA		
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			1.6E-05	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			3.9E-05	ug/m3	2.0E+00	ug/m3	2.E-05
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			4.8E-07	ug/m3	NA		
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			2.7E-05	ug/m3	2.0E+02	ug/m3	1.E-07
				1,2-DICHLOROETHANE	0.932	mg/kg	5.0E-08	ug/m3	2.6E-05	(ug/m3)-1	1.E-12	1.4E-07	ug/m3	7.0E+00	ug/m3	2.E-08
				1,2-DICHLOROPROPANE	1.802	mg/kg	NC		NC			2.7E-07	ug/m3	4.0E+00	ug/m3	7.E-08
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			9.9E-08	ug/m3	NA		
				1,4-DICHLOROBENZENE	6.391	mg/kg	3.4E-07	ug/m3	1.1E-05	(ug/m3)-1	4.E-12	9.7E-07	ug/m3	8.0E+02	ug/m3	1.E-09
				BENZENE	2.72	mg/kg	1.5E-07	ug/m3	7.8E-06	(ug/m3)-1	1.E-12	4.1E-07	ug/m3	3.0E+01	ug/m3	1.E-08
				CHLOROBENZENE	6.345	mg/kg	NC		NC			9.6E-07	ug/m3	5.0E+01	ug/m3	2.E-08
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			3.2E-05	ug/m3	3.0E+03	ug/m3	1.E-08
				ETHYLBENZENE	10.69	mg/kg	NC		NC			1.6E-06	ug/m3	1.0E+03	ug/m3	2.E-09
				METHYLENE CHLORIDE	6.393	mg/kg	3.4E-07	ug/m3	1.0E-08	(ug/m3)-1	3.E-15	9.7E-07	ug/m3	6.0E+02	ug/m3	2.E-09
				O-XYLENE	15.15	mg/kg	NC		NC			2.3E-06	ug/m3	1.0E+02	ug/m3	2.E-08
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			4.7E-08	ug/m3	NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	4.0E-08	ug/m3	2.6E-07	(ug/m3)-1	1.E-14	1.1E-07	ug/m3	4.0E+01	ug/m3	3.E-09
				TOLUENE	198.7	mg/kg	NC		NC			3.0E-05	ug/m3	5.0E+03	ug/m3	6.E-09
				TRICHLOROETHYLENE	1.638	mg/kg	8.8E-08	ug/m3	4.1E-06	(ug/m3)-1	4.E-13	2.5E-07	ug/m3	2.0E+00	ug/m3	1.E-07
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			8.8E-06	ug/m3	1.0E+02	ug/m3	9.E-08
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			3.2E-07	ug/m3	NA		
				BENZO(A)ANTHRACENE	0.0942	mg/kg	5.1E-09	ug/m3	1.1E-04	(ug/m3)-1	6.E-13	1.4E-08	ug/m3	NA		
				BENZO(A)PYRENE	0.102	mg/kg	5.5E-09	ug/m3	1.1E-03	(ug/m3)-1	6.E-12	1.5E-08	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.129	mg/kg	7.0E-09	ug/m3	1.1E-04	(ug/m3)-1	8.E-13	1.9E-08	ug/m3	NA		
				Biphenyl	500	mg/kg	NC		NC			7.6E-05	ug/m3	NA		
				NAPHTHALENE	0.665	mg/kg	NC		NC			1.0E-07	ug/m3	3.0E+00	ug/m3	3.E-08
				ALUMINUM	6708	mg/kg	NC		NC			1.0E-03	ug/m3	5.0E+00	ug/m3	2.E-04
				ANTIMONY	1.114	mg/kg	NC		NC			1.7E-07	ug/m3	NA		
				ARSENIC	4.564	mg/kg	2.5E-07	ug/m3	4.3E-03	(ug/m3)-1	1.E-09	6.9E-07	ug/m3	1.5E-02	ug/m3	5.E-05
				CHROMIUM	26.86	mg/kg	NC		NC			4.1E-06	ug/m3	NA		
				COBALT	2.796	mg/kg	1.5E-07	ug/m3	9.0E-03	(ug/m3)-1	1.E-09	4.2E-07	ug/m3	6.0E-03	ug/m3	7.E-05
				COPPER	77.49	mg/kg	NC		NC			1.2E-05	ug/m3	NA		
				MERCURY	0.584	mg/kg	NC		NC			8.8E-08	ug/m3	3.0E-01	ug/m3	3.E-07
				THALLIUM	1.135	mg/kg	NC		NC			1.7E-07	ug/m3	NA		
				VANADIUM	40.25	mg/kg	NC		NC			6.1E-06	ug/m3	1.0E-01	ug/m3	6.E-05
			EXPOSURE ROUTE TOTAL								2.E-09					4.E-04
		EXPOSURE POINT TOTAL									2.E-09					4.E-04
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

TABLE G-3
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-4
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.6E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-4
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 1 (0-2 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	1.3E-07	mg/kg/day	2.0E-01	(mg/kg/day)-1	3.E-08	3.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			5.2E-05	mg/kg/day	8.0E-04	mg/kg/day	7.E-02
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-02	mg/kg/day	1.E-02
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			1.6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.E-04
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			8.8E-05	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-DICHLOROETHANE	0.932	mg/kg	1.6E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-08	4.6E-07	mg/kg/day	6.0E-03	mg/kg/day	8.E-05
				1,2-DICHLOROPROPANE	1.802	mg/kg	3.1E-07	mg/kg/day	3.6E-02	(mg/kg/day)-1	1.E-08	8.8E-07	mg/kg/day	9.0E-02	mg/kg/day	1.E-05
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			3.2E-07	mg/kg/day	3.0E-03	mg/kg/day	1.E-04
				1,4-DICHLOROBENZENE	6.391	mg/kg	1.1E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	6.E-09	3.1E-06	mg/kg/day	7.0E-02	mg/kg/day	4.E-05
				BENZENE	2.72	mg/kg	4.8E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-08	1.3E-06	mg/kg/day	4.0E-03	mg/kg/day	3.E-04
				CHLOROBENZENE	6.345	mg/kg	NC		NC			3.1E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			1.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			5.2E-06	mg/kg/day	1.0E-01	mg/kg/day	5.E-05
				METHYLENE CHLORIDE	6.393	mg/kg	1.1E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-09	3.1E-06	mg/kg/day	6.0E-03	mg/kg/day	5.E-04
				O-XYLENE	15.15	mg/kg	NC		NC			7.4E-06	mg/kg/day	2.0E-01	mg/kg/day	4.E-05
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			1.5E-07	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	1.3E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	3.E-10	3.6E-07	mg/kg/day	6.0E-03	mg/kg/day	6.E-05
				TOLUENE	198.7	mg/kg	NC		NC			9.7E-05	mg/kg/day	8.0E-02	mg/kg/day	1.E-03
				TRICHLOROETHYLENE	1.638	mg/kg	2.9E-07	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-08	8.0E-07	mg/kg/day	5.0E-04	mg/kg/day	2.E-03
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			2.9E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				BENZO(A)ANTHRACENE	0.0942	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.6E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				BENZO(A)PYRENE	0.102	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				BENZO(B)FLUORANTHENE	0.129	mg/kg	2.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	6.3E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Biphenyl	500	mg/kg	NC		NC			2.4E-04	mg/kg/day	5.0E-01	mg/kg/day	5.E-04
				NAPHTHALENE	0.665	mg/kg	NC		NC			3.3E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	6708	mg/kg	NC		NC			3.3E-03	mg/kg/day	1.0E+00	mg/kg/day	3.E-03
				ANTIMONY	1.114	mg/kg	NC		NC			5.5E-07	mg/kg/day	4.0E-04	mg/kg/day	1.E-03
				ARSENIC	4.564	mg/kg	4.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	26.86	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.5E+00	mg/kg/day	9.E-06
				COBALT	2.796	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				COPPER	77.49	mg/kg	NC		NC			3.8E-05	mg/kg/day	4.0E-02	mg/kg/day	9.E-04
				MERCURY	0.584	mg/kg	NC		NC			2.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				THALLIUM	1.135	mg/kg	NC		NC			5.6E-07	mg/kg/day	1.0E-05	mg/kg/day	6.E-02
				VANADIUM	40.25	mg/kg	NC		NC			2.0E-05	mg/kg/day	5.0E-03	mg/kg/day	4.E-03
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-01

TABLE G-4
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			5.9E-05	mg/kg/day	1.0E-02	mg/kg/day	6.E-03
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			4.1E-05	mg/kg/day	9.0E-02	mg/kg/day	5.E-04
				1,2-DICHLOROETHANE	0.932	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	1.802	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			1.5E-07	mg/kg/day	3.0E-03	mg/kg/day	5.E-05
				1,4-DICHLOROBENZENE	6.391	mg/kg	5.2E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	3.E-09	1.4E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				BENZENE	2.72	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	6.345	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	6.393	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	15.15	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	198.7	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	1.638	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				BENZO(A)ANTHRACENE	0.0942	mg/kg	9.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	2.8E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(A)PYRENE	0.102	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	3.0E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(B)FLUORANTHENE	0.129	mg/kg	1.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	3.8E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				Biphenyl	500	mg/kg	NC		NC			1.1E-04	mg/kg/day	5.0E-01	mg/kg/day	2.E-04
				NAPHTHALENE	0.665	mg/kg	NC		NC			2.0E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				ALUMINUM	6708	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	1.114	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	4.564	mg/kg	1.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	3.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	26.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	2.796	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	77.49	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.584	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	1.135	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	40.25	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								3.E-07					9.E-03
		EXPOSURE POINT TOTAL									1.E-06					2.E-01
	EXPOSURE MEDIUM TOTAL										1.E-06					2.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-5
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.4E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	3.E-06	1.7E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	3.3E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-07	3.8E-05	mg/kg/day	4.0E-03	mg/kg/day	9.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	1.2E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	7.E-08	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			2.0E-02	mg/kg/day	8.0E-04	mg/kg/day	3.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			3.3E-02	mg/kg/day	1.0E-02	mg/kg/day	3.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			1.9E-03	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			1.4E-02	mg/kg/day	2.0E-03	mg/kg/day	7.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			3.2E-02	mg/kg/day	9.0E-02	mg/kg/day	4.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.3E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-05	1.5E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.6E-03	mg/kg/day	9.0E-03	mg/kg/day	5.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-06	1.3E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-02
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	8.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			6.1E-04	mg/kg/day	1.0E-02	mg/kg/day	6.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			2.1E-03	mg/kg/day	3.0E-03	mg/kg/day	7.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.4E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-06	1.7E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			1.9E-02	mg/kg/day	4.0E-02	mg/kg/day	5.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			6.8E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			8.9E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	2.0E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-04	2.3E-02	mg/kg/day	4.0E-03	mg/kg/day	6.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			9.6E-02	mg/kg/day	2.0E-02	mg/kg/day	5.E+00
				CHLOROFORM	0.0005829	mg/l	3.2E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	1.E-07	3.7E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			2.0E-03	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			1.3E-03	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			2.7E-02	mg/kg/day	1.0E-01	mg/kg/day	3.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.1E-03	mg/kg/day	2.0E-01	mg/kg/day	6.E-03
				METHYLENE CHLORIDE	0.341	mg/l	9.9E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-05	2.2E-02	mg/kg/day	6.0E-03	mg/kg/day	4.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	7.5E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-07	8.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			6.5E-04	mg/kg/day	2.0E-02	mg/kg/day	3.E-02
				O-XYLENE	0.32	mg/l	NC		NC			2.0E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.1E-02	mg/kg/day	2.0E-02	mg/kg/day	6.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			1.3E-04	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			7.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			7.4E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.1E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-09	3.6E-05	mg/kg/day	6.0E-03	mg/kg/day	6.E-03
				TOLUENE	3.656	mg/l	NC		NC			2.3E-01	mg/kg/day	8.0E-02	mg/kg/day	3.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	1.9E-04	mg/kg/day	9.3E-03	(mg/kg/day)-1	2.E-06	4.1E-04	mg/kg/day	NA		
				TRICHLOROETHYLENE	0.00641	mg/l	3.5E-05	mg/kg/day	3.7E-02	(mg/kg/day)-1	1.E-06	4.1E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				VINYL CHLORIDE	0.0466	mg/l	2.6E-04	mg/kg/day	1.4E+00	(mg/kg/day)-1	4.E-04	3.0E-03	mg/kg/day	3.0E-03	mg/kg/day	1.E+00
				XYLENES,TOTAL	0.354	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				1,4-DIOXANE	0.00991	mg/l	5.4E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	5.E-06	6.3E-04	mg/kg/day	3.0E-02	mg/kg/day	2.E-02
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			5.8E-05	mg/kg/day	4.0E-03	mg/kg/day	1.E-02
				3-NITROANILINE	0.00346	mg/l	NC		NC			2.2E-04	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	2.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-05	3.0E-02	mg/kg/day	7.0E-03	mg/kg/day	4.E+00
				Biphenyl	0.00537	mg/l	NC		NC			3.4E-04	mg/kg/day	5.0E-01	mg/kg/day	7.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	2.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-07	3.3E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	4.3E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	3.0E-05	mg/kg/day	2.E-02
				HEPTACHLOR EPOXIDE	0.00001	mg/l	5.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				ALUMINUM	55.28	mg/l	NC		NC			3.5E+00	mg/kg/day	1.0E+00	mg/kg/day	4.E+00
				ARSENIC	0.0251	mg/l	1.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-04	1.6E-03	mg/kg/day	3.0E-04	mg/kg/day	5.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			5.3E-04	mg/kg/day	4.0E-04	mg/kg/day	1.E+00
				BARIUM	0.362	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				BERYLLIUM	0.00373	mg/l	NC		NC			2.4E-04	mg/kg/day	2.0E-03	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			5.2E-03	mg/kg/day	1.0E-03	mg/kg/day	5.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.0E-02	mg/kg/day	1.5E+00	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			4.8E-03	mg/kg/day	3.0E-04	mg/kg/day	2.E+01
				COPPER	52.99	mg/l	NC		NC			3.4E+00	mg/kg/day	4.0E-02	mg/kg/day	8.E+01
				IRON	342.6	mg/l	NC		NC			2.2E+01	mg/kg/day	7.0E-01	mg/kg/day	3.E+01
				LEAD	0.135	mg/l	7.4E-04	mg/kg/day	ND			8.6E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			4.9E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				MERCURY	0.00086978	mg/l	NC		NC			5.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				NICKEL	0.24	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	8.E-01
				SELENIUM	0.00744	mg/l	NC		NC			4.8E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
				SILVER	0.00262	mg/l	NC		NC			1.7E-04	mg/kg/day	5.0E-03	mg/kg/day	3.E-02
				THALLIUM	0.00788	mg/l	NC		NC			5.0E-04	mg/kg/day	1.0E-05	mg/kg/day	5.E+01
				VANADIUM	0.397	mg/l	NC		NC			2.5E-02	mg/kg/day	5.0E-03	mg/kg/day	5.E+00
				ZINC	223.1	mg/l	NC		NC			1.4E+01	mg/kg/day	3.0E-01	mg/kg/day	5.E+01
			EXPOSURE ROUTE TOTAL								7.E-04					3.E+02

TABLE G-5
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.8E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-07	2.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.9E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-08	3.4E-06	mg/kg/day	4.0E-03	mg/kg/day	9.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	9.4E-07	mg/kg/day	5.7E-03	(mg/kg/day)-1	5.E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			4.1E-02	mg/kg/day	1.0E-02	mg/kg/day	4.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			2.0E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	6.2E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-07	7.2E-05	mg/kg/day	6.0E-03	mg/kg/day	1.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.0E-04	mg/kg/day	9.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-07	1.3E-04	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			1.8E-03	mg/kg/day	3.0E-03	mg/kg/day	6.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.3E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	1.1E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	3.1E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			3.3E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	2.8E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	9.E-09	3.3E-06	mg/kg/day	1.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.6E-02	mg/kg/day	1.0E-01	mg/kg/day	2.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	3.8E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	8.E-07	8.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			4.1E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	1.8E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	6.0E-03	mg/kg/day	4.E-03
				TOLUENE	3.656	mg/l	NC		NC			8.0E-02	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		NA		
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		5.0E-04	mg/kg/day	
				VINYL CHLORIDE	0.0466	mg/l	1.4E-05	mg/kg/day	1.4E+00	(mg/kg/day)-1	2.E-05	1.6E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	2.0E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-08	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.5E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	5.4E-05	mg/kg/day				6.3E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.2E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-07	4.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	3.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	6.E-08	4.5E-08	mg/kg/day	3.0E-05	mg/kg/day	1.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	9.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.1E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-05	mg/kg/day	6.E-02
				BARIUM	0.362	mg/l	NC		NC			1.5E-04	mg/kg/day	1.4E-02	mg/kg/day	1.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.6E-06	mg/kg/day	1.4E-05	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			3.4E-05	mg/kg/day	2.5E-05	mg/kg/day	1.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			2.2E-02	mg/kg/day	4.0E-02	mg/kg/day	6.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			3.2E-04	mg/kg/day	5.6E-03	mg/kg/day	6.E-02
				MERCURY	0.00086978	mg/l	NC		NC			3.7E-07	mg/kg/day	2.1E-05	mg/kg/day	2.E-02
				NICKEL	0.24	mg/l	NC		NC			2.0E-05	mg/kg/day	8.0E-04	mg/kg/day	3.E-02
				SELENIUM	0.00744	mg/l	NC		NC			3.1E-06	mg/kg/day	5.0E-03	mg/kg/day	6.E-04
				SILVER	0.00262	mg/l	NC		NC			6.6E-07	mg/kg/day	2.0E-04	mg/kg/day	3.E-03
				THALLIUM	0.00788	mg/l	NC		NC			3.3E-06	mg/kg/day	1.0E-05	mg/kg/day	3.E-01
				VANADIUM	0.397	mg/l	NC		NC			1.7E-04	mg/kg/day	1.3E-04	mg/kg/day	1.E+00
				ZINC	223.1	mg/l	NC		NC			5.6E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								5.E-05					1.E+01
		EXPOSURE POINT TOTAL									8.E-04					3.E+02
	EXPOSURE MEDIUM TOTAL										8.E-04					3.E+02

TABLE G-5
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.6E-01	ug/m3	5.8E-05	(ug/m3)-1	3.E-05	5.4E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.2E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	1.3E+00	ug/m3	2.0E-01	ug/m3	7.E+00
				1,1-DICHLOROETHANE			4.5E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	5.3E+00	ug/m3	5.0E+02	ug/m3	1.E-02
				1,2,3-TRICHLOROBENZENE			NC		NC			6.4E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.0E+03	ug/m3	2.0E+00	ug/m3	5.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			6.0E+01	ug/m3	7.0E+00	ug/m3	9.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			5.6E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			1.1E+03	ug/m3	2.0E+02	ug/m3	5.E+00
				1,2-DICHLOROETHANE			4.8E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	5.6E+01	ug/m3	7.0E+00	ug/m3	8.E+00
				1,2-DICHLOROETHYLENE			NC		NC			1.8E+02	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			4.7E+01	ug/m3	4.0E+00	ug/m3	1.E+01
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			6.6E+01	ug/m3	6.0E+01	ug/m3	1.E+00
				1,3,5-TRIMETHYLBENZENE			NC		NC			1.9E+01	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.8E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	5.6E+02	ug/m3	8.0E+02	ug/m3	7.E-01
				1-CHLOROBUTANE			NC		NC			6.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			2.2E+02	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			7.4E+01	ug/m3	7.8E-06	(ug/m3)-1	6.E-04	8.6E+02	ug/m3	3.0E+01	ug/m3	3.E+01
				CHLOROBENZENE			NC		NC			3.4E+03	ug/m3	5.0E+01	ug/m3	7.E+01
				CHLOROFORM			1.2E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	1.4E+00	ug/m3	9.8E+01	ug/m3	1.E-02
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			8.7E+02	ug/m3	1.0E+03	ug/m3	9.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			4.2E+02	ug/m3	1.0E-08	(ug/m3)-1	4.E-06	9.2E+02	ug/m3	6.0E+02	ug/m3	2.E+00
				METHYL-T-BUTYL ETHER			2.4E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	2.8E+01	ug/m3	3.0E+03	ug/m3	9.E-03
				NAPHTHALENE			NC		NC			2.0E+01	ug/m3	3.0E+00	ug/m3	7.E+00
				O-XYLENE			NC		NC			6.7E+02	ug/m3	1.0E+02	ug/m3	7.E+00
				P-CHLOROTOLUENE			NC		NC			3.7E+02	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.1E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	1.3E+00	ug/m3	4.0E+01	ug/m3	3.E-02
				TOLUENE			NC		NC			8.1E+03	ug/m3	5.0E+03	ug/m3	2.E+00
				TRICHLOROETHYLENE			6.9E+00	ug/m3	1.0E-06	(ug/m3)-1	7.E-06	1.5E+01	ug/m3	NA		
				TRICHLOROETHYLENE			1.3E+00	ug/m3	3.1E-06	(ug/m3)-1	4.E-06	1.5E+01	ug/m3	2.0E+00	ug/m3	8.E+00
				VINYL CHLORIDE			1.1E+01	ug/m3	8.8E-06	(ug/m3)-1	9.E-05	1.2E+02	ug/m3	1.0E+02	ug/m3	1.E+00
				XYLENES,TOTAL			NC		NC			8.2E+02	ug/m3	1.0E+02	ug/m3	8.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			1.7E+00	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			9.5E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			1.5E+00	ug/m3	3.0E-01	ug/m3	5.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					7.E+02
		EXPOSURE POINT TOTAL									1.E-03					7.E+02
GROUNDWATER TOTAL											**2.E-03**					**1.E+03**

TABLE G-5
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-2 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	8.5E-07	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-07	9.9E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			1.4E-03	mg/kg/day	8.0E-04	mg/kg/day	2.E+00
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			3.3E-03	mg/kg/day	1.0E-02	mg/kg/day	3.E-01
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			4.1E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			2.3E-03	mg/kg/day	9.0E-02	mg/kg/day	3.E-02
				1,2-DICHLOROETHANE	0.932	mg/kg	1.0E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	9.E-08	1.2E-05	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				1,2-DICHLOROPROPANE	1.802	mg/kg	2.0E-06	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-08	2.3E-05	mg/kg/day	9.0E-02	mg/kg/day	3.E-04
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			8.4E-06	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				1,4-DICHLOROBENZENE	6.391	mg/kg	7.0E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	4.E-08	8.2E-05	mg/kg/day	7.0E-02	mg/kg/day	1.E-03
				BENZENE	2.72	mg/kg	3.0E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-07	3.5E-05	mg/kg/day	4.0E-03	mg/kg/day	9.E-03
				CHLOROBENZENE	6.345	mg/kg	NC		NC			8.1E-05	mg/kg/day	2.0E-02	mg/kg/day	4.E-03
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			2.7E-03	mg/kg/day	NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-01	mg/kg/day	1.E-03
				METHYLENE CHLORIDE	6.393	mg/kg	3.7E-05	mg/kg/day	2.0E-03	(mg/kg/day)-1	7.E-08	8.2E-05	mg/kg/day	6.0E-03	mg/kg/day	1.E-02
				O-XYLENE	15.15	mg/kg	NC		NC			1.9E-04	mg/kg/day	2.0E-01	mg/kg/day	1.E-03
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			4.0E-06	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	8.2E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	2.E-09	9.5E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	198.7	mg/kg	NC		NC			2.5E-03	mg/kg/day	8.0E-02	mg/kg/day	3.E-02
				TRICHLOROETHYLENE	1.638	mg/kg	9.5E-06	mg/kg/day	9.3E-03	(mg/kg/day)-1	9.E-08	2.1E-05	mg/kg/day	NA		
				TRICHLOROETHYLENE	1.638	mg/kg	1.8E-06	mg/kg/day	3.7E-02	(mg/kg/day)-1	7.E-08	2.1E-05	mg/kg/day	5.0E-04	mg/kg/day	4.E-02
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			7.5E-04	mg/kg/day	2.0E-01	mg/kg/day	4.E-03
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			2.7E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				BENZO(A)ANTHRACENE	0.0942	mg/kg	5.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				BENZO(A)PYRENE	0.102	mg/kg	5.9E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-06	1.3E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				BENZO(B)FLUORANTHENE	0.129	mg/kg	7.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-07	1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Biphenyl	500	mg/kg	NC		NC			6.4E-03	mg/kg/day	5.0E-01	mg/kg/day	1.E-02
				NAPHTHALENE	0.665	mg/kg	NC		NC			8.5E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				ALUMINUM	6708	mg/kg	NC		NC			8.6E-02	mg/kg/day	1.0E+00	mg/kg/day	9.E-02
				ANTIMONY	1.114	mg/kg	NC		NC			1.4E-05	mg/kg/day	4.0E-04	mg/kg/day	4.E-02
				ARSENIC	4.564	mg/kg	3.0E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-06	3.5E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				CHROMIUM	26.86	mg/kg	NC		NC			3.4E-04	mg/kg/day	1.5E+00	mg/kg/day	2.E-04
				COBALT	2.796	mg/kg	NC		NC			3.6E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				COPPER	77.49	mg/kg	NC		NC			9.9E-04	mg/kg/day	4.0E-02	mg/kg/day	2.E-02
				MERCURY	0.584	mg/kg	NC		NC			7.5E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				THALLIUM	1.135	mg/kg	NC		NC			1.5E-05	mg/kg/day	1.0E-05	mg/kg/day	1.E+00
				VANADIUM	40.25	mg/kg	NC		NC			5.1E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
			EXPOSURE ROUTE TOTAL								1.E-05					4.E+00

TABLE G-5
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			9.3E-04	mg/kg/day	1.0E-02	mg/kg/day	9.E-02
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			6.4E-04	mg/kg/day	9.0E-02	mg/kg/day	7.E-03
				1,2-DICHLOROETHANE	0.932	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	1.802	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			2.3E-06	mg/kg/day	3.0E-03	mg/kg/day	8.E-04
				1,4-DICHLOROBENZENE	6.391	mg/kg	2.0E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-08	2.3E-05	mg/kg/day	7.0E-02	mg/kg/day	3.E-04
				BENZENE	2.72	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	6.345	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	6.393	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	15.15	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	198.7	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	1.638	mg/kg	--		--			--		NA		
				TRICHLOROETHYLENE	1.638	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			7.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				BENZO(A)ANTHRACENE	0.0942	mg/kg	2.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	4.4E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				BENZO(A)PYRENE	0.102	mg/kg	2.2E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	4.7E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				BENZO(B)FLUORANTHENE	0.129	mg/kg	2.7E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	6.0E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Biphenyl	500	mg/kg	NC		NC			1.8E-03	mg/kg/day	5.0E-01	mg/kg/day	4.E-03
				NAPHTHALENE	0.665	mg/kg	NC		NC			3.1E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				ALUMINUM	6708	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	1.114	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	4.564	mg/kg	4.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	4.9E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				CHROMIUM	26.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	2.796	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	77.49	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.584	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	1.135	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	40.25	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								3.E-06					1.E-01
		EXPOSURE POINT TOTAL									1.E-05					4.E+00
	EXPOSURE MEDIUM TOTAL										1.E-05					4.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**1.E+03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-6
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	2.5E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-06	7.2E-05	mg/kg/day	2.0E-02	mg/kg/day	4.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.6E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-07	1.6E-05	mg/kg/day	4.0E-03	mg/kg/day	4.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	2.0E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-07	6.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			8.6E-03	mg/kg/day	8.0E-04	mg/kg/day	1.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.4E-02	mg/kg/day	1.0E-02	mg/kg/day	1.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			8.3E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			6.1E-03	mg/kg/day	2.0E-03	mg/kg/day	3.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			1.4E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	2.2E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-05	6.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			2.0E-03	mg/kg/day	9.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-06	5.6E-04	mg/kg/day	9.0E-02	mg/kg/day	6.E-03
				1,2-TRANS-DICHLOROETHYLEN	0.0265	mg/l	NC		NC			7.3E-04	mg/kg/day	2.0E-02	mg/kg/day	4.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			2.6E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.9E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	2.5E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-05	7.2E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			8.0E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			2.9E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			3.8E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	3.4E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-04	1.0E-02	mg/kg/day	4.0E-03	mg/kg/day	2.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			4.1E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	5.5E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-07	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			8.5E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			5.5E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.1E-02	mg/kg/day	1.0E-01	mg/kg/day	1.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			4.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.E-03
				METHYLENE CHLORIDE	0.341	mg/l	3.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	6.E-06	9.3E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	1.3E-04	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-07	3.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			2.8E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				O-XYLENE	0.32	mg/l	NC		NC			8.8E-03	mg/kg/day	2.0E-01	mg/kg/day	4.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			4.8E-03	mg/kg/day	2.0E-02	mg/kg/day	2.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			5.7E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			3.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			3.2E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	5.4E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	1.E-08	1.6E-05	mg/kg/day	6.0E-03	mg/kg/day	3.E-03
				TOLUENE	3.656	mg/l	NC		NC			1.0E-01	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	6.0E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-06	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				VINYL CHLORIDE	0.0466	mg/l	4.4E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	3.E-04	1.3E-03	mg/kg/day	3.0E-03	mg/kg/day	4.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			9.7E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				1,4-DIOXANE	0.00991	mg/l	9.3E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	9.E-06	2.7E-04	mg/kg/day	3.0E-02	mg/kg/day	9.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			4.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			2.5E-05	mg/kg/day	4.0E-03	mg/kg/day	6.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			9.5E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	4.4E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	3.E-05	1.3E-02	mg/kg/day	7.0E-03	mg/kg/day	2.E+00
				Biphenyl	0.00537	mg/l	NC		NC			1.5E-04	mg/kg/day	5.0E-01	mg/kg/day	3.E-04
				BIS(2-ETHYLHEXYL)PHTHALAT	0.00513	mg/l	4.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				ALDRIN	0.0000079	mg/l	7.4E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-06	2.2E-07	mg/kg/day	3.0E-05	mg/kg/day	7.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	9.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	2.7E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				ALUMINUM	55.28	mg/l	NC		NC			1.5E+00	mg/kg/day	1.0E+00	mg/kg/day	2.E+00
				ARSENIC	0.0251	mg/l	2.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-04	6.9E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			2.3E-04	mg/kg/day	4.0E-04	mg/kg/day	6.E-01
				BARIUM	0.362	mg/l	NC		NC			9.9E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-03	mg/kg/day	5.E-02
				CADMIUM	0.0808	mg/l	NC		NC			2.2E-03	mg/kg/day	1.0E-03	mg/kg/day	2.E+00
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-02	mg/kg/day	1.5E+00	mg/kg/day	8.E-03
				COBALT	0.0745	mg/l	NC		NC			2.0E-03	mg/kg/day	3.0E-04	mg/kg/day	7.E+00
				COPPER	52.99	mg/l	NC		NC			1.5E+00	mg/kg/day	4.0E-02	mg/kg/day	4.E+01
				IRON	342.6	mg/l	NC		NC			9.4E+00	mg/kg/day	7.0E-01	mg/kg/day	1.E+01
				LEAD	0.135	mg/l	1.3E-03	mg/kg/day	ND			3.7E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				MERCURY	0.00086978	mg/l	NC		NC			2.4E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				NICKEL	0.24	mg/l	NC		NC			6.6E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				SELENIUM	0.00744	mg/l	NC		NC			2.0E-04	mg/kg/day	5.0E-03	mg/kg/day	4.E-02
				SILVER	0.00262	mg/l	NC		NC			7.2E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				THALLIUM	0.00788	mg/l	NC		NC			2.2E-04	mg/kg/day	1.0E-05	mg/kg/day	2.E+01
				VANADIUM	0.397	mg/l	NC		NC			1.1E-02	mg/kg/day	5.0E-03	mg/kg/day	2.E+00
				ZINC	223.1	mg/l	NC		NC			6.1E+00	mg/kg/day	3.0E-01	mg/kg/day	2.E+01
			EXPOSURE ROUTE TOTAL								9.E-04					1.E+02

TABLE G-6
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	3.1E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-07	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.2E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-08	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	1.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-09	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.8E-02	mg/kg/day	1.0E-02	mg/kg/day	2.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			9.1E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-06	3.1E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			1.7E-04	mg/kg/day	9.0E-03	mg/kg/day	2.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-07	5.6E-05	mg/kg/day	9.0E-02	mg/kg/day	6.E-04
				1,2-TRANS-DICHLOROETHYLEN	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.2E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.7E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	9.E-06	4.8E-03	mg/kg/day	7.0E-02	mg/kg/day	7.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	5.2E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-05	1.5E-03	mg/kg/day	4.0E-03	mg/kg/day	4.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	5.0E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	1.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			6.9E-03	mg/kg/day	1.0E-01	mg/kg/day	7.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-07	3.5E-04	mg/kg/day	6.0E-03	mg/kg/day	6.E-02
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.8E-04	mg/kg/day	2.0E-02	mg/kg/day	9.E-03
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.2E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-06	9.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	3.656	mg/l	NC		NC			3.5E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	1.0E-05	mg/kg/day				3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				VINYL CHLORIDE	0.0466	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	3.4E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-08	9.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			6.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	9.3E-05	mg/kg/day				2.7E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALAT	0.00513	mg/l	7.4E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-06	2.2E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				ALDRIN	0.0000079	mg/l	6.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			1.2E-06	mg/kg/day	6.0E-05	mg/kg/day	2.E-02
				BARIUM	0.362	mg/l	NC		NC			5.2E-05	mg/kg/day	1.4E-02	mg/kg/day	4.E-03
				BERYLLIUM	0.00373	mg/l	NC		NC			5.3E-07	mg/kg/day	1.4E-05	mg/kg/day	4.E-02
				CADMIUM	0.0808	mg/l	NC		NC			1.2E-05	mg/kg/day	2.5E-05	mg/kg/day	5.E-01
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			7.6E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			1.1E-04	mg/kg/day	5.6E-03	mg/kg/day	2.E-02
				MERCURY	0.00086978	mg/l	NC		NC			1.2E-07	mg/kg/day	2.1E-05	mg/kg/day	6.E-03
				NICKEL	0.24	mg/l	NC		NC			6.9E-06	mg/kg/day	8.0E-04	mg/kg/day	9.E-03
				SELENIUM	0.00744	mg/l	NC		NC			1.1E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				SILVER	0.00262	mg/l	NC		NC			2.2E-07	mg/kg/day	2.0E-04	mg/kg/day	1.E-03
				THALLIUM	0.00788	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	0.397	mg/l	NC		NC			5.7E-05	mg/kg/day	1.3E-04	mg/kg/day	4.E-01
				ZINC	223.1	mg/l	NC		NC			1.9E-02	mg/kg/day	3.0E-01	mg/kg/day	6.E-02
			EXPOSURE ROUTE TOTAL								4.E-05					5.E+00
		EXPOSURE POINT TOTAL									1.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					1.E+02

TABLE G-6
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.3E-01	ug/m3	5.8E-05	(ug/m3)-1	2.E-05	1.2E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.1E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	3.1E-01	ug/m3	2.0E-01	ug/m3	2.E+00
				1,1-DICHLOROETHANE			4.2E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	1.2E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				1,2,3-TRICHLOROBENZENE			NC		NC			1.5E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.4E+02	ug/m3	2.0E+00	ug/m3	1.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			1.4E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			1.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			2.5E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1,2-DICHLOROETHANE			4.5E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	1.3E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-DICHLOROETHYLENE			NC		NC			4.1E+01	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			1.1E+01	ug/m3	4.0E+00	ug/m3	3.E+00
				1,2-TRANS-DICHLOROETHYLEN			NC		NC			1.5E+01	ug/m3	6.0E+01	ug/m3	3.E-01
				1,3,5-TRIMETHYLBENZENE			NC		NC			4.3E+00	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.4E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	1.3E+02	ug/m3	8.0E+02	ug/m3	2.E-01
				1-CHLOROBUTANE			NC		NC			1.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			5.2E+01	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			6.9E+01	ug/m3	7.8E-06	(ug/m3)-1	5.E-04	2.0E+02	ug/m3	3.0E+01	ug/m3	7.E+00
				CHLOROBENZENE			NC		NC			7.8E+02	ug/m3	5.0E+01	ug/m3	2.E+01
				CHLOROFORM			1.1E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	3.3E-01	ug/m3	9.8E+01	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			2.0E+02	ug/m3	1.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			7.3E+01	ug/m3	1.0E-08	(ug/m3)-1	7.E-07	2.1E+02	ug/m3	6.0E+02	ug/m3	4.E-01
				METHYL-T-BUTYL ETHER			2.2E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	6.4E+00	ug/m3	3.0E+03	ug/m3	2.E-03
				NAPHTHALENE			NC		NC			4.6E+00	ug/m3	3.0E+00	ug/m3	2.E+00
				O-XYLENE			NC		NC			1.5E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				P-CHLOROTOLUENE			NC		NC			8.6E+01	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.0E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	3.0E-01	ug/m3	4.0E+01	ug/m3	7.E-03
				TOLUENE			NC		NC			1.9E+03	ug/m3	5.0E+03	ug/m3	4.E-01
				TRICHLOROETHYLENE			1.2E+00	ug/m3	4.1E-06	(ug/m3)-1	5.E-06	3.5E+00	ug/m3	2.0E+00	ug/m3	2.E+00
				VINYL CHLORIDE			9.7E+00	ug/m3	4.4E-06	(ug/m3)-1	4.E-05	2.8E+01	ug/m3	1.0E+02	ug/m3	3.E-01
				XYLENES,TOTAL			NC		NC			1.9E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			3.9E-01	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			2.2E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALAT			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			3.4E-01	ug/m3	3.0E-01	ug/m3	1.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02
GROUNDWATER TOTAL											**2.E-03**					**3.E+02**

TABLE G-6
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-2 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	3.6E-07	mg/kg/day	2.0E-01	(mg/kg/day)-1	7.E-08	1.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			1.5E-04	mg/kg/day	8.0E-04	mg/kg/day	2.E-01
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			3.6E-04	mg/kg/day	1.0E-02	mg/kg/day	4.E-02
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			4.4E-06	mg/kg/day	2.0E-03	mg/kg/day	2.E-03
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			2.5E-04	mg/kg/day	9.0E-02	mg/kg/day	3.E-03
				1,2-DICHLOROETHANE	0.932	mg/kg	4.4E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	4.E-08	1.3E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				1,2-DICHLOROPROPANE	1.802	mg/kg	8.5E-07	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-08	2.5E-06	mg/kg/day	9.0E-02	mg/kg/day	3.E-05
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			9.0E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				1,4-DICHLOROBENZENE	6.391	mg/kg	3.0E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-08	8.8E-06	mg/kg/day	7.0E-02	mg/kg/day	1.E-04
				BENZENE	2.72	mg/kg	1.3E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-08	3.7E-06	mg/kg/day	4.0E-03	mg/kg/day	9.E-04
				CHLOROBENZENE	6.345	mg/kg	NC		NC			8.7E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			2.9E-04	mg/kg/day	NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			1.5E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				METHYLENE CHLORIDE	6.393	mg/kg	3.0E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	6.E-09	8.8E-06	mg/kg/day	6.0E-03	mg/kg/day	1.E-03
				O-XYLENE	15.15	mg/kg	NC		NC			2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			4.2E-07	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	3.5E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-10	1.0E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				TOLUENE	198.7	mg/kg	NC		NC			2.7E-04	mg/kg/day	8.0E-02	mg/kg/day	3.E-03
				TRICHLOROETHYLENE	1.638	mg/kg	7.7E-07	mg/kg/day	4.6E-02	(mg/kg/day)-1	4.E-08	2.2E-06	mg/kg/day	5.0E-04	mg/kg/day	4.E-03
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			8.0E-05	mg/kg/day	2.0E-01	mg/kg/day	4.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				BENZO(A)ANTHRACENE	0.0942	mg/kg	4.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.3E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.102	mg/kg	4.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(B)FLUORANTHENE	0.129	mg/kg	6.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	1.8E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Biphenyl	500	mg/kg	NC		NC			6.8E-04	mg/kg/day	5.0E-01	mg/kg/day	1.E-03
				NAPHTHALENE	0.665	mg/kg	NC		NC			9.1E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				ALUMINUM	6708	mg/kg	NC		NC			9.2E-03	mg/kg/day	1.0E+00	mg/kg/day	9.E-03
				ANTIMONY	1.114	mg/kg	NC		NC			1.5E-06	mg/kg/day	4.0E-04	mg/kg/day	4.E-03
				ARSENIC	4.564	mg/kg	1.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.8E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	26.86	mg/kg	NC		NC			3.7E-05	mg/kg/day	1.5E+00	mg/kg/day	2.E-05
				COBALT	2.796	mg/kg	NC		NC			3.8E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				COPPER	77.49	mg/kg	NC		NC			1.1E-04	mg/kg/day	4.0E-02	mg/kg/day	3.E-03
				MERCURY	0.584	mg/kg	NC		NC			8.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				THALLIUM	1.135	mg/kg	NC		NC			1.6E-06	mg/kg/day	1.0E-05	mg/kg/day	2.E-01
				VANADIUM	40.25	mg/kg	NC		NC			5.5E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
			EXPOSURE ROUTE TOTAL								3.E-06					5.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.772	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	107	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	260.1	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-02	mg/kg/day	1.E-02
				1,2-CIS-DICHLOROETHYLENE	3.2	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	179.6	mg/kg	NC		NC			9.8E-05	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-DICHLOROETHANE	0.932	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	1.802	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.656	mg/kg	NC		NC			3.6E-07	mg/kg/day	3.0E-03	mg/kg/day	1.E-04
				1,4-DICHLOROBENZENE	6.391	mg/kg	1.2E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	6.E-09	3.5E-06	mg/kg/day	7.0E-02	mg/kg/day	5.E-05
				BENZENE	2.72	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	6.345	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	10.69	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	6.393	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	15.15	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.30895	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.744	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	198.7	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	1.638	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	58.55	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				BENZO(A)ANTHRACENE	0.0942	mg/kg	2.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	6.7E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.102	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	7.2E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(B)FLUORANTHENE	0.129	mg/kg	3.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	9.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Biphenyl	500	mg/kg	NC		NC			2.7E-04	mg/kg/day	5.0E-01	mg/kg/day	5.E-04
				NAPHTHALENE	0.665	mg/kg	NC		NC			4.7E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	6708	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	1.114	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	4.564	mg/kg	2.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	7.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	26.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	2.796	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	77.49	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.584	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	1.135	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	40.25	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								6.E-07					2.E-02
		EXPOSURE POINT TOTAL									3.E-06					5.E-01
	EXPOSURE MEDIUM TOTAL										3.E-06					5.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDI**				**3.E+02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-7
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-2 FT)	INGESTION	ETHYLBENZENE	ND	mg/kg	NC		NC					1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			1.2E-07	mg/kg/day	2.0E-01	mg/kg/day	6.E-07
				BENZO(A)ANTHRACENE	0.261	mg/kg	2.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.2E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.334	mg/kg	3.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	1.5E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	1.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	5.3E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Biphenyl	1.427	mg/kg	NC		NC			6.6E-07	mg/kg/day	5.0E-01	mg/kg/day	1.E-06
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	7.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.7E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	2.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.2E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				ALUMINUM	10864	mg/kg	NC		NC			5.0E-03	mg/kg/day	1.0E+00	mg/kg/day	5.E-03
				ARSENIC	3.997	mg/kg	9.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	19.9	mg/kg	NC		NC			9.2E-06	mg/kg/day	1.5E+00	mg/kg/day	6.E-06
				COBALT	3.301	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				COPPER	260	mg/kg	NC		NC			1.2E-04	mg/kg/day	4.0E-02	mg/kg/day	3.E-03
				MANGANESE	103.4	mg/kg	NC		NC			4.8E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				THALLIUM	1.262	mg/kg	NC		NC			5.8E-07	mg/kg/day	1.0E-05	mg/kg/day	6.E-02
				VANADIUM	26.36	mg/kg	NC		NC			1.2E-05	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
			EXPOSURE ROUTE TOTAL								5.E-07					8.E-02
			DERMAL	ETHYLBENZENE	ND	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.261	mg/kg	1.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.2E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.334	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	6.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	3.2E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Biphenyl	1.427	mg/kg	NC		NC			3.0E-07	mg/kg/day	5.0E-01	mg/kg/day	6.E-07
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	4.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.2E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	1.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.4E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				ALUMINUM	10864	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.997	mg/kg	2.2E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				CHROMIUM	19.9	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.301	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	260	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	103.4	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	1.262	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	26.36	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								3.E-07					9.E-04
		EXPOSURE POINT TOTAL									8.E-07					8.E-02
	EXPOSURE MEDIUM TOTAL										8.E-07					8.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**8.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**8.E-02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 05/09/2015
Checked by: BJR 4/10/2015

TABLE G-8
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-2 FT)	INGESTION	ETHYLBENZENE	ND	mg/kg	NC		NC					1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			4.9E-08	mg/kg/day	2.0E-01	mg/kg/day	2.E-07
				BENZO(A)ANTHRACENE	0.261	mg/kg	8.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.8E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				BENZO(A)PYRENE	0.334	mg/kg	1.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	6.1E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	3.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Biphenyl	1.427	mg/kg	NC		NC			2.6E-07	mg/kg/day	5.0E-01	mg/kg/day	5.E-07
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	2.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	8.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.9E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				ALUMINUM	10864	mg/kg	NC		NC			2.0E-03	mg/kg/day	1.0E+00	mg/kg/day	2.E-03
				ARSENIC	3.997	mg/kg	7.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	4.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	19.9	mg/kg	NC		NC			3.6E-06	mg/kg/day	1.5E+00	mg/kg/day	2.E-06
				COBALT	3.301	mg/kg	NC		NC			6.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				COPPER	260	mg/kg	NC		NC			4.8E-05	mg/kg/day	4.0E-02	mg/kg/day	1.E-03
				MANGANESE	103.4	mg/kg	NC		NC			1.9E-05	mg/kg/day	1.4E-01	mg/kg/day	1.E-04
				THALLIUM	1.262	mg/kg	NC		NC			2.3E-07	mg/kg/day	1.0E-05	mg/kg/day	2.E-02
				VANADIUM	26.36	mg/kg	NC		NC			4.8E-06	mg/kg/day	5.0E-03	mg/kg/day	1.E-03
			EXPOSURE ROUTE TOTAL								2.E-07					3.E-02
			DERMAL	ETHYLBENZENE	ND	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.261	mg/kg	4.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.5E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				BENZO(A)PYRENE	0.334	mg/kg	5.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(B)FLUORANTHENE	1.148	mg/kg	1.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Biphenyl	1.427	mg/kg	NC		NC			1.1E-07	mg/kg/day	5.0E-01	mg/kg/day	2.E-07
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	1.3E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	7.8E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	4.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	2.6E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				ALUMINUM	10864	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.997	mg/kg	1.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-08	8.9E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				CHROMIUM	19.9	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.301	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	260	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	103.4	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	1.262	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	26.36	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								9.E-08					3.E-04
		EXPOSURE POINT TOTAL									3.E-07					3.E-02
	EXPOSURE MEDIUM TOTAL										3.E-07					3.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**3.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E-02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-9
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.6E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-9
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 2 (0-2 FT)	INGESTION	ETHYLBENZENE	ND	mg/kg	NC		NC					1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			2.4E-07	mg/kg/day	2.0E-01	mg/kg/day	1.E-06
				BENZO(A)ANTHRACENE	0.261	mg/kg	8.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	2.3E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				BENZO(A)PYRENE	0.334	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	2.9E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	3.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-07	1.0E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				Biphenyl	1.427	mg/kg	NC		NC			1.3E-06	mg/kg/day	5.0E-01	mg/kg/day	3.E-06
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	2.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	7.1E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	8.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	2.3E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				ALUMINUM	10864	mg/kg	NC		NC			9.6E-03	mg/kg/day	1.0E+00	mg/kg/day	1.E-02
				ARSENIC	3.997	mg/kg	7.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				CHROMIUM	19.9	mg/kg	NC		NC			1.8E-05	mg/kg/day	1.5E+00	mg/kg/day	1.E-05
				COBALT	3.301	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				COPPER	260	mg/kg	NC		NC			2.3E-04	mg/kg/day	4.0E-02	mg/kg/day	6.E-03
				MANGANESE	103.4	mg/kg	NC		NC			9.1E-05	mg/kg/day	1.4E-01	mg/kg/day	7.E-04
				THALLIUM	1.262	mg/kg	NC		NC			1.1E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	26.36	mg/kg	NC		NC			2.3E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
			EXPOSURE ROUTE TOTAL								2.E-06					1.E-01
			DERMAL	ETHYLBENZENE	ND	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.261	mg/kg	7.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(A)PYRENE	0.334	mg/kg	9.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	2.5E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	3.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	8.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Biphenyl	1.427	mg/kg	NC		NC			8.3E-07	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	6.1E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	7.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	2.0E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				ALUMINUM	10864	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.997	mg/kg	2.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	7.0E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	19.9	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.301	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	260	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	103.4	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	1.262	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	26.36	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								2.E-06					2.E-03
		EXPOSURE POINT TOTAL									4.E-06					2.E-01
	EXPOSURE MEDIUM TOTAL										4.E-06					2.E-01
	AIR	DUST AT SITE	DUST INHALATION	ETHYLBENZENE	ND	mg/kg	NC		NC					1.0E+03	ug/m3	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			4.1E-08	ug/m3	1.0E+02	ug/m3	4.E-10
				BENZO(A)ANTHRACENE	0.261	mg/kg	1.4E-08	ug/m3	1.1E-04	(ug/m3)-1	2.E-12	3.9E-08	ug/m3	NA		
				BENZO(A)PYRENE	0.334	mg/kg	1.8E-08	ug/m3	1.1E-03	(ug/m3)-1	2.E-11	5.0E-08	ug/m3	NA		
				BENZO(B)FLUORANTHENE	1.148	mg/kg	6.2E-08	ug/m3	1.1E-04	(ug/m3)-1	7.E-12	1.7E-07	ug/m3	NA		
				Biphenyl	1.427	mg/kg	NC		NC			2.2E-07	ug/m3	NA		
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	4.4E-09	ug/m3	1.2E-03	(ug/m3)-1	5.E-12	1.2E-08	ug/m3	NA		
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	1.4E-08	ug/m3	1.1E-04	(ug/m3)-1	2.E-12	4.0E-08	ug/m3	NA		
				ALUMINUM	10864	mg/kg	NC		NC			1.6E-03	ug/m3	5.0E+00	ug/m3	3.E-04
				ARSENIC	3.997	mg/kg	2.2E-07	ug/m3	4.3E-03	(ug/m3)-1	9.E-10	6.0E-07	ug/m3	1.5E-02	ug/m3	4.E-05
				CHROMIUM	19.9	mg/kg	NC		NC			3.0E-06	ug/m3	NA		
				COBALT	3.301	mg/kg	1.8E-07	ug/m3	9.0E-03	(ug/m3)-1	2.E-09	5.0E-07	ug/m3	6.0E-03	ug/m3	8.E-05
				COPPER	260	mg/kg	NC		NC			3.9E-05	ug/m3	NA		
				MANGANESE	103.4	mg/kg	NC		NC			1.6E-05	ug/m3	5.0E-02	ug/m3	3.E-04
				THALLIUM	1.262	mg/kg	NC		NC			1.9E-07	ug/m3	NA		
				VANADIUM	26.36	mg/kg	NC		NC			4.0E-06	ug/m3	1.0E-01	ug/m3	4.E-05
			EXPOSURE ROUTE TOTAL								3.E-09					8.E-04
		EXPOSURE POINT TOTAL									3.E-09					8.E-04
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-10
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-10
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 2 (0-2 FT)	INGESTION	ETHYLBENZENE	ND	mg/kg	NC		NC					1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			1.3E-07	mg/kg/day	2.0E-01	mg/kg/day	7.E-07
				BENZO(A)ANTHRACENE	0.261	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.3E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.334	mg/kg	5.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	2.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	5.6E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Biphenyl	1.427	mg/kg	NC		NC			7.0E-07	mg/kg/day	5.0E-01	mg/kg/day	1.E-06
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	1.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	4.0E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	4.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.3E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				ALUMINUM	10864	mg/kg	NC		NC			5.3E-03	mg/kg/day	1.0E+00	mg/kg/day	5.E-03
				ARSENIC	3.997	mg/kg	4.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	19.9	mg/kg	NC		NC			9.7E-06	mg/kg/day	1.5E+00	mg/kg/day	6.E-06
				COBALT	3.301	mg/kg	NC		NC			1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				COPPER	260	mg/kg	NC		NC			1.3E-04	mg/kg/day	4.0E-02	mg/kg/day	3.E-03
				MANGANESE	103.4	mg/kg	NC		NC			5.1E-05	mg/kg/day	1.4E-01	mg/kg/day	4.E-04
				THALLIUM	1.262	mg/kg	NC		NC			6.2E-07	mg/kg/day	1.0E-05	mg/kg/day	6.E-02
				VANADIUM	26.36	mg/kg	NC		NC			1.3E-05	mg/kg/day	5.0E-03	mg/kg/day	3.E-03
			EXPOSURE ROUTE TOTAL								1.E-06					8.E-02
			DERMAL	ETHYLBENZENE	ND	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.261	mg/kg	2.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	7.7E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.334	mg/kg	3.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	3.4E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				Biphenyl	1.427	mg/kg	NC		NC			3.2E-07	mg/kg/day	5.0E-01	mg/kg/day	6.E-07
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	8.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	2.4E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	2.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	7.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				ALUMINUM	10864	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.997	mg/kg	9.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	2.7E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				CHROMIUM	19.9	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.301	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	260	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	103.4	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	1.262	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	26.36	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								6.E-07					9.E-04
		EXPOSURE POINT TOTAL									2.E-06					8.E-02
	EXPOSURE MEDIUM TOTAL										2.E-06					8.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-11
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.4E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	3.E-06	1.7E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	3.3E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-07	3.8E-05	mg/kg/day	4.0E-03	mg/kg/day	9.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	1.2E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	7.E-08	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			2.0E-02	mg/kg/day	8.0E-04	mg/kg/day	3.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			3.3E-02	mg/kg/day	1.0E-02	mg/kg/day	3.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			1.9E-03	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			1.4E-02	mg/kg/day	2.0E-03	mg/kg/day	7.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			3.2E-02	mg/kg/day	9.0E-02	mg/kg/day	4.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.3E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-05	1.5E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.6E-03	mg/kg/day	9.0E-03	mg/kg/day	5.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-06	1.3E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-02
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	8.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			6.1E-04	mg/kg/day	1.0E-02	mg/kg/day	6.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			2.1E-03	mg/kg/day	3.0E-03	mg/kg/day	7.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.4E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-06	1.7E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			1.9E-02	mg/kg/day	4.0E-02	mg/kg/day	5.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			6.8E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			8.9E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	2.0E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-04	2.3E-02	mg/kg/day	4.0E-03	mg/kg/day	6.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			9.6E-02	mg/kg/day	2.0E-02	mg/kg/day	5.E+00
				CHLOROFORM	0.0005829	mg/l	3.2E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	1.E-07	3.7E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			2.0E-03	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			1.3E-03	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			2.7E-02	mg/kg/day	1.0E-01	mg/kg/day	3.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.1E-03	mg/kg/day	2.0E-01	mg/kg/day	6.E-03
				METHYLENE CHLORIDE	0.341	mg/l	9.9E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-05	2.2E-02	mg/kg/day	6.0E-03	mg/kg/day	4.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	7.5E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-07	8.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			6.5E-04	mg/kg/day	2.0E-02	mg/kg/day	3.E-02
				O-XYLENE	0.32	mg/l	NC		NC			2.0E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.1E-02	mg/kg/day	2.0E-02	mg/kg/day	6.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			1.3E-04	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			7.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			7.4E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.1E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-09	3.6E-05	mg/kg/day	6.0E-03	mg/kg/day	6.E-03
				TOLUENE	3.656	mg/l	NC		NC			2.3E-01	mg/kg/day	8.0E-02	mg/kg/day	3.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	1.9E-04	mg/kg/day	9.3E-03	(mg/kg/day)-1	2.E-06	4.1E-04	mg/kg/day	NA		
				TRICHLOROETHYLENE	0.00641	mg/l	3.5E-05	mg/kg/day	3.7E-02	(mg/kg/day)-1	1.E-06	4.1E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				VINYL CHLORIDE	0.0466	mg/l	2.6E-04	mg/kg/day	1.4E+00	(mg/kg/day)-1	4.E-04	3.0E-03	mg/kg/day	3.0E-03	mg/kg/day	1.E+00
				XYLENES,TOTAL	0.354	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				1,4-DIOXANE	0.00991	mg/l	5.4E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	5.E-06	6.3E-04	mg/kg/day	3.0E-02	mg/kg/day	2.E-02
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			5.8E-05	mg/kg/day	4.0E-03	mg/kg/day	1.E-02
				3-NITROANILINE	0.00346	mg/l	NC		NC			2.2E-04	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	2.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-05	3.0E-02	mg/kg/day	7.0E-03	mg/kg/day	4.E+00
				Biphenyl	0.00537	mg/l	NC		NC			3.4E-04	mg/kg/day	5.0E-01	mg/kg/day	7.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	2.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-07	3.3E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	4.3E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	3.0E-05	mg/kg/day	2.E-02
				HEPTACHLOR EPOXIDE	0.00001	mg/l	5.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				ALUMINUM	55.28	mg/l	NC		NC			3.5E+00	mg/kg/day	1.0E+00	mg/kg/day	4.E+00
				ARSENIC	0.0251	mg/l	1.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-04	1.6E-03	mg/kg/day	3.0E-04	mg/kg/day	5.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			5.3E-04	mg/kg/day	4.0E-04	mg/kg/day	1.E+00
				BARIUM	0.362	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				BERYLLIUM	0.00373	mg/l	NC		NC			2.4E-04	mg/kg/day	2.0E-03	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			5.2E-03	mg/kg/day	1.0E-03	mg/kg/day	5.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.0E-02	mg/kg/day	1.5E+00	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			4.8E-03	mg/kg/day	3.0E-04	mg/kg/day	2.E+01
				COPPER	52.99	mg/l	NC		NC			3.4E+00	mg/kg/day	4.0E-02	mg/kg/day	8.E+01
				IRON	342.6	mg/l	NC		NC			2.2E+01	mg/kg/day	7.0E-01	mg/kg/day	3.E+01
				LEAD	0.135	mg/l	7.4E-04	mg/kg/day	ND			8.6E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			4.9E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				MERCURY	0.00086978	mg/l	NC		NC			5.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				NICKEL	0.24	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	8.E-01
				SELENIUM	0.00744	mg/l	NC		NC			4.8E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
				SILVER	0.00262	mg/l	NC		NC			1.7E-04	mg/kg/day	5.0E-03	mg/kg/day	3.E-02
				THALLIUM	0.00788	mg/l	NC		NC			5.0E-04	mg/kg/day	1.0E-05	mg/kg/day	5.E+01
				VANADIUM	0.397	mg/l	NC		NC			2.5E-02	mg/kg/day	5.0E-03	mg/kg/day	5.E+00
				ZINC	223.1	mg/l	NC		NC			1.4E+01	mg/kg/day	3.0E-01	mg/kg/day	5.E+01

TABLE G-11
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								7.E-04					3.E+02
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.8E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-07	2.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.9E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-08	3.4E-06	mg/kg/day	4.0E-03	mg/kg/day	9.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	9.4E-07	mg/kg/day	5.7E-03	(mg/kg/day)-1	5.E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			4.1E-02	mg/kg/day	1.0E-02	mg/kg/day	4.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			2.0E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	6.2E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-07	7.2E-05	mg/kg/day	6.0E-03	mg/kg/day	1.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.0E-04	mg/kg/day	9.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-07	1.3E-04	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			1.8E-03	mg/kg/day	3.0E-03	mg/kg/day	6.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.3E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	1.1E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	3.1E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			3.3E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	2.8E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	9.E-09	3.3E-06	mg/kg/day	1.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.6E-02	mg/kg/day	1.0E-01	mg/kg/day	2.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	3.8E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	8.E-07	8.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			4.1E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	1.8E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	6.0E-03	mg/kg/day	4.E-03
				TOLUENE	3.656	mg/l	NC		NC			8.0E-02	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		NA		
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		5.0E-04	mg/kg/day	
				VINYL CHLORIDE	0.0466	mg/l	1.4E-05	mg/kg/day	1.4E+00	(mg/kg/day)-1	2.E-05	1.6E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	2.0E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-08	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.5E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	5.4E-05	mg/kg/day				6.3E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.2E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-07	4.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	3.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	6.E-08	4.5E-08	mg/kg/day	3.0E-05	mg/kg/day	1.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	9.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.1E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-05	mg/kg/day	6.E-02
				BARIUM	0.362	mg/l	NC		NC			1.5E-04	mg/kg/day	1.4E-02	mg/kg/day	1.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.6E-06	mg/kg/day	1.4E-05	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			3.4E-05	mg/kg/day	2.5E-05	mg/kg/day	1.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			2.2E-02	mg/kg/day	4.0E-02	mg/kg/day	6.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			3.2E-04	mg/kg/day	5.6E-03	mg/kg/day	6.E-02
				MERCURY	0.00086978	mg/l	NC		NC			3.7E-07	mg/kg/day	2.1E-05	mg/kg/day	2.E-02
				NICKEL	0.24	mg/l	NC		NC			2.0E-05	mg/kg/day	8.0E-04	mg/kg/day	3.E-02
				SELENIUM	0.00744	mg/l	NC		NC			3.1E-06	mg/kg/day	5.0E-03	mg/kg/day	6.E-04
				SILVER	0.00262	mg/l	NC		NC			6.6E-07	mg/kg/day	2.0E-04	mg/kg/day	3.E-03
				THALLIUM	0.00788	mg/l	NC		NC			3.3E-06	mg/kg/day	1.0E-05	mg/kg/day	3.E-01
				VANADIUM	0.397	mg/l	NC		NC			1.7E-04	mg/kg/day	1.3E-04	mg/kg/day	1.E+00
				ZINC	223.1	mg/l	NC		NC			5.6E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								5.E-05					1.E+01
		EXPOSURE POINT TOTAL									8.E-04					3.E+02
	EXPOSURE MEDIUM TOTAL										8.E-04					3.E+02

TABLE G-11
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.6E-01	ug/m3	5.8E-05	(ug/m3)-1	3.E-05	5.4E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.2E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	1.3E+00	ug/m3	2.0E-01	ug/m3	7.E+00
				1,1-DICHLOROETHANE			4.5E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	5.3E+00	ug/m3	5.0E+02	ug/m3	1.E-02
				1,2,3-TRICHLOROBENZENE			NC		NC			6.4E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.0E+03	ug/m3	2.0E+00	ug/m3	5.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			6.0E+01	ug/m3	7.0E+00	ug/m3	9.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			5.6E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			1.1E+03	ug/m3	2.0E+02	ug/m3	5.E+00
				1,2-DICHLOROETHANE			4.8E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	5.6E+01	ug/m3	7.0E+00	ug/m3	8.E+00
				1,2-DICHLOROETHYLENE			NC		NC			1.8E+02	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			4.7E+01	ug/m3	4.0E+00	ug/m3	1.E+01
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			6.6E+01	ug/m3	6.0E+01	ug/m3	1.E+00
				1,3,5-TRIMETHYLBENZENE			NC		NC			1.9E+01	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.8E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	5.6E+02	ug/m3	8.0E+02	ug/m3	7.E-01
				1-CHLOROBUTANE			NC		NC			6.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			2.2E+02	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			7.4E+01	ug/m3	7.8E-06	(ug/m3)-1	6.E-04	8.6E+02	ug/m3	3.0E+01	ug/m3	3.E+01
				CHLOROBENZENE			NC		NC			3.4E+03	ug/m3	5.0E+01	ug/m3	7.E+01
				CHLOROFORM			1.2E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	1.4E+00	ug/m3	9.8E+01	ug/m3	1.E-02
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			8.7E+02	ug/m3	1.0E+03	ug/m3	9.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			4.2E+02	ug/m3	1.0E-08	(ug/m3)-1	4.E-06	9.2E+02	ug/m3	6.0E+02	ug/m3	2.E+00
				METHYL-T-BUTYL ETHER			2.4E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	2.8E+01	ug/m3	3.0E+03	ug/m3	9.E-03
				NAPHTHALENE			NC		NC			2.0E+01	ug/m3	3.0E+00	ug/m3	7.E+00
				O-XYLENE			NC		NC			6.7E+02	ug/m3	1.0E+02	ug/m3	7.E+00
				P-CHLOROTOLUENE			NC		NC			3.7E+02	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.1E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	1.3E+00	ug/m3	4.0E+01	ug/m3	3.E-02
				TOLUENE			NC		NC			8.1E+03	ug/m3	5.0E+03	ug/m3	2.E+00
				TRICHLOROETHYLENE			6.9E+00	ug/m3	1.0E-06	(ug/m3)-1	7.E-06	1.5E+01	ug/m3	NA		
				TRICHLOROETHYLENE			1.3E+00	ug/m3	3.1E-06	(ug/m3)-1	4.E-06	1.5E+01	ug/m3	2.0E+00	ug/m3	8.E+00
				VINYL CHLORIDE			1.1E+01	ug/m3	8.8E-06	(ug/m3)-1	9.E-05	1.2E+02	ug/m3	1.0E+02	ug/m3	1.E+00
				XYLENES,TOTAL			NC		NC			8.2E+02	ug/m3	1.0E+02	ug/m3	8.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			1.7E+00	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			9.5E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			1.5E+00	ug/m3	3.0E-01	ug/m3	5.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					7.E+02
		EXPOSURE POINT TOTAL									1.E-03					7.E+02
GROUNDWATER TOTAL											**2.E-03**					**1.E+03**

TABLE G-11
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-2 FT)	INGESTION	ETHYLBENZENE	ND	mg/kg	NC		NC					1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			3.5E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				BENZO(A)ANTHRACENE	0.261	mg/kg	1.5E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	3.3E-06	mg/kg/day	6.0E-02	mg/kg/day	6.E-05
				BENZO(A)PYRENE	0.334	mg/kg	1.9E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-05	4.3E-06	mg/kg/day	6.0E-02	mg/kg/day	7.E-05
				BENZO(B)FLUORANTHENE	1.148	mg/kg	6.7E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-06	1.5E-05	mg/kg/day	6.0E-02	mg/kg/day	2.E-04
				Biphenyl	1.427	mg/kg	NC		NC			1.8E-05	mg/kg/day	5.0E-01	mg/kg/day	4.E-05
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	4.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	1.0E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	1.5E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-06	3.4E-06	mg/kg/day	6.0E-02	mg/kg/day	6.E-05
				ALUMINUM	10864	mg/kg	NC		NC			1.4E-01	mg/kg/day	1.0E+00	mg/kg/day	1.E-01
				ARSENIC	3.997	mg/kg	2.6E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-06	3.1E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				CHROMIUM	19.9	mg/kg	NC		NC			2.5E-04	mg/kg/day	1.5E+00	mg/kg/day	2.E-04
				COBALT	3.301	mg/kg	NC		NC			4.2E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				COPPER	260	mg/kg	NC		NC			3.3E-03	mg/kg/day	4.0E-02	mg/kg/day	8.E-02
				MANGANESE	103.4	mg/kg	NC		NC			1.3E-03	mg/kg/day	1.4E-01	mg/kg/day	9.E-03
				THALLIUM	1.262	mg/kg	NC		NC			1.6E-05	mg/kg/day	1.0E-05	mg/kg/day	2.E+00
				VANADIUM	26.36	mg/kg	NC		NC			3.4E-04	mg/kg/day	5.0E-03	mg/kg/day	7.E-02
			EXPOSURE ROUTE TOTAL								3.E-05					2.E+00
			DERMAL	ETHYLBENZENE	ND	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.261	mg/kg	5.5E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				BENZO(A)PYRENE	0.334	mg/kg	7.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-06	1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				BENZO(B)FLUORANTHENE	1.148	mg/kg	2.4E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-06	5.3E-06	mg/kg/day	6.0E-02	mg/kg/day	9.E-05
				Biphenyl	1.427	mg/kg	NC		NC			5.1E-06	mg/kg/day	5.0E-01	mg/kg/day	1.E-05
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	1.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	3.8E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	5.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	1.2E-06	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				ALUMINUM	10864	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.997	mg/kg	3.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	4.3E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	19.9	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.301	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	260	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	103.4	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	1.262	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	26.36	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-05					1.E-02
		EXPOSURE POINT TOTAL									4.E-05					2.E+00
	EXPOSURE MEDIUM TOTAL										4.E-05					2.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**1.E+03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-12
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	2.5E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-06	7.2E-05	mg/kg/day	2.0E-02	mg/kg/day	4.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.6E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-07	1.6E-05	mg/kg/day	4.0E-03	mg/kg/day	4.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	2.0E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-07	6.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			8.6E-03	mg/kg/day	8.0E-04	mg/kg/day	1.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.4E-02	mg/kg/day	1.0E-02	mg/kg/day	1.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			8.3E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			6.1E-03	mg/kg/day	2.0E-03	mg/kg/day	3.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			1.4E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	2.2E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-05	6.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			2.0E-03	mg/kg/day	9.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-06	5.6E-04	mg/kg/day	9.0E-02	mg/kg/day	6.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			7.3E-04	mg/kg/day	2.0E-02	mg/kg/day	4.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			2.6E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.9E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	2.5E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-05	7.2E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			8.0E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			2.9E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			3.8E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	3.4E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-04	1.0E-02	mg/kg/day	4.0E-03	mg/kg/day	2.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			4.1E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	5.5E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-07	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	2.9E-04	mg/kg/day	NA			8.5E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			5.5E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.1E-02	mg/kg/day	1.0E-01	mg/kg/day	1.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			4.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.E-03
				METHYLENE CHLORIDE	0.341	mg/l	3.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	6.E-06	9.3E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	1.3E-04	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-07	3.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			2.8E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				O-XYLENE	0.32	mg/l	NC		NC			8.8E-03	mg/kg/day	2.0E-01	mg/kg/day	4.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			4.8E-03	mg/kg/day	2.0E-02	mg/kg/day	2.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			5.7E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			3.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			3.2E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	5.4E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	1.E-08	1.6E-05	mg/kg/day	6.0E-03	mg/kg/day	3.E-03
				TOLUENE	3.656	mg/l	NC		NC			1.0E-01	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	6.0E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-06	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				VINYL CHLORIDE	0.0466	mg/l	4.4E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	3.E-04	1.3E-03	mg/kg/day	3.0E-03	mg/kg/day	4.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			9.7E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				1,4-DIOXANE	0.00991	mg/l	9.3E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	9.E-06	2.7E-04	mg/kg/day	3.0E-02	mg/kg/day	9.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			4.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			2.5E-05	mg/kg/day	4.0E-03	mg/kg/day	6.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			9.5E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	4.4E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	3.E-05	1.3E-02	mg/kg/day	7.0E-03	mg/kg/day	2.E+00
				Biphenyl	0.00537	mg/l	NC		NC			1.5E-04	mg/kg/day	5.0E-01	mg/kg/day	3.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				ALDRIN	0.0000079	mg/l	7.4E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-06	2.2E-07	mg/kg/day	3.0E-05	mg/kg/day	7.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	9.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	2.7E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				ALUMINUM	55.28	mg/l	NC		NC			1.5E+00	mg/kg/day	1.0E+00	mg/kg/day	2.E+00
				ARSENIC	0.0251	mg/l	2.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-04	6.9E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				ANTIMONY (5)	0.00832	mg/l	NC		NC			2.3E-04	mg/kg/day	4.0E-04	mg/kg/day	6.E-01
				BARIUM	0.362	mg/l	NC		NC			9.9E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-03	mg/kg/day	5.E-02
				CADMIUM	0.0808	mg/l	NC		NC			2.2E-03	mg/kg/day	1.0E-03	mg/kg/day	2.E+00
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-02	mg/kg/day	1.5E+00	mg/kg/day	8.E-03
				COBALT	0.0745	mg/l	NC		NC			2.0E-03	mg/kg/day	1.5E+00	mg/kg/day	1.E-03
				COPPER	52.99	mg/l	NC		NC			1.5E+00	mg/kg/day	4.0E-02	mg/kg/day	4.E+01
				IRON	342.6	mg/l	NC		NC			9.4E+00	mg/kg/day	7.0E-01	mg/kg/day	1.E+01
				LEAD	0.135	mg/l	1.3E-03	mg/kg/day	ND			3.7E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				MERCURY	0.00086978	mg/l	NC		NC			2.4E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				NICKEL	0.24	mg/l	NC		NC			6.6E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				SELENIUM	0.00744	mg/l	NC		NC			2.0E-04	mg/kg/day	5.0E-03	mg/kg/day	4.E-02
				SILVER	0.00262	mg/l	NC		NC			7.2E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				THALLIUM	0.00788	mg/l	NC		NC			2.2E-04	mg/kg/day	1.0E-05	mg/kg/day	2.E+01
				VANADIUM	0.397	mg/l	NC		NC			1.1E-02	mg/kg/day	5.0E-03	mg/kg/day	2.E+00
				ZINC	223.1	mg/l	NC		NC			6.1E+00	mg/kg/day	3.0E-01	mg/kg/day	2.E+01

TABLE G-12
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								9.E-04					1.E+02
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	3.1E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-07	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.2E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-08	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	1.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-09	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.8E-02	mg/kg/day	1.0E-02	mg/kg/day	2.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			9.1E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-06	3.1E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			1.7E-04	mg/kg/day	9.0E-03	mg/kg/day	2.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-07	5.6E-05	mg/kg/day	9.0E-02	mg/kg/day	6.E-04
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.2E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.7E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	9.E-06	4.8E-03	mg/kg/day	7.0E-02	mg/kg/day	7.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	5.2E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-05	1.5E-03	mg/kg/day	4.0E-03	mg/kg/day	4.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	5.0E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	1.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	--		NA			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			6.9E-03	mg/kg/day	1.0E-01	mg/kg/day	7.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-07	3.5E-04	mg/kg/day	6.0E-03	mg/kg/day	6.E-02
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.8E-04	mg/kg/day	2.0E-02	mg/kg/day	9.E-03
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.2E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-06	9.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	3.656	mg/l	NC		NC			3.5E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	1.0E-05	mg/kg/day				3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				VINYL CHLORIDE	0.0466	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	3.4E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-08	9.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			6.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	9.3E-05	mg/kg/day	NA			2.7E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	7.4E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-06	2.2E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				ALDRIN	0.0000079	mg/l	6.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				ANTIMONY (5)	0.00832	mg/l	NC		NC			1.2E-06	mg/kg/day	6.0E-05	mg/kg/day	2.E-02
				BARIUM	0.362	mg/l	NC		NC			5.2E-05	mg/kg/day	1.4E-02	mg/kg/day	4.E-03
				BERYLLIUM	0.00373	mg/l	NC		NC			5.3E-07	mg/kg/day	1.4E-05	mg/kg/day	4.E-02
				CADMIUM	0.0808	mg/l	NC		NC			1.2E-05	mg/kg/day	2.5E-05	mg/kg/day	5.E-01
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				COBALT	0.0745	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			7.6E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			1.1E-04	mg/kg/day	5.6E-03	mg/kg/day	2.E-02
				MERCURY	0.00086978	mg/l	NC		NC			1.2E-07	mg/kg/day	2.1E-05	mg/kg/day	6.E-03
				NICKEL	0.24	mg/l	NC		NC			6.9E-06	mg/kg/day	8.0E-04	mg/kg/day	9.E-03
				SELENIUM	0.00744	mg/l	NC		NC			1.1E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				SILVER	0.00262	mg/l	NC		NC			2.2E-07	mg/kg/day	2.0E-04	mg/kg/day	1.E-03
				THALLIUM	0.00788	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	0.397	mg/l	NC		NC			5.7E-05	mg/kg/day	1.3E-04	mg/kg/day	4.E-01
				ZINC	223.1	mg/l	NC		NC			1.9E-02	mg/kg/day	3.0E-01	mg/kg/day	6.E-02
			EXPOSURE ROUTE TOTAL								4.E-05					5.E+00
		EXPOSURE POINT TOTAL									1.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					1.E+02

TABLE G-12
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.3E-01	ug/m3	5.8E-05	(ug/m3)-1	2.E-05	1.2E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.1E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	3.1E-01	ug/m3	2.0E-01	ug/m3	2.E+00
				1,1-DICHLOROETHANE			4.2E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	1.2E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				1,2,3-TRICHLOROBENZENE			NC		NC			1.5E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.4E+02	ug/m3	2.0E+00	ug/m3	1.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			1.4E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			1.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			2.5E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1,2-DICHLOROETHANE			4.5E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	1.3E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-DICHLOROETHYLENE			NC		NC			4.1E+01	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			1.1E+01	ug/m3	4.0E+00	ug/m3	3.E+00
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			1.5E+01	ug/m3	6.0E+01	ug/m3	3.E-01
				1,3,5-TRIMETHYLBENZENE			NC		NC			4.3E+00	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.4E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	1.3E+02	ug/m3	8.0E+02	ug/m3	2.E-01
				1-CHLOROBUTANE			5.2E+01	ug/m3	ND			1.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			5.2E+01	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			6.9E+01	ug/m3	7.8E-06	(ug/m3)-1	5.E-04	2.0E+02	ug/m3	3.0E+01	ug/m3	7.E+00
				CHLOROBENZENE			NC		NC			7.8E+02	ug/m3	5.0E+01	ug/m3	2.E+01
				CHLOROFORM			1.1E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	3.3E-01	ug/m3	9.8E+01	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			--		NA					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			2.0E+02	ug/m3	1.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			7.3E+01	ug/m3	1.0E-08	(ug/m3)-1	7.E-07	2.1E+02	ug/m3	6.0E+02	ug/m3	4.E-01
				METHYL-T-BUTYL ETHER			2.2E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	6.4E+00	ug/m3	3.0E+03	ug/m3	2.E-03
				NAPHTHALENE			NC		NC			4.6E+00	ug/m3	3.0E+00	ug/m3	2.E+00
				O-XYLENE			NC		NC			1.5E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				P-CHLOROTOLUENE			NC		NC			8.6E+01	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.0E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	3.0E-01	ug/m3	4.0E+01	ug/m3	7.E-03
				TOLUENE			NC		NC			1.9E+03	ug/m3	5.0E+03	ug/m3	4.E-01
				TRICHLOROETHYLENE			1.2E+00	ug/m3	4.1E-06	(ug/m3)-1	5.E-06	3.5E+00	ug/m3	2.0E+00	ug/m3	2.E+00
				VINYL CHLORIDE			9.7E+00	ug/m3	4.4E-06	(ug/m3)-1	4.E-05	2.8E+01	ug/m3	1.0E+02	ug/m3	3.E-01
				XYLENES,TOTAL			NC		NC			1.9E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			3.9E-01	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			2.2E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY (5)			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			3.4E-01	ug/m3	3.0E-01	ug/m3	1.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02
GROUNDWATER TOTAL											**2.E-03**					**3.E+02**

TABLE G-12
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-2 FT)	INGESTION	ETHYLBENZENE	ND	mg/kg	NC		NC					1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			3.7E-07	mg/kg/day	2.0E-01	mg/kg/day	2.E-06
				BENZO(A)ANTHRACENE	0.261	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	3.6E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				BENZO(A)PYRENE	0.334	mg/kg	1.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	4.6E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	5.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-07	1.6E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				Biphenyl	1.427	mg/kg	NC		NC			2.0E-06	mg/kg/day	5.0E-01	mg/kg/day	4.E-06
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	3.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	3.6E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				ALUMINUM	10864	mg/kg	NC		NC			1.5E-02	mg/kg/day	1.0E+00	mg/kg/day	1.E-02
				ARSENIC	3.997	mg/kg	1.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.3E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	19.9	mg/kg	NC		NC			2.7E-05	mg/kg/day	1.5E+00	mg/kg/day	2.E-05
				COBALT	3.301	mg/kg	NC		NC			4.5E-06	mg/kg/day	1.5E+00	mg/kg/day	3.E-06
				COPPER	260	mg/kg	NC		NC			3.6E-04	mg/kg/day	4.0E-02	mg/kg/day	9.E-03
				MANGANESE	103.4	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.4E-01	mg/kg/day	1.E-03
				THALLIUM	1.262	mg/kg	NC		NC			1.7E-06	mg/kg/day	1.0E-05	mg/kg/day	2.E-01
				VANADIUM	26.36	mg/kg	NC		NC			3.6E-05	mg/kg/day	5.0E-03	mg/kg/day	7.E-03
			EXPOSURE ROUTE TOTAL								4.E-06					2.E-01
			DERMAL	ETHYLBENZENE	ND	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	0.27	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.261	mg/kg	6.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	1.9E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(A)PYRENE	0.334	mg/kg	8.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	2.4E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				BENZO(B)FLUORANTHENE	1.148	mg/kg	2.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	8.2E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Biphenyl	1.427	mg/kg	NC		NC			7.8E-07	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				DIBENZO(A,H)ANTHRACENE	0.081	mg/kg	2.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	5.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				INDENO(1,2,3-CD)PYRENE	0.266	mg/kg	6.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	1.9E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				ALUMINUM	10864	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.997	mg/kg	2.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	6.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	19.9	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.301	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COPPER	260	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	103.4	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	1.262	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	26.36	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-03
		EXPOSURE POINT TOTAL									5.E-06					2.E-01
	EXPOSURE MEDIUM TOTAL										5.E-06					2.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E+02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/19/15

TABLE G-13
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 3 (0-2 FT)	INGESTION	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			9.1E-09	mg/kg/day	4.0E-03	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	4.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.1E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	5.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	2.7E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Biphenyl	4.5	mg/kg	NC		NC			2.1E-06	mg/kg/day	5.0E-01	mg/kg/day	4.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			1.4E-03	mg/kg/day	1.0E+00	mg/kg/day	1.E-03
				ARSENIC	3.866	mg/kg	9.2E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	14.58	mg/kg	NC		NC			6.7E-06	mg/kg/day	1.5E+00	mg/kg/day	4.E-06
				VANADIUM	17.71	mg/kg	NC		NC			8.2E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
			EXPOSURE ROUTE TOTAL								2.E-07					7.E-03
			DERMAL	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			5.4E-09	mg/kg/day	4.0E-03	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	2.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	3.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.6E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Biphenyl	4.5	mg/kg	NC		NC			9.6E-07	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.866	mg/kg	2.1E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	2.5E-07	mg/kg/day	3.0E-04	mg/kg/day	8.E-04
				CHROMIUM	14.58	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	17.71	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-08					8.E-04
		EXPOSURE POINT TOTAL									2.E-07					7.E-03
	EXPOSURE MEDIUM TOTAL										2.E-07					7.E-03
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**7.E-03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 05/09/2015
Checked by: BJR 4/10/2015

TABLE G-14
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 3 (0-2 FT)	INGESTION	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			3.6E-09	mg/kg/day	4.0E-03	mg/kg/day	9.E-07
				BENZO(A)PYRENE	0.0449	mg/kg	1.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	8.2E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	1.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.1E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Biphenyl	4.5	mg/kg	NC		NC			8.2E-07	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			5.7E-04	mg/kg/day	1.0E+00	mg/kg/day	6.E-04
				ARSENIC	3.866	mg/kg	7.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	4.2E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	14.58	mg/kg	NC		NC			2.7E-06	mg/kg/day	1.5E+00	mg/kg/day	2.E-06
				VANADIUM	17.71	mg/kg	NC		NC			3.2E-06	mg/kg/day	5.0E-03	mg/kg/day	6.E-04
			EXPOSURE ROUTE TOTAL								1.E-07					3.E-03
			DERMAL	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			1.9E-09	mg/kg/day	4.0E-03	mg/kg/day	5.E-07
				BENZO(A)PYRENE	0.0449	mg/kg	7.4E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-09	4.3E-09	mg/kg/day	6.0E-02	mg/kg/day	7.E-08
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	9.7E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-10	5.6E-09	mg/kg/day	6.0E-02	mg/kg/day	9.E-08
				Biphenyl	4.5	mg/kg	NC		NC			3.3E-07	mg/kg/day	5.0E-01	mg/kg/day	7.E-07
				NAPHTHALENE	ND	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.866	mg/kg	1.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-08	8.6E-08	mg/kg/day	3.0E-04	mg/kg/day	3.E-04
				CHROMIUM	14.58	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	17.71	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								3.E-08					3.E-04
		EXPOSURE POINT TOTAL									1.E-07					3.E-03
	EXPOSURE MEDIUM TOTAL										1.E-07					3.E-03
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**1.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E-03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-15
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.6E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-15
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 3 (0-2 FT)	INGESTION	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			1.7E-08	mg/kg/day	4.0E-03	mg/kg/day	4.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	1.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	4.0E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	5.2E-08	mg/kg/day	6.0E-02	mg/kg/day	9.E-07
				Biphenyl	4.5	mg/kg	NC		NC			4.0E-06	mg/kg/day	5.0E-01	mg/kg/day	8.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			2.8E-03	mg/kg/day	1.0E+00	mg/kg/day	3.E-03
				ARSENIC	3.866	mg/kg	7.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	2.0E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				CHROMIUM	14.58	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.5E+00	mg/kg/day	9.E-06
				VANADIUM	17.71	mg/kg	NC		NC			1.6E-05	mg/kg/day	5.0E-03	mg/kg/day	3.E-03
			EXPOSURE ROUTE TOTAL								1.E-06					1.E-02
			DERMAL	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			1.5E-08	mg/kg/day	4.0E-03	mg/kg/day	4.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	3.4E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.4E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Biphenyl	4.5	mg/kg	NC		NC			2.6E-06	mg/kg/day	5.0E-01	mg/kg/day	5.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.866	mg/kg	2.4E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	6.7E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	14.58	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	17.71	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-07					2.E-03
		EXPOSURE POINT TOTAL									2.E-06					1.E-02
	EXPOSURE MEDIUM TOTAL										2.E-06					1.E-02
	AIR	DUST AT SITE	DUST INHALATION	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC					3.0E+03	ug/m3	
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			3.0E-09	ug/m3	NA		
				BENZO(A)PYRENE	0.0449	mg/kg	2.4E-09	ug/m3	1.1E-03	(ug/m3)-1	3.E-12	6.8E-09	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	3.2E-09	ug/m3	1.1E-04	(ug/m3)-1	3.E-13	8.9E-09	ug/m3	NA		
				Biphenyl	4.5	mg/kg	NC		NC			6.8E-07	ug/m3	NA		
				NAPHTHALENE	ND	mg/kg	NC		NC					3.0E+00	ug/m3	
				ALUMINUM	3131	mg/kg	NC		NC			4.7E-04	ug/m3	5.0E+00	ug/m3	9.E-05
				ARSENIC	3.866	mg/kg	2.1E-07	ug/m3	4.3E-03	(ug/m3)-1	9.E-10	5.8E-07	ug/m3	1.5E-02	ug/m3	4.E-05
				CHROMIUM	14.58	mg/kg	NC		NC			2.2E-06	ug/m3	NA		
				VANADIUM	17.71	mg/kg	NC		NC			2.7E-06	ug/m3	1.0E-01	ug/m3	3.E-05
			EXPOSURE ROUTE TOTAL								9.E-10					2.E-04
		EXPOSURE POINT TOTAL									9.E-10					2.E-04
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-16
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-16
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 3 (0-2 FT)	INGESTION	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			9.6E-09	mg/kg/day	4.0E-03	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	7.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	2.2E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	1.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	2.9E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Biphenyl	4.5	mg/kg	NC		NC			2.2E-06	mg/kg/day	5.0E-01	mg/kg/day	4.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			1.5E-03	mg/kg/day	1.0E+00	mg/kg/day	2.E-03
				ARSENIC	3.866	mg/kg	4.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	14.58	mg/kg	NC		NC			7.1E-06	mg/kg/day	1.5E+00	mg/kg/day	5.E-06
				VANADIUM	17.71	mg/kg	NC		NC			8.7E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
			EXPOSURE ROUTE TOTAL								7.E-07					7.E-03
			DERMAL	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			5.8E-09	mg/kg/day	4.0E-03	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	4.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	1.3E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	6.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	1.7E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Biphenyl	4.5	mg/kg	NC		NC			1.0E-06	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.866	mg/kg	9.4E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	2.6E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				CHROMIUM	14.58	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	17.71	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								2.E-07					9.E-04
		EXPOSURE POINT TOTAL									9.E-07					8.E-03
	EXPOSURE MEDIUM TOTAL										9.E-07					8.E-03
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-17
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.4E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	3.E-06	1.7E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	3.3E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-07	3.8E-05	mg/kg/day	4.0E-03	mg/kg/day	9.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	1.2E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	7.E-08	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			2.0E-02	mg/kg/day	8.0E-04	mg/kg/day	3.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			3.3E-02	mg/kg/day	1.0E-02	mg/kg/day	3.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			1.9E-03	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			1.4E-02	mg/kg/day	2.0E-03	mg/kg/day	7.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			3.2E-02	mg/kg/day	9.0E-02	mg/kg/day	4.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.3E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-05	1.5E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.6E-03	mg/kg/day	9.0E-03	mg/kg/day	5.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-06	1.3E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-02
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	8.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			6.1E-04	mg/kg/day	1.0E-02	mg/kg/day	6.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			2.1E-03	mg/kg/day	3.0E-03	mg/kg/day	7.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.4E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-06	1.7E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			1.9E-02	mg/kg/day	4.0E-02	mg/kg/day	5.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			6.8E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			8.9E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	2.0E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-04	2.3E-02	mg/kg/day	4.0E-03	mg/kg/day	6.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			9.6E-02	mg/kg/day	2.0E-02	mg/kg/day	5.E+00
				CHLOROFORM	0.0005829	mg/l	3.2E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	1.E-07	3.7E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			2.0E-03	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			1.3E-03	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			2.7E-02	mg/kg/day	1.0E-01	mg/kg/day	3.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.1E-03	mg/kg/day	2.0E-01	mg/kg/day	6.E-03
				METHYLENE CHLORIDE	0.341	mg/l	9.9E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-05	2.2E-02	mg/kg/day	6.0E-03	mg/kg/day	4.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	7.5E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-07	8.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			6.5E-04	mg/kg/day	2.0E-02	mg/kg/day	3.E-02
				O-XYLENE	0.32	mg/l	NC		NC			2.0E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.1E-02	mg/kg/day	2.0E-02	mg/kg/day	6.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			1.3E-04	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			7.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			7.4E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.1E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-09	3.6E-05	mg/kg/day	6.0E-03	mg/kg/day	6.E-03
				TOLUENE	3.656	mg/l	NC		NC			2.3E-01	mg/kg/day	8.0E-02	mg/kg/day	3.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	1.9E-04	mg/kg/day	9.3E-03	(mg/kg/day)-1	2.E-06	4.1E-04	mg/kg/day	NA		
				TRICHLOROETHYLENE	0.00641	mg/l	3.5E-05	mg/kg/day	3.7E-02	(mg/kg/day)-1	1.E-06	4.1E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				VINYL CHLORIDE	0.0466	mg/l	2.6E-04	mg/kg/day	1.4E+00	(mg/kg/day)-1	4.E-04	3.0E-03	mg/kg/day	3.0E-03	mg/kg/day	1.E+00
				XYLENES,TOTAL	0.354	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				1,4-DIOXANE	0.00991	mg/l	5.4E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	5.E-06	6.3E-04	mg/kg/day	3.0E-02	mg/kg/day	2.E-02
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			5.8E-05	mg/kg/day	4.0E-03	mg/kg/day	1.E-02
				3-NITROANILINE	0.00346	mg/l	NC		NC			2.2E-04	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	2.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-05	3.0E-02	mg/kg/day	7.0E-03	mg/kg/day	4.E+00
				Biphenyl	0.00537	mg/l	NC		NC			3.4E-04	mg/kg/day	5.0E-01	mg/kg/day	7.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	2.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-07	3.3E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	4.3E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	3.0E-05	mg/kg/day	2.E-02
				HEPTACHLOR EPOXIDE	0.00001	mg/l	5.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				ALUMINUM	55.28	mg/l	NC		NC			3.5E+00	mg/kg/day	1.0E+00	mg/kg/day	4.E+00
				ARSENIC	0.0251	mg/l	1.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-04	1.6E-03	mg/kg/day	3.0E-04	mg/kg/day	5.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			5.3E-04	mg/kg/day	4.0E-04	mg/kg/day	1.E+00
				BARIUM	0.362	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				BERYLLIUM	0.00373	mg/l	NC		NC			2.4E-04	mg/kg/day	2.0E-03	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			5.2E-03	mg/kg/day	1.0E-03	mg/kg/day	5.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.0E-02	mg/kg/day	1.5E+00	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			4.8E-03	mg/kg/day	3.0E-04	mg/kg/day	2.E+01
				COPPER	52.99	mg/l	NC		NC			3.4E+00	mg/kg/day	4.0E-02	mg/kg/day	8.E+01
				IRON	342.6	mg/l	NC		NC			2.2E+01	mg/kg/day	7.0E-01	mg/kg/day	3.E+01
				LEAD	0.135	mg/l	7.4E-04	mg/kg/day	ND			8.6E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			4.9E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				MERCURY	0.00086978	mg/l	NC		NC			5.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				NICKEL	0.24	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	8.E-01
				SELENIUM	0.00744	mg/l	NC		NC			4.8E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
				SILVER	0.00262	mg/l	NC		NC			1.7E-04	mg/kg/day	5.0E-03	mg/kg/day	3.E-02
				THALLIUM	0.00788	mg/l	NC		NC			5.0E-04	mg/kg/day	1.0E-05	mg/kg/day	5.E+01
				VANADIUM	0.397	mg/l	NC		NC			2.5E-02	mg/kg/day	5.0E-03	mg/kg/day	5.E+00
				ZINC	223.1	mg/l	NC		NC			1.4E+01	mg/kg/day	3.0E-01	mg/kg/day	5.E+01
			EXPOSURE ROUTE TOTAL								7.E-04					3.E+02

TABLE G-17
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.8E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-07	2.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.9E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-08	3.4E-06	mg/kg/day	4.0E-03	mg/kg/day	9.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	9.4E-07	mg/kg/day	5.7E-03	(mg/kg/day)-1	5.E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			4.1E-02	mg/kg/day	1.0E-02	mg/kg/day	4.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			2.0E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	6.2E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-07	7.2E-05	mg/kg/day	6.0E-03	mg/kg/day	1.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.0E-04	mg/kg/day	9.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-07	1.3E-04	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			1.8E-03	mg/kg/day	3.0E-03	mg/kg/day	6.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.3E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	1.1E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	3.1E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			3.3E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	2.8E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	9.E-09	3.3E-06	mg/kg/day	1.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.6E-02	mg/kg/day	1.0E-01	mg/kg/day	2.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	3.8E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	8.E-07	8.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			4.1E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	1.8E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	6.0E-03	mg/kg/day	4.E-03
				TOLUENE	3.656	mg/l	NC		NC			8.0E-02	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		NA		
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		5.0E-04	mg/kg/day	
				VINYL CHLORIDE	0.0466	mg/l	1.4E-05	mg/kg/day	1.4E+00	(mg/kg/day)-1	2.E-05	1.6E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	2.0E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-08	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.5E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	5.4E-05	mg/kg/day				6.3E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.2E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-07	4.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	3.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	6.E-08	4.5E-08	mg/kg/day	3.0E-05	mg/kg/day	1.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	9.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.1E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-05	mg/kg/day	6.E-02
				BARIUM	0.362	mg/l	NC		NC			1.5E-04	mg/kg/day	1.4E-02	mg/kg/day	1.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.6E-06	mg/kg/day	1.4E-05	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			3.4E-05	mg/kg/day	2.5E-05	mg/kg/day	1.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			2.2E-02	mg/kg/day	4.0E-02	mg/kg/day	6.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			3.2E-04	mg/kg/day	5.6E-03	mg/kg/day	6.E-02
				MERCURY	0.00086978	mg/l	NC		NC			3.7E-07	mg/kg/day	2.1E-05	mg/kg/day	2.E-02
				NICKEL	0.24	mg/l	NC		NC			2.0E-05	mg/kg/day	8.0E-04	mg/kg/day	3.E-02
				SELENIUM	0.00744	mg/l	NC		NC			3.1E-06	mg/kg/day	5.0E-03	mg/kg/day	6.E-04
				SILVER	0.00262	mg/l	NC		NC			6.6E-07	mg/kg/day	2.0E-04	mg/kg/day	3.E-03
				THALLIUM	0.00788	mg/l	NC		NC			3.3E-06	mg/kg/day	1.0E-05	mg/kg/day	3.E-01
				VANADIUM	0.397	mg/l	NC		NC			1.7E-04	mg/kg/day	1.3E-04	mg/kg/day	1.E+00
				ZINC	223.1	mg/l	NC		NC			5.6E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								5.E-05					1.E+01
		EXPOSURE POINT TOTAL									8.E-04					3.E+02
	EXPOSURE MEDIUM TOTAL										8.E-04					3.E+02

TABLE G-17
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.6E-01	ug/m3	5.8E-05	(ug/m3)-1	3.E-05	5.4E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.2E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	1.3E+00	ug/m3	2.0E-01	ug/m3	7.E+00
				1,1-DICHLOROETHANE			4.5E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	5.3E+00	ug/m3	5.0E+02	ug/m3	1.E-02
				1,2,3-TRICHLOROBENZENE			NC		NC			6.4E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.0E+03	ug/m3	2.0E+00	ug/m3	5.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			6.0E+01	ug/m3	7.0E+00	ug/m3	9.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			5.6E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			1.1E+03	ug/m3	2.0E+02	ug/m3	5.E+00
				1,2-DICHLOROETHANE			4.8E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	5.6E+01	ug/m3	7.0E+00	ug/m3	8.E+00
				1,2-DICHLOROETHYLENE			NC		NC			1.8E+02	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			4.7E+01	ug/m3	4.0E+00	ug/m3	1.E+01
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			6.6E+01	ug/m3	6.0E+01	ug/m3	1.E+00
				1,3,5-TRIMETHYLBENZENE			NC		NC			1.9E+01	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.8E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	5.6E+02	ug/m3	8.0E+02	ug/m3	7.E-01
				1-CHLOROBUTANE			NC		NC			6.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			2.2E+02	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			7.4E+01	ug/m3	7.8E-06	(ug/m3)-1	6.E-04	8.6E+02	ug/m3	3.0E+01	ug/m3	3.E+01
				CHLOROBENZENE			NC		NC			3.4E+03	ug/m3	5.0E+01	ug/m3	7.E+01
				CHLOROFORM			1.2E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	1.4E+00	ug/m3	9.8E+01	ug/m3	1.E-02
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			8.7E+02	ug/m3	1.0E+03	ug/m3	9.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			4.2E+02	ug/m3	1.0E-08	(ug/m3)-1	4.E-06	9.2E+02	ug/m3	6.0E+02	ug/m3	2.E+00
				METHYL-T-BUTYL ETHER			2.4E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	2.8E+01	ug/m3	3.0E+03	ug/m3	9.E-03
				NAPHTHALENE			NC		NC			2.0E+01	ug/m3	3.0E+00	ug/m3	7.E+00
				O-XYLENE			NC		NC			6.7E+02	ug/m3	1.0E+02	ug/m3	7.E+00
				P-CHLOROTOLUENE			NC		NC			3.7E+02	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.1E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	1.3E+00	ug/m3	4.0E+01	ug/m3	3.E-02
				TOLUENE			NC		NC			8.1E+03	ug/m3	5.0E+03	ug/m3	2.E+00
				TRICHLOROETHYLENE			6.9E+00	ug/m3	1.0E-06	(ug/m3)-1	7.E-06	1.5E+01	ug/m3	NA		
				TRICHLOROETHYLENE			1.3E+00	ug/m3	3.1E-06	(ug/m3)-1	4.E-06	1.5E+01	ug/m3	2.0E+00	ug/m3	8.E+00
				VINYL CHLORIDE			1.1E+01	ug/m3	8.8E-06	(ug/m3)-1	9.E-05	1.2E+02	ug/m3	1.0E+02	ug/m3	1.E+00
				XYLENES,TOTAL			NC		NC			8.2E+02	ug/m3	1.0E+02	ug/m3	8.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			1.7E+00	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			9.5E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			1.5E+00	ug/m3	3.0E-01	ug/m3	5.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
			EXPOSURE ROUTE TOTAL								1.E-03					7.E+02
		EXPOSURE POINT TOTAL									1.E-03					7.E+02
GROUNDWATER TOTAL											**2.E-03**					**1.E+03**

TABLE G-17
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 3 (0-2 FT)	INGESTION	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			2.5E-07	mg/kg/day	4.0E-03	mg/kg/day	6.E-05
				BENZO(A)PYRENE	0.0449	mg/kg	2.6E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	5.7E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	7.5E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Biphenyl	4.5	mg/kg	NC		NC			5.8E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				NAPHTHALENE	ND	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			4.0E-02	mg/kg/day	1.0E+00	mg/kg/day	4.E-02
				ARSENIC	3.866	mg/kg	2.5E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-06	3.0E-05	mg/kg/day	3.0E-04	mg/kg/day	1.E-01
				CHROMIUM	14.58	mg/kg	NC		NC			1.9E-04	mg/kg/day	1.5E+00	mg/kg/day	1.E-04
				VANADIUM	17.71	mg/kg	NC		NC			2.3E-04	mg/kg/day	5.0E-03	mg/kg/day	5.E-02
			EXPOSURE ROUTE TOTAL								6.E-06					2.E-01
			DERMAL	CYCLOHEXANE, METHYL-	ND	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			9.2E-08	mg/kg/day	4.0E-03	mg/kg/day	2.E-05
				BENZO(A)PYRENE	0.0449	mg/kg	9.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	2.7E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Biphenyl	4.5	mg/kg	NC		NC			1.6E-05	mg/kg/day	5.0E-01	mg/kg/day	3.E-05
				NAPHTHALENE	ND	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.866	mg/kg	3.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	4.2E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	14.58	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	17.71	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-06					1.E-02
		EXPOSURE POINT TOTAL									7.E-06					2.E-01
	EXPOSURE MEDIUM TOTAL										7.E-06					2.E-01
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**1.E+03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-18
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	2.5E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-06	7.2E-05	mg/kg/day	2.0E-02	mg/kg/day	4.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.6E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-07	1.6E-05	mg/kg/day	4.0E-03	mg/kg/day	4.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	2.0E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-07	6.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			8.6E-03	mg/kg/day	8.0E-04	mg/kg/day	1.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.4E-02	mg/kg/day	1.0E-02	mg/kg/day	1.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			8.3E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			6.1E-03	mg/kg/day	2.0E-03	mg/kg/day	3.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			1.4E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	2.2E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-05	6.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			2.0E-03	mg/kg/day	9.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-06	5.6E-04	mg/kg/day	9.0E-02	mg/kg/day	6.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			7.3E-04	mg/kg/day	2.0E-02	mg/kg/day	4.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			2.6E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.9E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	2.5E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-05	7.2E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			8.0E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			2.9E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			3.8E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	3.4E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-04	1.0E-02	mg/kg/day	4.0E-03	mg/kg/day	2.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			4.1E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	5.5E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-07	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	2.9E-04	mg/kg/day	NA			8.5E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			5.5E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.1E-02	mg/kg/day	1.0E-01	mg/kg/day	1.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			4.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.E-03
				METHYLENE CHLORIDE	0.341	mg/l	3.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	6.E-06	9.3E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	1.3E-04	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-07	3.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			2.8E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				O-XYLENE	0.32	mg/l	NC		NC			8.8E-03	mg/kg/day	2.0E-01	mg/kg/day	4.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			4.8E-03	mg/kg/day	2.0E-02	mg/kg/day	2.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			5.7E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			3.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			3.2E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	5.4E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	1.E-08	1.6E-05	mg/kg/day	6.0E-03	mg/kg/day	3.E-03
				TOLUENE	3.656	mg/l	NC		NC			1.0E-01	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	6.0E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-06	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				VINYL CHLORIDE	0.0466	mg/l	4.4E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	3.E-04	1.3E-03	mg/kg/day	3.0E-03	mg/kg/day	4.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			9.7E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				1,4-DIOXANE	0.00991	mg/l	9.3E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	9.E-06	2.7E-04	mg/kg/day	3.0E-02	mg/kg/day	9.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			4.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			2.5E-05	mg/kg/day	4.0E-03	mg/kg/day	6.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			9.5E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	4.4E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	3.E-05	1.3E-02	mg/kg/day	7.0E-03	mg/kg/day	2.E+00
				Biphenyl	0.00537	mg/l	NC		NC			1.5E-04	mg/kg/day	5.0E-01	mg/kg/day	3.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				ALDRIN	0.0000079	mg/l	7.4E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-06	2.2E-07	mg/kg/day	3.0E-05	mg/kg/day	7.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	9.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	2.7E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				ALUMINUM	55.28	mg/l	NC		NC			1.5E+00	mg/kg/day	1.0E+00	mg/kg/day	2.E+00
				ARSENIC	0.0251	mg/l	2.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-04	6.9E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			2.3E-04	mg/kg/day	4.0E-04	mg/kg/day	6.E-01
				BARIUM	0.362	mg/l	NC		NC			9.9E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-03	mg/kg/day	5.E-02
				CADMIUM	0.0808	mg/l	NC		NC			2.2E-03	mg/kg/day	1.0E-03	mg/kg/day	2.E+00
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-02	mg/kg/day	1.5E+00	mg/kg/day	8.E-03
				COBALT	0.0745	mg/l	NC		NC			2.0E-03	mg/kg/day	1.5E+00	mg/kg/day	1.E-03
				COPPER	52.99	mg/l	NC		NC			1.5E+00	mg/kg/day	4.0E-02	mg/kg/day	4.E+01
				IRON	342.6	mg/l	NC		NC			9.4E+00	mg/kg/day	7.0E-01	mg/kg/day	1.E+01
				LEAD	0.135	mg/l	1.3E-03	mg/kg/day	ND			3.7E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				MERCURY	0.00086978	mg/l	NC		NC			2.4E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				NICKEL	0.24	mg/l	NC		NC			6.6E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				SELENIUM	0.00744	mg/l	NC		NC			2.0E-04	mg/kg/day	5.0E-03	mg/kg/day	4.E-02
				SILVER	0.00262	mg/l	NC		NC			7.2E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				THALLIUM	0.00788	mg/l	NC		NC			2.2E-04	mg/kg/day	1.0E-05	mg/kg/day	2.E+01
				VANADIUM	0.397	mg/l	NC		NC			1.1E-02	mg/kg/day	5.0E-03	mg/kg/day	2.E+00
				ZINC	223.1	mg/l	NC		NC			6.1E+00	mg/kg/day	3.0E-01	mg/kg/day	2.E+01

TABLE G-18
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								9.E-04					1.E+02
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	3.1E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-07	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.2E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-08	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	1.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-09	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.8E-02	mg/kg/day	1.0E-02	mg/kg/day	2.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			9.1E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-06	3.1E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			1.7E-04	mg/kg/day	9.0E-03	mg/kg/day	2.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-07	5.6E-05	mg/kg/day	9.0E-02	mg/kg/day	6.E-04
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.2E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.7E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	9.E-06	4.8E-03	mg/kg/day	7.0E-02	mg/kg/day	7.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	5.2E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-05	1.5E-03	mg/kg/day	4.0E-03	mg/kg/day	4.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	5.0E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	1.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	--		NA			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			6.9E-03	mg/kg/day	1.0E-01	mg/kg/day	7.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-07	3.5E-04	mg/kg/day	6.0E-03	mg/kg/day	6.E-02
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.8E-04	mg/kg/day	2.0E-02	mg/kg/day	9.E-03
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.2E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-06	9.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	3.656	mg/l	NC		NC			3.5E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	1.0E-05	mg/kg/day				3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				VINYL CHLORIDE	0.0466	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	3.4E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-08	9.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			6.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	9.3E-05	mg/kg/day	NA			2.7E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	7.4E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-06	2.2E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				ALDRIN	0.0000079	mg/l	6.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			1.2E-06	mg/kg/day	6.0E-05	mg/kg/day	2.E-02
				BARIUM	0.362	mg/l	NC		NC			5.2E-05	mg/kg/day	1.4E-02	mg/kg/day	4.E-03
				BERYLLIUM	0.00373	mg/l	NC		NC			5.3E-07	mg/kg/day	1.4E-05	mg/kg/day	4.E-02
				CADMIUM	0.0808	mg/l	NC		NC			1.2E-05	mg/kg/day	2.5E-05	mg/kg/day	5.E-01
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				COBALT	0.0745	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			7.6E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			1.1E-04	mg/kg/day	5.6E-03	mg/kg/day	2.E-02
				MERCURY	0.00086978	mg/l	NC		NC			1.2E-07	mg/kg/day	2.1E-05	mg/kg/day	6.E-03
				NICKEL	0.24	mg/l	NC		NC			6.9E-06	mg/kg/day	8.0E-04	mg/kg/day	9.E-03
				SELENIUM	0.00744	mg/l	NC		NC			1.1E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				SILVER	0.00262	mg/l	NC		NC			2.2E-07	mg/kg/day	2.0E-04	mg/kg/day	1.E-03
				THALLIUM	0.00788	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	0.397	mg/l	NC		NC			5.7E-05	mg/kg/day	1.3E-04	mg/kg/day	4.E-01
				ZINC	223.1	mg/l	NC		NC			1.9E-02	mg/kg/day	3.0E-01	mg/kg/day	6.E-02
			EXPOSURE ROUTE TOTAL								4.E-05					5.E+00
		EXPOSURE POINT TOTAL									1.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					1.E+02

TABLE G-18
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.3E-01	ug/m3	5.8E-05	(ug/m3)-1	2.E-05	1.2E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.1E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	3.1E-01	ug/m3	2.0E-01	ug/m3	2.E+00
				1,1-DICHLOROETHANE			4.2E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	1.2E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				1,2,3-TRICHLOROBENZENE			NC		NC			1.5E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.4E+02	ug/m3	2.0E+00	ug/m3	1.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			1.4E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			1.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			2.5E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1,2-DICHLOROETHANE			4.5E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	1.3E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-DICHLOROETHYLENE			NC		NC			4.1E+01	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			1.1E+01	ug/m3	4.0E+00	ug/m3	3.E+00
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			1.5E+01	ug/m3	6.0E+01	ug/m3	3.E-01
				1,3,5-TRIMETHYLBENZENE			NC		NC			4.3E+00	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.4E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	1.3E+02	ug/m3	8.0E+02	ug/m3	2.E-01
				1-CHLOROBUTANE			5.2E+01	ug/m3	ND			1.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			5.2E+01	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			6.9E+01	ug/m3	7.8E-06	(ug/m3)-1	5.E-04	2.0E+02	ug/m3	3.0E+01	ug/m3	7.E+00
				CHLOROBENZENE			NC		NC			7.8E+02	ug/m3	5.0E+01	ug/m3	2.E+01
				CHLOROFORM			1.1E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	3.3E-01	ug/m3	9.8E+01	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			--		NA					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			2.0E+02	ug/m3	1.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			7.3E+01	ug/m3	1.0E-08	(ug/m3)-1	7.E-07	2.1E+02	ug/m3	6.0E+02	ug/m3	4.E-01
				METHYL-T-BUTYL ETHER			2.2E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	6.4E+00	ug/m3	3.0E+03	ug/m3	2.E-03
				NAPHTHALENE			NC		NC			4.6E+00	ug/m3	3.0E+00	ug/m3	2.E+00
				O-XYLENE			NC		NC			1.5E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				P-CHLOROTOLUENE			NC		NC			8.6E+01	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.0E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	3.0E-01	ug/m3	4.0E+01	ug/m3	7.E-03
				TOLUENE			NC		NC			1.9E+03	ug/m3	5.0E+03	ug/m3	4.E-01
				TRICHLOROETHYLENE			1.2E+00	ug/m3	4.1E-06	(ug/m3)-1	5.E-06	3.5E+00	ug/m3	2.0E+00	ug/m3	2.E+00
				VINYL CHLORIDE			9.7E+00	ug/m3	4.4E-06	(ug/m3)-1	4.E-05	2.8E+01	ug/m3	1.0E+02	ug/m3	3.E-01
				XYLENES,TOTAL			NC		NC			1.9E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			3.9E-01	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			2.2E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			3.4E-01	ug/m3	3.0E-01	ug/m3	1.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02

TABLE G-18
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**2.E-03**					**3.E+02**
SOIL	SOIL	AREA 3 (0-2 FT)	INGESTION	CYCLOHEXANE, METHYL-	ND	mg/kg	--		NA					NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			2.7E-08	mg/kg/day	4.0E-03	mg/kg/day	7.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	2.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	6.2E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	2.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	8.0E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Biphenyl	4.5	mg/kg	NC		NC			6.2E-06	mg/kg/day	5.0E-01	mg/kg/day	1.E-05
				NAPHTHALENE	ND	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			4.3E-03	mg/kg/day	1.0E+00	mg/kg/day	4.E-03
				ARSENIC	3.866	mg/kg	1.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.2E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	14.58	mg/kg	NC		NC			2.0E-05	mg/kg/day	1.5E+00	mg/kg/day	1.E-05
				VANADIUM	17.71	mg/kg	NC		NC			2.4E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
			EXPOSURE ROUTE TOTAL								2.E-06					2.E-02
			DERMAL	CYCLOHEXANE, METHYL-	ND	mg/kg	--		NA			--		NA		
				2-METHYLNAPHTHALENE	0.0197	mg/kg	NC		NC			1.4E-08	mg/kg/day	4.0E-03	mg/kg/day	3.E-06
				BENZO(A)PYRENE	0.0449	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(B)FLUORANTHENE	0.0587	mg/kg	1.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.2E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Biphenyl	4.5	mg/kg	NC		NC			2.5E-06	mg/kg/day	5.0E-01	mg/kg/day	5.E-06
				NAPHTHALENE	ND	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				ALUMINUM	3131	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	3.866	mg/kg	2.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	6.3E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	14.58	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	17.71	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								4.E-07					2.E-03
		EXPOSURE POINT TOTAL									2.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										2.E-06					2.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E+02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-19
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	2.8E-07	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-08	3.3E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			3.0E-05	mg/kg/day	8.0E-04	mg/kg/day	4.E-02
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			6.7E-05	mg/kg/day	1.0E-02	mg/kg/day	7.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			4.0E-06	mg/kg/day	2.0E-03	mg/kg/day	2.E-03
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			2.1E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	8.5E-08	mg/kg/day	9.1E-02	(mg/kg/day)-1	8.E-09	9.9E-07	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				1,2-DICHLOROPROPANE	0.194	mg/kg	7.7E-09	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-10	9.0E-08	mg/kg/day	9.0E-02	mg/kg/day	1.E-06
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			7.1E-07	mg/kg/day	3.0E-03	mg/kg/day	2.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	5.6E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	3.E-09	6.5E-06	mg/kg/day	7.0E-02	mg/kg/day	9.E-05
				BENZENE	5.709	mg/kg	2.3E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-08	2.6E-06	mg/kg/day	4.0E-03	mg/kg/day	7.E-04
				CHLOROBENZENE	14.87	mg/kg	NC		NC			6.9E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			9.7E-05	mg/kg/day	NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			5.1E-06	mg/kg/day	1.0E-01	mg/kg/day	5.E-05
				METHYLENE CHLORIDE	22.62	mg/kg	2.1E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	4.E-09	1.0E-05	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				O-XYLENE	20.21	mg/kg	NC		NC			9.3E-06	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			7.3E-08	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	2.8E-08	mg/kg/day	2.1E-03	(mg/kg/day)-1	6.E-11	3.3E-07	mg/kg/day	6.0E-03	mg/kg/day	5.E-05
				TOLUENE	197	mg/kg	NC		NC			9.1E-05	mg/kg/day	8.0E-02	mg/kg/day	1.E-03
				TRICHLOROETHYLENE - Kidney	69.28	mg/kg	2.7E-06	mg/kg/day	9.3E-03	(mg/kg/day)-1	3.E-08	3.2E-05	mg/kg/day	NA		
				TRICHLOROETHYLENE - Liver & N	69.28	mg/kg	2.7E-06	mg/kg/day	3.7E-02	(mg/kg/day)-1	1.E-07	3.2E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				XYLENES,TOTAL	52	mg/kg	NC		NC			2.4E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			9.7E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	3.3E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.7E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	3.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	1.8E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	5.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	2.6E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Biphenyl	192	mg/kg	NC		NC			8.9E-05	mg/kg/day	5.0E-01	mg/kg/day	2.E-04
				NAPHTHALENE	0.646	mg/kg	NC		NC			3.0E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				ALUMINUM	6380	mg/kg	NC		NC			2.9E-03	mg/kg/day	1.0E+00	mg/kg/day	3.E-03
				ANTIMONY	0.859	mg/kg	NC		NC			4.0E-07	mg/kg/day	4.0E-04	mg/kg/day	1.E-03
				ARSENIC	11.73	mg/kg	2.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	3.3E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	46.11	mg/kg	NC		NC			2.1E-05	mg/kg/day	1.5E+00	mg/kg/day	1.E-05
				COBALT	1.002	mg/kg	NC		NC			4.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				COPPER	107.1	mg/kg	NC		NC			4.9E-05	mg/kg/day	4.0E-02	mg/kg/day	1.E-03
				MERCURY	0.296	mg/kg	NC		NC			1.4E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				THALLIUM	0.662	mg/kg	NC		NC			3.1E-07	mg/kg/day	1.0E-05	mg/kg/day	3.E-02
				VANADIUM	64.72	mg/kg	NC		NC			3.0E-05	mg/kg/day	5.0E-03	mg/kg/day	6.E-03

TABLE G-19
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								7.E-07					2.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			3.1E-05	mg/kg/day	1.0E-02	mg/kg/day	3.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			9.9E-05	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	0.194	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			3.3E-07	mg/kg/day	3.0E-03	mg/kg/day	1.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	2.6E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-09	3.0E-06	mg/kg/day	7.0E-02	mg/kg/day	4.E-05
				BENZENE	5.709	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	14.87	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	22.62	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	20.21	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	197	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE - Kidney	69.28	mg/kg	--		--			--		NA		
				TRICHLOROETHYLENE - Liver & N	69.28	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	52	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			4.5E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	2.0E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.0E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	2.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.1E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	3.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.6E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Biphenyl	192	mg/kg	NC		NC			4.1E-05	mg/kg/day	5.0E-01	mg/kg/day	8.E-05
				NAPHTHALENE	0.646	mg/kg	NC		NC			1.8E-07	mg/kg/day	2.0E-02	mg/kg/day	9.E-06
				ALUMINUM	6380	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	0.859	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	11.73	mg/kg	6.4E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-07	7.5E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	46.11	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	1.002	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	107.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.296	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	0.662	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	64.72	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-07					8.E-03
		EXPOSURE POINT TOTAL									8.E-07					2.E-01
	EXPOSURE MEDIUM TOTAL										8.E-07					2.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**8.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**2.E-01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/2015
Checked by: BJR 04/09/2015

TABLE G-20
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	2.2E-07	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-08	1.3E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			1.2E-05	mg/kg/day	8.0E-04	mg/kg/day	2.E-02
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			2.7E-05	mg/kg/day	1.0E-02	mg/kg/day	3.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			1.6E-06	mg/kg/day	2.0E-03	mg/kg/day	8.E-04
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			8.5E-05	mg/kg/day	9.0E-02	mg/kg/day	9.E-04
				1,2-DICHLOROETHANE	2.136	mg/kg	6.7E-08	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-09	3.9E-07	mg/kg/day	6.0E-03	mg/kg/day	7.E-05
				1,2-DICHLOROPROPANE	0.194	mg/kg	6.1E-09	mg/kg/day	3.6E-02	(mg/kg/day)-1	2.E-10	3.5E-08	mg/kg/day	9.0E-02	mg/kg/day	4.E-07
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			2.8E-07	mg/kg/day	3.0E-03	mg/kg/day	9.E-05
				1,4-DICHLOROBENZENE	14.18	mg/kg	4.4E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-09	2.6E-06	mg/kg/day	7.0E-02	mg/kg/day	4.E-05
				BENZENE	5.709	mg/kg	1.8E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-08	1.0E-06	mg/kg/day	4.0E-03	mg/kg/day	3.E-04
				CHLOROBENZENE	14.87	mg/kg	NC		NC			2.7E-06	mg/kg/day	2.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			3.8E-05	mg/kg/day	NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			2.0E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				METHYLENE CHLORIDE	22.62	mg/kg	7.1E-07	mg/kg/day	2.0E-03	(mg/kg/day)-1	1.E-09	4.1E-06	mg/kg/day	6.0E-03	mg/kg/day	7.E-04
				O-XYLENE	20.21	mg/kg	NC		NC			3.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			2.9E-08	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	2.2E-08	mg/kg/day	2.1E-03	(mg/kg/day)-1	5.E-11	1.3E-07	mg/kg/day	6.0E-03	mg/kg/day	2.E-05
				TOLUENE	197	mg/kg	NC		NC			3.6E-05	mg/kg/day	8.0E-02	mg/kg/day	5.E-04
				TRICHLOROETHYLENE	69.28	mg/kg	2.2E-06	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-07	1.3E-05	mg/kg/day	5.0E-04	mg/kg/day	3.E-02
				XYLENES,TOTAL	52	mg/kg	NC		NC			9.5E-06	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			3.8E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	1.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-10	6.7E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	1.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-09	7.2E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	1.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.0E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Biphenyl	192	mg/kg	NC		NC			3.5E-05	mg/kg/day	5.0E-01	mg/kg/day	7.E-05
				NAPHTHALENE	0.646	mg/kg	NC		NC			1.2E-07	mg/kg/day	2.0E-02	mg/kg/day	6.E-06
				ALUMINUM	6380	mg/kg	NC		NC			1.2E-03	mg/kg/day	1.0E+00	mg/kg/day	1.E-03
				ANTIMONY	0.859	mg/kg	NC		NC			1.6E-07	mg/kg/day	4.0E-04	mg/kg/day	4.E-04
				ARSENIC	11.73	mg/kg	2.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.3E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	46.11	mg/kg	NC		NC			8.4E-06	mg/kg/day	1.5E+00	mg/kg/day	6.E-06
				COBALT	1.002	mg/kg	NC		NC			1.8E-07	mg/kg/day	3.0E-04	mg/kg/day	6.E-04
				COPPER	107.1	mg/kg	NC		NC			2.0E-05	mg/kg/day	4.0E-02	mg/kg/day	5.E-04
				MERCURY	0.296	mg/kg	NC		NC			5.4E-08	mg/kg/day	3.0E-04	mg/kg/day	2.E-04
				THALLIUM	0.662	mg/kg	NC		NC			1.2E-07	mg/kg/day	1.0E-05	mg/kg/day	1.E-02
				VANADIUM	64.72	mg/kg	NC		NC			1.2E-05	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
			EXPOSURE ROUTE TOTAL								5.E-07					7.E-02
			DERMAL	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			1.1E-05	mg/kg/day	1.0E-02	mg/kg/day	1.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			3.4E-05	mg/kg/day	9.0E-02	mg/kg/day	4.E-04
				1,2-DICHLOROETHANE	2.136	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	0.194	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			1.1E-07	mg/kg/day	3.0E-03	mg/kg/day	4.E-05
				1,4-DICHLOROBENZENE	14.18	mg/kg	1.8E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-09	1.0E-06	mg/kg/day	7.0E-02	mg/kg/day	1.E-05
				BENZENE	5.709	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	14.87	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	22.62	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	20.21	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	197	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	69.28	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	52	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.6E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				BENZO(A)ANTHRACENE	0.0366	mg/kg	6.0E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-10	3.5E-09	mg/kg/day	6.0E-02	mg/kg/day	6.E-08
				BENZO(A)PYRENE	0.0393	mg/kg	6.5E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-09	3.8E-09	mg/kg/day	6.0E-02	mg/kg/day	6.E-08
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	9.4E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-10	5.5E-09	mg/kg/day	6.0E-02	mg/kg/day	9.E-08
				Biphenyl	192	mg/kg	NC		NC			1.4E-05	mg/kg/day	5.0E-01	mg/kg/day	3.E-05
				NAPHTHALENE	0.646	mg/kg	NC		NC			6.2E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				ALUMINUM	6380	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	0.859	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	11.73	mg/kg	4.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	7.E-08	2.6E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				CHROMIUM	46.11	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	1.002	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	107.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.296	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	0.662	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	64.72	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								7.E-08					3.E-03
		EXPOSURE POINT TOTAL									6.E-07					7.E-02
	EXPOSURE MEDIUM TOTAL										6.E-07					7.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**6.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**7.E-02**

TABLE G-20
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-21
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**

TABLE G-21
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	2.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-07	6.3E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			5.8E-05	mg/kg/day	8.0E-04	mg/kg/day	7.E-02
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			1.3E-04	mg/kg/day	1.0E-02	mg/kg/day	1.E-02
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			7.6E-06	mg/kg/day	2.0E-03	mg/kg/day	4.E-03
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			4.1E-04	mg/kg/day	9.0E-02	mg/kg/day	5.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	6.7E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-08	1.9E-06	mg/kg/day	6.0E-03	mg/kg/day	3.E-04
				1,2-DICHLOROPROPANE	0.194	mg/kg	6.1E-08	mg/kg/day	3.6E-02	(mg/kg/day)-1	2.E-09	1.7E-07	mg/kg/day	9.0E-02	mg/kg/day	2.E-06
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-03	mg/kg/day	5.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	4.5E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-08	1.2E-05	mg/kg/day	7.0E-02	mg/kg/day	2.E-04
				BENZENE	5.709	mg/kg	1.8E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-07	5.0E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				CHLOROBENZENE	14.87	mg/kg	NC		NC			1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			1.8E-04	mg/kg/day	NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			9.7E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				METHYLENE CHLORIDE	22.62	mg/kg	7.1E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	1.E-08	2.0E-05	mg/kg/day	6.0E-03	mg/kg/day	3.E-03
				O-XYLENE	20.21	mg/kg	NC		NC			1.8E-05	mg/kg/day	2.0E-01	mg/kg/day	9.E-05
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			1.4E-07	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	2.2E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	5.E-10	6.3E-07	mg/kg/day	6.0E-03	mg/kg/day	1.E-04
				TOLUENE	197	mg/kg	NC		NC			1.7E-04	mg/kg/day	8.0E-02	mg/kg/day	2.E-03
				TRICHLOROETHYLENE	69.28	mg/kg	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.1E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				XYLENES,TOTAL	52	mg/kg	NC		NC			4.6E-05	mg/kg/day	2.0E-01	mg/kg/day	2.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	1.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	3.2E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	1.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	3.5E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Biphenyl	192	mg/kg	NC		NC			1.7E-04	mg/kg/day	5.0E-01	mg/kg/day	3.E-04
				NAPHTHALENE	0.646	mg/kg	NC		NC			5.7E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				ALUMINUM	6380	mg/kg	NC		NC			5.6E-03	mg/kg/day	1.0E+00	mg/kg/day	6.E-03
				ANTIMONY	0.859	mg/kg	NC		NC			7.6E-07	mg/kg/day	4.0E-04	mg/kg/day	2.E-03
				ARSENIC	11.73	mg/kg	2.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	6.2E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				CHROMIUM	46.11	mg/kg	NC		NC			4.1E-05	mg/kg/day	1.5E+00	mg/kg/day	3.E-05
				COBALT	1.002	mg/kg	NC		NC			8.8E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				COPPER	107.1	mg/kg	NC		NC			9.4E-05	mg/kg/day	4.0E-02	mg/kg/day	2.E-03
				MERCURY	0.296	mg/kg	NC		NC			2.6E-07	mg/kg/day	3.0E-04	mg/kg/day	9.E-04
				THALLIUM	0.662	mg/kg	NC		NC			5.8E-07	mg/kg/day	1.0E-05	mg/kg/day	6.E-02
				VANADIUM	64.72	mg/kg	NC		NC			5.7E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
			EXPOSURE ROUTE TOTAL								5.E-06					3.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			8.5E-05	mg/kg/day	1.0E-02	mg/kg/day	8.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			2.7E-04	mg/kg/day	9.0E-02	mg/kg/day	3.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	0.194	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			8.9E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	2.9E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-08	8.2E-06	mg/kg/day	7.0E-02	mg/kg/day	1.E-04
				BENZENE	5.709	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	14.87	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	22.62	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	20.21	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	197	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	69.28	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	52	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.2E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	9.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	2.8E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	3.0E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	1.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Biphenyl	192	mg/kg	NC		NC			1.1E-04	mg/kg/day	5.0E-01	mg/kg/day	2.E-04
				NAPHTHALENE	0.646	mg/kg	NC		NC			4.9E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	6380	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	0.859	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	11.73	mg/kg	7.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	2.0E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				CHROMIUM	46.11	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	1.002	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	107.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.296	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	0.662	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	64.72	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
		EXPOSURE POINT TOTAL									6.E-06					4.E-01
	EXPOSURE MEDIUM TOTAL										6.E-06					4.E-01

TABLE G-21
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	DUST AT SITE	DUST INHALATION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	3.8E-07	ug/m3	5.8E-05	(ug/m3)-1	2.E-11	1.1E-06	ug/m3	NA		
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			9.9E-06	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			2.2E-05	ug/m3	2.0E+00	ug/m3	1.E-05
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			1.3E-06	ug/m3	NA		
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			7.0E-05	ug/m3	2.0E+02	ug/m3	4.E-07
				1,2-DICHLOROETHANE	2.136	mg/kg	1.2E-07	ug/m3	2.6E-05	(ug/m3)-1	3.E-12	3.2E-07	ug/m3	7.0E+00	ug/m3	5.E-08
				1,2-DICHLOROPROPANE	0.194	mg/kg	NC		NC			2.9E-08	ug/m3	4.0E+00	ug/m3	7.E-09
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			2.3E-07	ug/m3	NA		
				1,4-DICHLOROBENZENE	14.18	mg/kg	7.7E-07	ug/m3	1.1E-05	(ug/m3)-1	8.E-12	2.1E-06	ug/m3	8.0E+02	ug/m3	3.E-09
				BENZENE	5.709	mg/kg	3.1E-07	ug/m3	7.8E-06	(ug/m3)-1	2.E-12	8.6E-07	ug/m3	3.0E+01	ug/m3	3.E-08
				CHLOROBENZENE	14.87	mg/kg	NC		NC			2.2E-06	ug/m3	5.0E+01	ug/m3	4.E-08
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			3.2E-05	ug/m3	3.0E+03	ug/m3	1.E-08
				ETHYLBENZENE	11.04	mg/kg	NC		NC			1.7E-06	ug/m3	1.0E+03	ug/m3	2.E-09
				METHYLENE CHLORIDE	22.62	mg/kg	1.2E-06	ug/m3	1.0E-08	(ug/m3)-1	1.E-14	3.4E-06	ug/m3	6.0E+02	ug/m3	6.E-09
				O-XYLENE	20.21	mg/kg	NC		NC			3.1E-06	ug/m3	1.0E+02	ug/m3	3.E-08
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			2.4E-08	ug/m3	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	3.8E-08	ug/m3	2.6E-07	(ug/m3)-1	1.E-14	1.1E-07	ug/m3	4.0E+01	ug/m3	3.E-09
				TOLUENE	197	mg/kg	NC		NC			3.0E-05	ug/m3	5.0E+03	ug/m3	6.E-09
				TRICHLOROETHYLENE	69.28	mg/kg	3.7E-06	ug/m3	4.1E-06	(ug/m3)-1	2.E-11	1.0E-05	ug/m3	2.0E+00	ug/m3	5.E-06
				XYLENES,TOTAL	52	mg/kg	NC		NC			7.9E-06	ug/m3	1.0E+02	ug/m3	8.E-08
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			3.2E-07	ug/m3	NA		
				BENZO(A)ANTHRACENE	0.0366	mg/kg	2.0E-09	ug/m3	1.1E-04	(ug/m3)-1	2.E-13	5.5E-09	ug/m3	NA		
				BENZO(A)PYRENE	0.0393	mg/kg	2.1E-09	ug/m3	1.1E-03	(ug/m3)-1	2.E-12	5.9E-09	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	3.1E-09	ug/m3	1.1E-04	(ug/m3)-1	3.E-13	8.7E-09	ug/m3	NA		
				Biphenyl	192	mg/kg	NC		NC			2.9E-05	ug/m3	NA		
				NAPHTHALENE	0.646	mg/kg	NC		NC			9.8E-08	ug/m3	3.0E+00	ug/m3	3.E-08
				ALUMINUM	6380	mg/kg	NC		NC			9.6E-04	ug/m3	5.0E+00	ug/m3	2.E-04
				ANTIMONY	0.859	mg/kg	NC		NC			1.3E-07	ug/m3	NA		
				ARSENIC	11.73	mg/kg	6.3E-07	ug/m3	4.3E-03	(ug/m3)-1	3.E-09	1.8E-06	ug/m3	1.5E-02	ug/m3	1.E-04
				CHROMIUM	46.11	mg/kg	NC		NC			7.0E-06	ug/m3	NA		
				COBALT	1.002	mg/kg	5.4E-08	ug/m3	9.0E-03	(ug/m3)-1	5.E-10	1.5E-07	ug/m3	6.0E-03	ug/m3	3.E-05
				COPPER	107.1	mg/kg	NC		NC			1.6E-05	ug/m3	NA		
				MERCURY	0.296	mg/kg	NC		NC			4.5E-08	ug/m3	3.0E-01	ug/m3	1.E-07
				THALLIUM	0.662	mg/kg	NC		NC			1.0E-07	ug/m3	NA		
				VANADIUM	64.72	mg/kg	NC		NC			9.8E-06	ug/m3	1.0E-01	ug/m3	1.E-04
			EXPOSURE ROUTE TOTAL								3.E-09					5.E-04
		EXPOSURE POINT TOTAL									3.E-09					5.E-04
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-22
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**

TABLE G-22
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	1.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-07	3.5E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			3.2E-05	mg/kg/day	8.0E-04	mg/kg/day	4.E-02
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			7.1E-05	mg/kg/day	1.0E-02	mg/kg/day	7.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			4.2E-06	mg/kg/day	2.0E-03	mg/kg/day	2.E-03
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			2.3E-04	mg/kg/day	9.0E-02	mg/kg/day	3.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	3.7E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-08	1.0E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				1,2-DICHLOROPROPANE	0.194	mg/kg	3.4E-08	mg/kg/day	3.6E-02	(mg/kg/day)-1	1.E-09	9.5E-08	mg/kg/day	9.0E-02	mg/kg/day	1.E-06
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			7.5E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	2.5E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-08	6.9E-06	mg/kg/day	7.0E-02	mg/kg/day	1.E-04
				BENZENE	5.709	mg/kg	1.0E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	5.E-08	2.8E-06	mg/kg/day	4.0E-03	mg/kg/day	7.E-04
				CHLOROBENZENE	14.87	mg/kg	NC		NC			7.3E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			1.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			5.4E-06	mg/kg/day	1.0E-01	mg/kg/day	5.E-05
				METHYLENE CHLORIDE	22.62	mg/kg	4.0E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	8.E-09	1.1E-05	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				O-XYLENE	20.21	mg/kg	NC		NC			9.9E-06	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			7.7E-08	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	1.2E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	3.E-10	3.5E-07	mg/kg/day	6.0E-03	mg/kg/day	6.E-05
				TOLUENE	197	mg/kg	NC		NC			9.6E-05	mg/kg/day	8.0E-02	mg/kg/day	1.E-03
				TRICHLOROETHYLENE	69.28	mg/kg	1.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	6.E-07	3.4E-05	mg/kg/day	5.0E-04	mg/kg/day	7.E-02
				XYLENES,TOTAL	52	mg/kg	NC		NC			2.5E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.0E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	6.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	1.8E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	6.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	1.9E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	1.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	2.8E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Biphenyl	192	mg/kg	NC		NC			9.4E-05	mg/kg/day	5.0E-01	mg/kg/day	2.E-04
				NAPHTHALENE	0.646	mg/kg	NC		NC			3.2E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	6380	mg/kg	NC		NC			3.1E-03	mg/kg/day	1.0E+00	mg/kg/day	3.E-03
				ANTIMONY	0.859	mg/kg	NC		NC			4.2E-07	mg/kg/day	4.0E-04	mg/kg/day	1.E-03
				ARSENIC	11.73	mg/kg	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	46.11	mg/kg	NC		NC			2.3E-05	mg/kg/day	1.5E+00	mg/kg/day	2.E-05
				COBALT	1.002	mg/kg	NC		NC			4.9E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				COPPER	107.1	mg/kg	NC		NC			5.2E-05	mg/kg/day	4.0E-02	mg/kg/day	1.E-03
				MERCURY	0.296	mg/kg	NC		NC			1.4E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				THALLIUM	0.662	mg/kg	NC		NC			3.2E-07	mg/kg/day	1.0E-05	mg/kg/day	3.E-02
				VANADIUM	64.72	mg/kg	NC		NC			3.2E-05	mg/kg/day	5.0E-03	mg/kg/day	6.E-03
			EXPOSURE ROUTE TOTAL								3.E-06					2.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			3.3E-05	mg/kg/day	1.0E-02	mg/kg/day	3.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			1.1E-04	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	0.194	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			3.5E-07	mg/kg/day	3.0E-03	mg/kg/day	1.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	1.1E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	6.E-09	3.2E-06	mg/kg/day	7.0E-02	mg/kg/day	5.E-05
				BENZENE	5.709	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	14.87	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	22.62	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	20.21	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	197	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	69.28	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	52	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			4.7E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	3.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	1.1E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	4.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	1.2E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	6.0E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	1.7E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Biphenyl	192	mg/kg	NC		NC			4.3E-05	mg/kg/day	5.0E-01	mg/kg/day	9.E-05
				NAPHTHALENE	0.646	mg/kg	NC		NC			1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	9.E-06
				ALUMINUM	6380	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	0.859	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	11.73	mg/kg	2.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-07	8.0E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				CHROMIUM	46.11	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	1.002	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	107.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.296	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	0.662	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	64.72	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-07					9.E-03
		EXPOSURE POINT TOTAL									5.E-07					9.E-03

TABLE G-22
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											4.E-04	TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA				5.E+01

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-23
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.4E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	3.E-06	1.7E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	3.3E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-07	3.8E-05	mg/kg/day	4.0E-03	mg/kg/day	9.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	1.2E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	7.E-08	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			2.0E-02	mg/kg/day	8.0E-04	mg/kg/day	3.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			3.3E-02	mg/kg/day	1.0E-02	mg/kg/day	3.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			1.9E-03	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			1.4E-02	mg/kg/day	2.0E-03	mg/kg/day	7.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			3.2E-02	mg/kg/day	9.0E-02	mg/kg/day	4.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.3E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-05	1.5E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.6E-03	mg/kg/day	9.0E-03	mg/kg/day	5.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-06	1.3E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-02
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	8.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			6.1E-04	mg/kg/day	1.0E-02	mg/kg/day	6.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			2.1E-03	mg/kg/day	3.0E-03	mg/kg/day	7.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.4E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-06	1.7E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			1.9E-02	mg/kg/day	4.0E-02	mg/kg/day	5.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			6.8E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			8.9E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	2.0E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-04	2.3E-02	mg/kg/day	4.0E-03	mg/kg/day	6.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			9.6E-02	mg/kg/day	2.0E-02	mg/kg/day	5.E+00
				CHLOROFORM	0.0005829	mg/l	3.2E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	1.E-07	3.7E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			2.0E-03	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			1.3E-03	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			2.7E-02	mg/kg/day	1.0E-01	mg/kg/day	3.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.1E-03	mg/kg/day	2.0E-01	mg/kg/day	6.E-03
				METHYLENE CHLORIDE	0.341	mg/l	9.9E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-05	2.2E-02	mg/kg/day	6.0E-03	mg/kg/day	4.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	7.5E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-07	8.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			6.5E-04	mg/kg/day	2.0E-02	mg/kg/day	3.E-02
				O-XYLENE	0.32	mg/l	NC		NC			2.0E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.1E-02	mg/kg/day	2.0E-02	mg/kg/day	6.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			1.3E-04	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			7.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			7.4E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.1E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-09	3.6E-05	mg/kg/day	6.0E-03	mg/kg/day	6.E-03
				TOLUENE	3.656	mg/l	NC		NC			2.3E-01	mg/kg/day	8.0E-02	mg/kg/day	3.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	1.9E-04	mg/kg/day	9.3E-03	(mg/kg/day)-1	2.E-06	4.1E-04	mg/kg/day	NA		
				TRICHLOROETHYLENE	0.00641	mg/l	3.5E-05	mg/kg/day	3.7E-02	(mg/kg/day)-1	1.E-06	4.1E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				VINYL CHLORIDE	0.0466	mg/l	2.6E-04	mg/kg/day	1.4E+00	(mg/kg/day)-1	4.E-04	3.0E-03	mg/kg/day	3.0E-03	mg/kg/day	1.E+00
				XYLENES,TOTAL	0.354	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				1,4-DIOXANE	0.00991	mg/l	5.4E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	5.E-06	6.3E-04	mg/kg/day	3.0E-02	mg/kg/day	2.E-02
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			5.8E-05	mg/kg/day	4.0E-03	mg/kg/day	1.E-02
				3-NITROANILINE	0.00346	mg/l	NC		NC			2.2E-04	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	2.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-05	3.0E-02	mg/kg/day	7.0E-03	mg/kg/day	4.E+00
				Biphenyl	0.00537	mg/l	NC		NC			3.4E-04	mg/kg/day	5.0E-01	mg/kg/day	7.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	2.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-07	3.3E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	4.3E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	3.0E-05	mg/kg/day	2.E-02
				HEPTACHLOR EPOXIDE	0.00001	mg/l	5.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				ALUMINUM	55.28	mg/l	NC		NC			3.5E+00	mg/kg/day	1.0E+00	mg/kg/day	4.E+00
				ARSENIC	0.0251	mg/l	1.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-04	1.6E-03	mg/kg/day	3.0E-04	mg/kg/day	5.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			5.3E-04	mg/kg/day	4.0E-04	mg/kg/day	1.E+00
				BARIUM	0.362	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				BERYLLIUM	0.00373	mg/l	NC		NC			2.4E-04	mg/kg/day	2.0E-03	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			5.2E-03	mg/kg/day	1.0E-03	mg/kg/day	5.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.0E-02	mg/kg/day	1.5E+00	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			4.8E-03	mg/kg/day	3.0E-04	mg/kg/day	2.E+01
				COPPER	52.99	mg/l	NC		NC			3.4E+00	mg/kg/day	4.0E-02	mg/kg/day	8.E+01
				IRON	342.6	mg/l	NC		NC			2.2E+01	mg/kg/day	7.0E-01	mg/kg/day	3.E+01
				LEAD	0.135	mg/l	7.4E-04	mg/kg/day	ND			8.6E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			4.9E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				MERCURY	0.00086978	mg/l	NC		NC			5.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				NICKEL	0.24	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	8.E-01
				SELENIUM	0.00744	mg/l	NC		NC			4.8E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
				SILVER	0.00262	mg/l	NC		NC			1.7E-04	mg/kg/day	5.0E-03	mg/kg/day	3.E-02
				THALLIUM	0.00788	mg/l	NC		NC			5.0E-04	mg/kg/day	1.0E-05	mg/kg/day	5.E+01
				VANADIUM	0.397	mg/l	NC		NC			2.5E-02	mg/kg/day	5.0E-03	mg/kg/day	5.E+00
			EXPOSURE ROUTE TOTAL								7.E-04					3.E+02

TABLE G-23
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.8E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-07	2.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.9E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-08	3.4E-06	mg/kg/day	4.0E-03	mg/kg/day	9.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	9.4E-07	mg/kg/day	5.7E-03	(mg/kg/day)-1	5.E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			4.1E-02	mg/kg/day	1.0E-02	mg/kg/day	4.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			2.0E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	6.2E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-07	7.2E-05	mg/kg/day	6.0E-03	mg/kg/day	1.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.0E-04	mg/kg/day	9.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-07	1.3E-04	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			1.8E-03	mg/kg/day	3.0E-03	mg/kg/day	6.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.3E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	1.1E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	3.1E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			3.3E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	2.8E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	9.E-09	3.3E-06	mg/kg/day	1.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.6E-02	mg/kg/day	1.0E-01	mg/kg/day	2.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	3.8E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	8.E-07	8.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			4.1E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	1.8E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	6.0E-03	mg/kg/day	4.E-03
				TOLUENE	3.656	mg/l	NC		NC			8.0E-02	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		NA		
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		5.0E-04	mg/kg/day	
				VINYL CHLORIDE	0.0466	mg/l	1.4E-05	mg/kg/day	1.4E+00	(mg/kg/day)-1	2.E-05	1.6E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	2.0E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-08	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.5E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	5.4E-05	mg/kg/day				6.3E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.2E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-07	4.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	3.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	6.E-08	4.5E-08	mg/kg/day	3.0E-05	mg/kg/day	1.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	9.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.1E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-05	mg/kg/day	6.E-02
				BARIUM	0.362	mg/l	NC		NC			1.5E-04	mg/kg/day	1.4E-02	mg/kg/day	1.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.6E-06	mg/kg/day	1.4E-05	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			3.4E-05	mg/kg/day	2.5E-05	mg/kg/day	1.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			2.2E-02	mg/kg/day	4.0E-02	mg/kg/day	6.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			3.2E-04	mg/kg/day	5.6E-03	mg/kg/day	6.E-02
				MERCURY	0.00086978	mg/l	NC		NC			3.7E-07	mg/kg/day	2.1E-05	mg/kg/day	2.E-02
				NICKEL	0.24	mg/l	NC		NC			2.0E-05	mg/kg/day	8.0E-04	mg/kg/day	3.E-02
				SELENIUM	0.00744	mg/l	NC		NC			3.1E-06	mg/kg/day	5.0E-03	mg/kg/day	6.E-04
				SILVER	0.00262	mg/l	NC		NC			6.6E-07	mg/kg/day	2.0E-04	mg/kg/day	3.E-03
				THALLIUM	0.00788	mg/l	NC		NC			3.3E-06	mg/kg/day	1.0E-05	mg/kg/day	3.E-01
				VANADIUM	0.397	mg/l	NC		NC			1.7E-04	mg/kg/day	1.3E-04	mg/kg/day	1.E+00
			EXPOSURE ROUTE TOTAL								5.E-05					1.E+01
		EXPOSURE POINT TOTAL									8.E-04					3.E+02
	EXPOSURE MEDIUM TOTAL										8.E-04					3.E+02

TABLE G-23
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.6E-01	ug/m3	5.8E-05	(ug/m3)-1	3.E-05	5.4E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.2E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	1.3E+00	ug/m3	2.0E-01	ug/m3	7.E+00
				1,1-DICHLOROETHANE			4.5E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	5.3E+00	ug/m3	5.0E+02	ug/m3	1.E-02
				1,2,3-TRICHLOROBENZENE			NC		NC			6.4E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.0E+03	ug/m3	2.0E+00	ug/m3	5.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			6.0E+01	ug/m3	7.0E+00	ug/m3	9.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			5.6E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			1.1E+03	ug/m3	2.0E+02	ug/m3	5.E+00
				1,2-DICHLOROETHANE			4.8E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	5.6E+01	ug/m3	7.0E+00	ug/m3	8.E+00
				1,2-DICHLOROETHYLENE			NC		NC			1.8E+02	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			4.7E+01	ug/m3	4.0E+00	ug/m3	1.E+01
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			6.6E+01	ug/m3	6.0E+01	ug/m3	1.E+00
				1,3,5-TRIMETHYLBENZENE			NC		NC			1.9E+01	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.8E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	5.6E+02	ug/m3	8.0E+02	ug/m3	7.E-01
				1-CHLOROBUTANE			NC		NC			6.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			2.2E+02	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			7.4E+01	ug/m3	7.8E-06	(ug/m3)-1	6.E-04	8.6E+02	ug/m3	3.0E+01	ug/m3	3.E+01
				CHLOROBENZENE			NC		NC			3.4E+03	ug/m3	5.0E+01	ug/m3	7.E+01
				CHLOROFORM			1.2E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	1.4E+00	ug/m3	9.8E+01	ug/m3	1.E-02
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			8.7E+02	ug/m3	1.0E+03	ug/m3	9.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			4.2E+02	ug/m3	1.0E-08	(ug/m3)-1	4.E-06	9.2E+02	ug/m3	6.0E+02	ug/m3	2.E+00
				METHYL-T-BUTYL ETHER			2.4E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	2.8E+01	ug/m3	3.0E+03	ug/m3	9.E-03
				NAPHTHALENE			NC		NC			2.0E+01	ug/m3	3.0E+00	ug/m3	7.E+00
				O-XYLENE			NC		NC			6.7E+02	ug/m3	1.0E+02	ug/m3	7.E+00
				P-CHLOROTOLUENE			NC		NC			3.7E+02	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.1E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	1.3E+00	ug/m3	4.0E+01	ug/m3	3.E-02
				TOLUENE			NC		NC			8.1E+03	ug/m3	5.0E+03	ug/m3	2.E+00
				TRICHLOROETHYLENE			6.9E+00	ug/m3	1.0E-06	(ug/m3)-1	7.E-06	1.5E+01	ug/m3	NA		
				TRICHLOROETHYLENE			1.3E+00	ug/m3	3.1E-06	(ug/m3)-1	4.E-06	1.5E+01	ug/m3	2.0E+00	ug/m3	8.E+00
				VINYL CHLORIDE			1.1E+01	ug/m3	8.8E-06	(ug/m3)-1	9.E-05	1.2E+02	ug/m3	1.0E+02	ug/m3	1.E+00
				XYLENES,TOTAL			NC		NC			8.2E+02	ug/m3	1.0E+02	ug/m3	8.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			1.7E+00	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			9.5E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			1.5E+00	ug/m3	3.0E-01	ug/m3	5.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
			EXPOSURE ROUTE TOTAL								1.E-03					7.E+02
		EXPOSURE POINT TOTAL									1.E-03					7.E+02

TABLE G-23
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - AMBIENT AIR	AMBIENT VAPOR INHALATIO	1,1,2,2-TETRACHLOROETHANE			--		5.8E-05	(ug/m3)-1				NA		
				1,1,2-TRICHLOROETHANE			--		1.6E-05	(ug/m3)-1				2.0E-01	ug/m3	
				1,1-DICHLOROETHANE			--		1.6E-06	(ug/m3)-1				5.0E+02	ug/m3	
				1,2,3-TRICHLOROBENZENE			NC		NC					NA		
				1,2,4-TRICHLOROBENZENE			NC		NC					2.0E+00	ug/m3	
				1,2,4-TRIMETHYLBENZENE			NC		NC					7.0E+00	ug/m3	
				1,2-CIS-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROBENZENE			NC		NC					2.0E+02	ug/m3	
				1,2-DICHLOROETHANE			--		2.6E-05	(ug/m3)-1				7.0E+00	ug/m3	
				1,2-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROPROPANE			NC		NC					4.0E+00	ug/m3	
				1,2-TRANS-DICHLOROETHYLENE			NC		NC					6.0E+01	ug/m3	
				1,3,5-TRIMETHYLBENZENE			NC		NC					NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			--		1.1E-05	(ug/m3)-1				8.0E+02	ug/m3	
				1-CHLOROBUTANE			NC		NC					NA		
				2-CHLOROTOLUENE			NC		NC					NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			--		7.8E-06	(ug/m3)-1				3.0E+01	ug/m3	
				CHLOROBENZENE			NC		NC					5.0E+01	ug/m3	
				CHLOROFORM			--		2.3E-05	(ug/m3)-1				9.8E+01	ug/m3	
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC					1.0E+03	ug/m3	
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			--		1.0E-08	(ug/m3)-1				6.0E+02	ug/m3	
				METHYL-T-BUTYL ETHER			--		2.6E-07	(ug/m3)-1				3.0E+03	ug/m3	
				NAPHTHALENE			NC		NC					3.0E+00	ug/m3	
				O-XYLENE			NC		NC					1.0E+02	ug/m3	
				P-CHLOROTOLUENE			NC		NC					NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			--		2.6E-07	(ug/m3)-1				4.0E+01	ug/m3	
				TOLUENE			NC		NC					5.0E+03	ug/m3	
				TRICHLOROETHYLENE			--		1.0E-06	(ug/m3)-1				NA		
				TRICHLOROETHYLENE			--		3.1E-06	(ug/m3)-1				2.0E+00	ug/m3	
				VINYL CHLORIDE			--		8.8E-06	(ug/m3)-1				1.0E+02	ug/m3	
				XYLENES,TOTAL			NC		NC					1.0E+02	ug/m3	
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC					NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC					NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC					3.0E-01	ug/m3	
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
			EXPOSURE ROUTE TOTAL								--					--
		EXPOSURE POINT TOTAL									0.E+00					0.E+00
	EXPOSURE MEDIUM TOTAL										1.E-03					7.E+02
GROUNDWATER TOTAL											**2.E-03**					**1.E+03**

TABLE G-23
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	7.8E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	9.1E-05	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			8.4E-04	mg/kg/day	8.0E-04	mg/kg/day	1.E+00
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			1.9E-03	mg/kg/day	1.0E-02	mg/kg/day	2.E-01
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			1.1E-04	mg/kg/day	2.0E-03	mg/kg/day	6.E-02
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			5.9E-03	mg/kg/day	9.0E-02	mg/kg/day	7.E-02
				1,2-DICHLOROETHANE	2.136	mg/kg	2.3E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-07	2.7E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				1,2-DICHLOROPROPANE	0.194	mg/kg	2.1E-07	mg/kg/day	3.6E-02	(mg/kg/day)-1	8.E-09	2.5E-06	mg/kg/day	9.0E-02	mg/kg/day	3.E-05
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			2.0E-05	mg/kg/day	3.0E-03	mg/kg/day	7.E-03
				1,4-DICHLOROBENZENE	14.18	mg/kg	1.6E-05	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-08	1.8E-04	mg/kg/day	7.0E-02	mg/kg/day	3.E-03
				BENZENE	5.709	mg/kg	6.3E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-07	7.3E-05	mg/kg/day	4.0E-03	mg/kg/day	2.E-02
				CHLOROBENZENE	14.87	mg/kg	NC		NC			1.9E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			2.7E-03	mg/kg/day	NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			1.4E-04	mg/kg/day	1.0E-01	mg/kg/day	1.E-03
				METHYLENE CHLORIDE	22.62	mg/kg	1.3E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	3.E-07	2.9E-04	mg/kg/day	6.0E-03	mg/kg/day	5.E-02
				O-XYLENE	20.21	mg/kg	NC		NC			2.6E-04	mg/kg/day	2.0E-01	mg/kg/day	1.E-03
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			2.0E-06	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	7.8E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	2.E-09	9.1E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	197	mg/kg	NC		NC			2.5E-03	mg/kg/day	8.0E-02	mg/kg/day	3.E-02
				TRICHLOROETHYLENE	69.28	mg/kg	7.6E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-06	8.9E-04	mg/kg/day	5.0E-04	mg/kg/day	2.E+00
				XYLENES,TOTAL	52	mg/kg	NC		NC			6.6E-04	mg/kg/day	2.0E-01	mg/kg/day	3.E-03
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			2.7E-05	mg/kg/day	3.0E-04	mg/kg/day	9.E-02
				BENZO(A)ANTHRACENE	0.0366	mg/kg	2.1E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	4.7E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				BENZO(A)PYRENE	0.0393	mg/kg	2.3E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	5.0E-07	mg/kg/day	6.0E-02	mg/kg/day	8.E-06
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	3.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	7.3E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Biphenyl	192	mg/kg	NC		NC			2.5E-03	mg/kg/day	5.0E-01	mg/kg/day	5.E-03
				NAPHTHALENE	0.646	mg/kg	NC		NC			8.3E-06	mg/kg/day	2.0E-02	mg/kg/day	4.E-04
				ALUMINUM	6380	mg/kg	NC		NC			8.2E-02	mg/kg/day	1.0E+00	mg/kg/day	8.E-02
				ANTIMONY	0.859	mg/kg	NC		NC			1.1E-05	mg/kg/day	4.0E-04	mg/kg/day	3.E-02
				ARSENIC	11.73	mg/kg	7.7E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-05	9.0E-05	mg/kg/day	3.0E-04	mg/kg/day	3.E-01
				CHROMIUM	46.11	mg/kg	NC		NC			5.9E-04	mg/kg/day	1.5E+00	mg/kg/day	4.E-04
				COBALT	1.002	mg/kg	NC		NC			1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				COPPER	107.1	mg/kg	NC		NC			1.4E-03	mg/kg/day	4.0E-02	mg/kg/day	3.E-02
				MERCURY	0.296	mg/kg	NC		NC			3.8E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				THALLIUM	0.662	mg/kg	NC		NC			8.5E-06	mg/kg/day	1.0E-05	mg/kg/day	8.E-01
				VANADIUM	64.72	mg/kg	NC		NC			8.3E-04	mg/kg/day	5.0E-03	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								2.E-05					5.E+00
			DERMAL	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			5.2E-04	mg/kg/day	1.0E-02	mg/kg/day	5.E-02
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			1.7E-03	mg/kg/day	9.0E-02	mg/kg/day	2.E-02
				1,2-DICHLOROETHANE	2.136	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	0.194	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			5.5E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				1,4-DICHLOROBENZENE	14.18	mg/kg	4.4E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-08	5.1E-05	mg/kg/day	7.0E-02	mg/kg/day	7.E-04
				BENZENE	5.709	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	14.87	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	22.62	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	20.21	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	197	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	69.28	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	52	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			7.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				BENZO(A)ANTHRACENE	0.0366	mg/kg	7.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-08	1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(A)PYRENE	0.0393	mg/kg	8.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-07	1.8E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	1.2E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-08	2.7E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				Biphenyl	192	mg/kg	NC		NC			6.9E-04	mg/kg/day	5.0E-01	mg/kg/day	1.E-03
				NAPHTHALENE	0.646	mg/kg	NC		NC			3.0E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				ALUMINUM	6380	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	0.859	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	11.73	mg/kg	1.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				CHROMIUM	46.11	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	1.002	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	107.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.296	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	0.662	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	64.72	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								2.E-06					1.E-01
		EXPOSURE POINT TOTAL									2.E-05					5.E+00
	EXPOSURE MEDIUM TOTAL										2.E-05					5.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**1.E+03**

TABLE G-23
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-24
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	2.5E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-06	7.2E-05	mg/kg/day	2.0E-02	mg/kg/day	4.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.6E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-07	1.6E-05	mg/kg/day	4.0E-03	mg/kg/day	4.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	2.0E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-07	6.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			8.6E-03	mg/kg/day	8.0E-04	mg/kg/day	1.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.4E-02	mg/kg/day	1.0E-02	mg/kg/day	1.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			8.3E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			6.1E-03	mg/kg/day	2.0E-03	mg/kg/day	3.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			1.4E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	2.2E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-05	6.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			2.0E-03	mg/kg/day	9.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-06	5.6E-04	mg/kg/day	9.0E-02	mg/kg/day	6.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			7.3E-04	mg/kg/day	2.0E-02	mg/kg/day	4.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			2.6E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.9E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	2.5E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-05	7.2E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			8.0E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			2.9E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			3.8E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	3.4E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-04	1.0E-02	mg/kg/day	4.0E-03	mg/kg/day	2.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			4.1E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	5.5E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-07	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			8.5E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			5.5E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.1E-02	mg/kg/day	1.0E-01	mg/kg/day	1.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			4.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.E-03
				METHYLENE CHLORIDE	0.341	mg/l	3.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	6.E-06	9.3E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	1.3E-04	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-07	3.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			2.8E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				O-XYLENE	0.32	mg/l	NC		NC			8.8E-03	mg/kg/day	2.0E-01	mg/kg/day	4.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			4.8E-03	mg/kg/day	2.0E-02	mg/kg/day	2.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			5.7E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			3.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			3.2E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	5.4E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	1.E-08	1.6E-05	mg/kg/day	6.0E-03	mg/kg/day	3.E-03
				TOLUENE	3.656	mg/l	NC		NC			1.0E-01	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	6.0E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-06	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				VINYL CHLORIDE	0.0466	mg/l	4.4E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	3.E-04	1.3E-03	mg/kg/day	3.0E-03	mg/kg/day	4.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			9.7E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				1,4-DIOXANE	0.00991	mg/l	9.3E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	9.E-06	2.7E-04	mg/kg/day	3.0E-02	mg/kg/day	9.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			4.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			2.5E-05	mg/kg/day	4.0E-03	mg/kg/day	6.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			9.5E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	4.4E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	3.E-05	1.3E-02	mg/kg/day	7.0E-03	mg/kg/day	2.E+00
				Biphenyl	0.00537	mg/l	NC		NC			1.5E-04	mg/kg/day	5.0E-01	mg/kg/day	3.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				ALDRIN	0.0000079	mg/l	7.4E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-06	2.2E-07	mg/kg/day	3.0E-05	mg/kg/day	7.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	9.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	2.7E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				ALUMINUM	55.28	mg/l	NC		NC			1.5E+00	mg/kg/day	1.0E+00	mg/kg/day	2.E+00
				ARSENIC	0.0251	mg/l	2.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-04	6.9E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			2.3E-04	mg/kg/day	4.0E-04	mg/kg/day	6.E-01
				BARIUM	0.362	mg/l	NC		NC			9.9E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-03	mg/kg/day	5.E-02
				CADMIUM	0.0808	mg/l	NC		NC			2.2E-03	mg/kg/day	1.0E-03	mg/kg/day	2.E+00
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-02	mg/kg/day	1.5E+00	mg/kg/day	8.E-03
				COBALT	0.0745	mg/l	NC		NC			2.0E-03	mg/kg/day	3.0E-04	mg/kg/day	7.E+00
				COPPER	52.99	mg/l	NC		NC			1.5E+00	mg/kg/day	4.0E-02	mg/kg/day	4.E+01
				IRON	342.6	mg/l	NC		NC			9.4E+00	mg/kg/day	7.0E-01	mg/kg/day	1.E+01
				LEAD	0.135	mg/l	1.3E-03	mg/kg/day	ND			3.7E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				MERCURY	0.00086978	mg/l	NC		NC			2.4E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				NICKEL	0.24	mg/l	NC		NC			6.6E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				SELENIUM	0.00744	mg/l	NC		NC			2.0E-04	mg/kg/day	5.0E-03	mg/kg/day	4.E-02
				SILVER	0.00262	mg/l	NC		NC			7.2E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				THALLIUM	0.00788	mg/l	NC		NC			2.2E-04	mg/kg/day	1.0E-05	mg/kg/day	2.E+01
				VANADIUM	0.397	mg/l	NC		NC			1.1E-02	mg/kg/day	5.0E-03	mg/kg/day	2.E+00
				ZINC	223.1	mg/l	NC		NC			6.1E+00	mg/kg/day	3.0E-01	mg/kg/day	2.E+01
			EXPOSURE ROUTE TOTAL								9.E-04					1.E+02

TABLE G-24
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	3.1E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-07	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.2E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-08	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	1.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-09	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.8E-02	mg/kg/day	1.0E-02	mg/kg/day	2.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			9.1E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-06	3.1E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			1.7E-04	mg/kg/day	9.0E-03	mg/kg/day	2.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-07	5.6E-05	mg/kg/day	9.0E-02	mg/kg/day	6.E-04
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.2E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.7E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	9.E-06	4.8E-03	mg/kg/day	7.0E-02	mg/kg/day	7.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	5.2E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-05	1.5E-03	mg/kg/day	4.0E-03	mg/kg/day	4.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	5.0E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	1.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			6.9E-03	mg/kg/day	1.0E-01	mg/kg/day	7.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-07	3.5E-04	mg/kg/day	6.0E-03	mg/kg/day	6.E-02
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.8E-04	mg/kg/day	2.0E-02	mg/kg/day	9.E-03
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.2E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-06	9.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	3.656	mg/l	NC		NC			3.5E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	1.0E-05	mg/kg/day				3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				VINYL CHLORIDE	0.0466	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	3.4E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-08	9.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			6.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	9.3E-05	mg/kg/day				2.7E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	7.4E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-06	2.2E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				ALDRIN	0.0000079	mg/l	6.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			1.2E-06	mg/kg/day	6.0E-05	mg/kg/day	2.E-02
				BARIUM	0.362	mg/l	NC		NC			5.2E-05	mg/kg/day	1.4E-02	mg/kg/day	4.E-03
				BERYLLIUM	0.00373	mg/l	NC		NC			5.3E-07	mg/kg/day	1.4E-05	mg/kg/day	4.E-02
				CADMIUM	0.0808	mg/l	NC		NC			1.2E-05	mg/kg/day	2.5E-05	mg/kg/day	5.E-01
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			7.6E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			1.1E-04	mg/kg/day	5.6E-03	mg/kg/day	2.E-02
				MERCURY	0.00086978	mg/l	NC		NC			1.2E-07	mg/kg/day	2.1E-05	mg/kg/day	6.E-03
				NICKEL	0.24	mg/l	NC		NC			6.9E-06	mg/kg/day	8.0E-04	mg/kg/day	9.E-03
				SELENIUM	0.00744	mg/l	NC		NC			1.1E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				SILVER	0.00262	mg/l	NC		NC			2.2E-07	mg/kg/day	2.0E-04	mg/kg/day	1.E-03
				THALLIUM	0.00788	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	0.397	mg/l	NC		NC			5.7E-05	mg/kg/day	1.3E-04	mg/kg/day	4.E-01
				ZINC	223.1	mg/l	NC		NC			1.9E-02	mg/kg/day	3.0E-01	mg/kg/day	6.E-02
			EXPOSURE ROUTE TOTAL								4.E-05					5.E+00
		EXPOSURE POINT TOTAL									1.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					1.E+02

TABLE G-24
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.3E-01	ug/m3	5.8E-05	(ug/m3)-1	2.E-05	1.2E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.1E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	3.1E-01	ug/m3	2.0E-01	ug/m3	2.E+00
				1,1-DICHLOROETHANE			4.2E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	1.2E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				1,2,3-TRICHLOROBENZENE			NC		NC			1.5E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.4E+02	ug/m3	2.0E+00	ug/m3	1.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			1.4E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			1.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			2.5E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1,2-DICHLOROETHANE			4.5E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	1.3E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-DICHLOROETHYLENE			NC		NC			4.1E+01	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			1.1E+01	ug/m3	4.0E+00	ug/m3	3.E+00
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			1.5E+01	ug/m3	6.0E+01	ug/m3	3.E-01
				1,3,5-TRIMETHYLBENZENE			NC		NC			4.3E+00	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.4E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	1.3E+02	ug/m3	8.0E+02	ug/m3	2.E-01
				1-CHLOROBUTANE			NC		NC			1.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			5.2E+01	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			6.9E+01	ug/m3	7.8E-06	(ug/m3)-1	5.E-04	2.0E+02	ug/m3	3.0E+01	ug/m3	7.E+00
				CHLOROBENZENE			NC		NC			7.8E+02	ug/m3	5.0E+01	ug/m3	2.E+01
				CHLOROFORM			1.1E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	3.3E-01	ug/m3	9.8E+01	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			2.0E+02	ug/m3	1.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			7.3E+01	ug/m3	1.0E-08	(ug/m3)-1	7.E-07	2.1E+02	ug/m3	6.0E+02	ug/m3	4.E-01
				METHYL-T-BUTYL ETHER			2.2E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	6.4E+00	ug/m3	3.0E+03	ug/m3	2.E-03
				NAPHTHALENE			NC		NC			4.6E+00	ug/m3	3.0E+00	ug/m3	2.E+00
				O-XYLENE			NC		NC			1.5E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				P-CHLOROTOLUENE			NC		NC			8.6E+01	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.0E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	3.0E-01	ug/m3	4.0E+01	ug/m3	7.E-03
				TOLUENE			NC		NC			1.9E+03	ug/m3	5.0E+03	ug/m3	4.E-01
				TRICHLOROETHYLENE			1.2E+00	ug/m3	4.1E-06	(ug/m3)-1	5.E-06	3.5E+00	ug/m3	2.0E+00	ug/m3	2.E+00
				VINYL CHLORIDE			9.7E+00	ug/m3	4.4E-06	(ug/m3)-1	4.E-05	2.8E+01	ug/m3	1.0E+02	ug/m3	3.E-01
				XYLENES,TOTAL			NC		NC			1.9E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			3.9E-01	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			2.2E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			3.4E-01	ug/m3	3.0E-01	ug/m3	1.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02
GROUNDWATER TOTAL											**2.E-03**					**3.E+02**

TABLE G-24
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	3.3E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	7.E-07	9.7E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			9.0E-05	mg/kg/day	8.0E-04	mg/kg/day	1.E-01
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			2.0E-04	mg/kg/day	1.0E-02	mg/kg/day	2.E-02
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			1.2E-05	mg/kg/day	2.0E-03	mg/kg/day	6.E-03
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			6.4E-04	mg/kg/day	9.0E-02	mg/kg/day	7.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	1.0E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	9.E-08	2.9E-06	mg/kg/day	6.0E-03	mg/kg/day	5.E-04
				1,2-DICHLOROPROPANE	0.194	mg/kg	9.1E-08	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-09	2.7E-07	mg/kg/day	9.0E-02	mg/kg/day	3.E-06
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			2.1E-06	mg/kg/day	3.0E-03	mg/kg/day	7.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	6.7E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	4.E-08	1.9E-05	mg/kg/day	7.0E-02	mg/kg/day	3.E-04
				BENZENE	5.709	mg/kg	2.7E-06	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-07	7.8E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				CHLOROBENZENE	14.87	mg/kg	NC		NC			2.0E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			2.9E-04	mg/kg/day	NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			1.5E-05	mg/kg/day	1.0E-01	mg/kg/day	2.E-04
				METHYLENE CHLORIDE	22.62	mg/kg	1.1E-05	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-08	3.1E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				O-XYLENE	20.21	mg/kg	NC		NC			2.8E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			2.2E-07	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	3.3E-07	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-10	9.8E-07	mg/kg/day	6.0E-03	mg/kg/day	2.E-04
				TOLUENE	197	mg/kg	NC		NC			2.7E-04	mg/kg/day	8.0E-02	mg/kg/day	3.E-03
				TRICHLOROETHYLENE	69.28	mg/kg	3.3E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	9.5E-05	mg/kg/day	5.0E-04	mg/kg/day	2.E-01
				XYLENES,TOTAL	52	mg/kg	NC		NC			7.1E-05	mg/kg/day	2.0E-01	mg/kg/day	4.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				BENZO(A)ANTHRACENE	0.0366	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	5.0E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	1.8E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	5.4E-08	mg/kg/day	6.0E-02	mg/kg/day	9.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	2.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	7.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				Biphenyl	192	mg/kg	NC		NC			2.6E-04	mg/kg/day	5.0E-01	mg/kg/day	5.E-04
				NAPHTHALENE	0.646	mg/kg	NC		NC			8.8E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				ALUMINUM	6380	mg/kg	NC		NC			8.7E-03	mg/kg/day	1.0E+00	mg/kg/day	9.E-03
				ANTIMONY	0.859	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-04	mg/kg/day	3.E-03
				ARSENIC	11.73	mg/kg	3.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-06	9.6E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				CHROMIUM	46.11	mg/kg	NC		NC			6.3E-05	mg/kg/day	1.5E+00	mg/kg/day	4.E-05
				COBALT	1.002	mg/kg	NC		NC			1.4E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				COPPER	107.1	mg/kg	NC		NC			1.5E-04	mg/kg/day	4.0E-02	mg/kg/day	4.E-03
				MERCURY	0.296	mg/kg	NC		NC			4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				THALLIUM	0.662	mg/kg	NC		NC			9.1E-07	mg/kg/day	1.0E-05	mg/kg/day	9.E-02
				VANADIUM	64.72	mg/kg	NC		NC			8.9E-05	mg/kg/day	5.0E-03	mg/kg/day	2.E-02
			EXPOSURE ROUTE TOTAL								8.E-06					5.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			8.0E-05	mg/kg/day	1.0E-02	mg/kg/day	8.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			2.5E-04	mg/kg/day	9.0E-02	mg/kg/day	3.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	0.194	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			8.4E-07	mg/kg/day	3.0E-03	mg/kg/day	3.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	2.7E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-08	7.8E-06	mg/kg/day	7.0E-02	mg/kg/day	1.E-04
				BENZENE	5.709	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		4.0E-03	mg/kg/day	
				CHLOROBENZENE	14.87	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	22.62	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				O-XYLENE	20.21	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		6.0E-03	mg/kg/day	
				TOLUENE	197	mg/kg	NC		NC			--		8.0E-02	mg/kg/day	
				TRICHLOROETHYLENE	69.28	mg/kg	--		--			--		5.0E-04	mg/kg/day	
				XYLENES,TOTAL	52	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				BENZO(A)ANTHRACENE	0.0366	mg/kg	8.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	2.6E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	9.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	2.8E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	1.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.1E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				Biphenyl	192	mg/kg	NC		NC			1.0E-04	mg/kg/day	5.0E-01	mg/kg/day	2.E-04
				NAPHTHALENE	0.646	mg/kg	NC		NC			4.6E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	6380	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	0.859	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	11.73	mg/kg	6.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.9E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				CHROMIUM	46.11	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	1.002	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	107.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MERCURY	0.296	mg/kg	NC		NC			--		2.1E-05	mg/kg/day	
				THALLIUM	0.662	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	64.72	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-06					2.E-02
		EXPOSURE POINT TOTAL									9.E-06					5.E-01
	EXPOSURE MEDIUM TOTAL										9.E-06					5.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E+02**

TABLE G-24
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-25
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.008	mg/l	6.7E-10	mg/kg/day	2.0E-01	(mg/kg/day)-1	1.E-10	4.7E-08	mg/kg/day	5.0E-01	mg/kg/day	9.E-08
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	0.0005	mg/l	4.2E-11	mg/kg/day	5.7E-03	(mg/kg/day)-1	2.E-13	2.9E-09	mg/kg/day	2.0E+00	mg/kg/day	1.E-09
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.3	mg/l	NC		NC			1.8E-06	mg/kg/day	9.0E-02	mg/kg/day	2.E-05
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC					NA		
				1,2-CIS-DICHLOROETHYLENE	0.075	mg/l	NC		NC			4.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				1,2-DICHLOROBENZENE	0.59	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-01	mg/kg/day	6.E-06
				1,2-DICHLOROETHANE	0.036	mg/l	3.0E-09	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-10	2.1E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	0.008	mg/l	NC		NC			4.7E-08	mg/kg/day	2.0E-01	mg/kg/day	2.E-07
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	0.065	mg/l	NC		NC			3.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				1,4-DICHLOROBENZENE	0.18	mg/l	1.5E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-11	1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				1-CHLOROBUTANE	NA	mg/l	NC		NC					7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC					NA		
				BENZENE	1.8	mg/l	1.5E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	8.E-09	1.1E-05	mg/kg/day	1.0E-02	mg/kg/day	1.E-03
				CHLOROBENZENE	8.1	mg/l	NC		NC			4.8E-05	mg/kg/day	7.0E-02	mg/kg/day	7.E-04
				CHLOROFORM	0.002	mg/l	1.7E-10	mg/kg/day	3.1E-02	(mg/kg/day)-1	5.E-12	1.2E-08	mg/kg/day	1.0E-01	mg/kg/day	1.E-07
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC					NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC					NA		
				ETHYLBENZENE	0.28	mg/l	NC		NC			1.6E-06	mg/kg/day	5.0E-02	mg/kg/day	3.E-05
				M+P-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.003	mg/l	2.5E-10	mg/kg/day	2.0E-03	(mg/kg/day)-1	5.E-13	1.8E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				METHYL-T-BUTYL ETHER	0.0014	mg/l	1.2E-10	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-13	8.2E-09	mg/kg/day	3.0E-01	mg/kg/day	3.E-08
				NAPHTHALENE	0.036	mg/l	NC		NC			2.1E-07	mg/kg/day	6.0E-01	mg/kg/day	4.E-07
				O-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC					NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC					NA		
				t-Butyl Alcohol	0.013	mg/l	NC		NC			7.6E-08	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.003	mg/l	2.5E-10	mg/kg/day	2.1E-03	(mg/kg/day)-1	5.E-13	1.8E-08	mg/kg/day	1.0E-01	mg/kg/day	2.E-07
				TOLUENE	4	mg/l	NC		NC			2.3E-05	mg/kg/day	8.0E-01	mg/kg/day	3.E-05
				TRICHLOROETHYLENE	0.007	mg/l	5.9E-10	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-11	4.1E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				VINYL CHLORIDE	0.015	mg/l	1.3E-09	mg/kg/day	7.2E-01	(mg/kg/day)-1	9.E-10	8.8E-08	mg/kg/day	3.0E-03	mg/kg/day	3.E-05
				XYLENES,TOTAL	1.2	mg/l	NC		NC			7.0E-06	mg/kg/day	4.0E-01	mg/kg/day	2.E-05
				1,4-DIOXANE	0.14	mg/l	1.2E-08	mg/kg/day	1.0E-01	(mg/kg/day)-1	1.E-09	8.2E-07	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				2,4-DIMETHYLPHENOL	0.1	mg/l	NC		NC			5.9E-07	mg/kg/day	5.0E-02	mg/kg/day	1.E-05
				2-METHYLNAPHTHALENE	0.005	mg/l	NC		NC			2.9E-08	mg/kg/day	4.0E-03	mg/kg/day	7.E-06
				3-NITROANILINE	ND	mg/l	NC		NC					1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--		5.7E-03	(mg/kg/day)-1				NA		
				Biphenyl	0.024	mg/l	NC		NC			1.4E-07	mg/kg/day	1.0E-01	mg/kg/day	1.E-06
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1				1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					4.0E-04	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					5.0E-04	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				COBALT	NA	mg/l	NC		NC					3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC					7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND					NA		
				MANGANESE	NA	mg/l	NC		NC					1.4E-01	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					2.0E-03	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					7.0E-04	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-08					2.E-03
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.008	mg/l	3.0E-08	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-09	2.1E-06	mg/kg/day	5.0E-01	mg/kg/day	4.E-06
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	0.0005	mg/l	1.6E-09	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-12	1.1E-07	mg/kg/day	2.0E+00	mg/kg/day	6.E-08
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.3	mg/l	NC		NC			6.8E-04	mg/kg/day	9.0E-02	mg/kg/day	8.E-03
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.075	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	0.59	mg/l	NC		NC			7.9E-04	mg/kg/day	6.0E-01	mg/kg/day	1.E-03
				1,2-DICHLOROETHANE	0.036	mg/l	7.2E-08	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-09	5.1E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	0.008	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	0.065	mg/l	NC		NC			1.2E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				1,4-DICHLOROBENZENE	0.18	mg/l	3.5E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-08	2.5E-04	mg/kg/day	7.0E-02	mg/kg/day	4.E-03
				1-CHLOROBUTANE	NA	mg/l	NC		NC			--		7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC			--		NA		
				BENZENE	1.8	mg/l	1.2E-05	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-07	8.5E-04	mg/kg/day	1.0E-02	mg/kg/day	9.E-02
				CHLOROBENZENE	8.1	mg/l	NC		NC			7.3E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				CHLOROFORM	0.002	mg/l	6.7E-09	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-10	4.7E-07	mg/kg/day	1.0E-01	mg/kg/day	5.E-06
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC			--		NA		

TABLE G-25
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				DIMETHYLSULFIDE	NA	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.28	mg/l	NC		NC			4.1E-04	mg/kg/day	5.0E-02	mg/kg/day	8.E-03
				M+P-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.003	mg/l	5.0E-09	mg/kg/day	2.0E-03	(mg/kg/day)-1	1.E-11	3.5E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				METHYL-T-BUTYL ETHER	0.0014	mg/l	--		1.8E-03	(mg/kg/day)-1		--		3.0E-01	mg/kg/day	
				NAPHTHALENE	0.036	mg/l	NC		NC			5.2E-05	mg/kg/day	6.0E-01	mg/kg/day	9.E-05
				O-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.013	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.003	mg/l	5.0E-08	mg/kg/day	5.4E-01	(mg/kg/day)-1	3.E-08	3.5E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				TOLUENE	4	mg/l	NC		NC			3.8E-03	mg/kg/day	8.0E-01	mg/kg/day	5.E-03
				TRICHLOROETHYLENE	0.007	mg/l	4.0E-08	mg/kg/day				2.8E-06	mg/kg/day	3.0E-04	mg/kg/day	9.E-03
				VINYL CHLORIDE	0.015	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	1.2	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				1,4-DIOXANE	0.14	mg/l	2.2E-08	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-09	1.6E-06	mg/kg/day	5.0E-01	mg/kg/day	3.E-06
				2,4-DIMETHYLPHENOL	0.1	mg/l	NC		NC			3.7E-05	mg/kg/day	5.0E-02	mg/kg/day	7.E-04
				2-METHYLNAPHTHALENE	0.005	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	ND	mg/l	NC		NC			--		1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--							NA		
				Biphenyl	0.024	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					6.0E-05	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					1.4E-02	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					3.5E-05	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					1.3E-05	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.3E-02	mg/kg/day	
				COBALT	NA	mg/l	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND			--		NA		
				MANGANESE	NA	mg/l	NC		NC					5.6E-03	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					1.4E-04	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					2.0E-04	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					1.8E-05	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	
			EXPOSURE ROUTE TOTAL								7.E-07					2.E-01
		EXPOSURE POINT TOTAL									7.E-07					2.E-01
	EXPOSURE MEDIUM TOTAL										7.E-07					2.E-01
	AIR	PLUME - TRENCH AIR	AMBIENT VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			2.9E-02	ug/m3	5.8E-05	(ug/m3)-1	2.E-06	2.0E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			--		1.6E-05	(ug/m3)-1				4.0E+00	ug/m3	
				1,1-DICHLOROETHANE			4.1E-02	ug/m3	1.6E-06	(ug/m3)-1	7.E-08	2.9E+00	ug/m3	5.0E+03	ug/m3	6.E-04
				1,2,3-TRICHLOROBENZENE			NC		NC					NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.1E+02	ug/m3	2.0E+01	ug/m3	1.E+01
				1,2,4-TRIMETHYLBENZENE			NC		NC					7.0E+01	ug/m3	
				1,2-CIS-DICHLOROETHYLENE			NC		NC			3.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			8.0E+02	ug/m3	2.0E+03	ug/m3	4.E-01
				1,2-DICHLOROETHANE			6.5E-01	ug/m3	2.6E-05	(ug/m3)-1	2.E-05	4.6E+01	ug/m3	7.0E+01	ug/m3	7.E-01
				1,2-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROPROPANE			NC		NC					3.3E+01	ug/m3	
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			3.5E+01	ug/m3	8.0E+02	ug/m3	4.E-02
				1,3,5-TRIMETHYLBENZENE			NC		NC					1.0E+01	ug/m3	
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.2E+00	ug/m3	1.1E-05	(ug/m3)-1	5.E-05	3.0E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1-CHLOROBUTANE			NC		NC					NA		
				2-CHLOROTOLUENE			NC		NC					8.0E+02	ug/m3	
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			1.6E+02	ug/m3	7.8E-06	(ug/m3)-1	1.E-03	1.1E+04	ug/m3	8.0E+01	ug/m3	1.E+02
				CHLOROBENZENE			NC		NC			2.2E+04	ug/m3	5.0E+02	ug/m3	4.E+01
				CHLOROFORM			1.0E-01	ug/m3	2.3E-05	(ug/m3)-1	2.E-06	7.0E+00	ug/m3	2.4E+02	ug/m3	3.E-02
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			1.9E+03	ug/m3	9.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					4.0E+02	ug/m3	
				METHYLENE CHLORIDE			1.7E-01	ug/m3	1.0E-08	(ug/m3)-1	2.E-09	1.2E+01	ug/m3	1.0E+03	ug/m3	1.E-02

TABLE G-25
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				METHYL-T-BUTYL ETHER			1.1E-02	ug/m3	2.6E-07	(ug/m3)-1	3.E-09	8.0E-01	ug/m3	2.5E+03	ug/m3	3.E-04
				NAPHTHALENE			NC		NC			1.3E+01	ug/m3	3.0E+00	ug/m3	4.E+00
				O-XYLENE			NC		NC					4.0E+02	ug/m3	
				P-CHLOROTOLUENE			NC		NC					NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			4.7E-01	ug/m3	2.6E-07	(ug/m3)-1	1.E-07	3.3E+01	ug/m3	4.0E+01	ug/m3	8.E-01
				TOLUENE			NC		NC			2.5E+04	ug/m3	5.0E+03	ug/m3	5.E+00
				TRICHLOROETHYLENE			8.3E-01	ug/m3	4.1E-06	(ug/m3)-1	3.E-06	5.8E+01	ug/m3	5.4E+02	ug/m3	1.E-01
				VINYL CHLORIDE			7.8E+00	ug/m3	4.4E-06	(ug/m3)-1	3.E-05	5.5E+02	ug/m3	7.7E+01	ug/m3	7.E+00
				XYLENES,TOTAL			NC		NC			6.5E+03	ug/m3	4.0E+02	ug/m3	2.E+01
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				7.2E+02	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC					NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+01	ug/m3	
				Biphenyl			NC		NC					NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY (5)			NC		NC					NA		
				BARIUM			NC		NC					5.0E+00	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					5.0E+00	ug/m3	
				COBALT			--		9.0E-03	(ug/m3)-1				2.0E-02	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC					3.0E-02	ug/m3	
				NICKEL			NC		NC					2.0E-01	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					2.E+02
GROUNDWATER TOTAL											**1.E-03**					**2.E+02**

TABLE G-25
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	3.3E-07	mg/kg/day	2.0E-01	(mg/kg/day)-1	7.E-08	2.3E-05	mg/kg/day	5.0E-01	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			2.1E-04	mg/kg/day	8.0E-03	mg/kg/day	3.E-02
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			4.7E-04	mg/kg/day	9.0E-02	mg/kg/day	5.E-03
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			2.8E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			1.5E-03	mg/kg/day	6.0E-01	mg/kg/day	3.E-03
				1,2-DICHLOROETHANE	2.136	mg/kg	9.9E-08	mg/kg/day	9.1E-02	(mg/kg/day)-1	9.E-09	6.9E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				1,2-DICHLOROPROPANE	0.194	mg/kg	8.9E-09	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-10	6.3E-07	mg/kg/day	9.0E-02	mg/kg/day	7.E-06
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			5.0E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				1,4-DICHLOROBENZENE	14.18	mg/kg	6.5E-07	mg/kg/day	5.4E-03	(mg/kg/day)-1	4.E-09	4.6E-05	mg/kg/day	7.0E-02	mg/kg/day	7.E-04
				BENZENE	5.709	mg/kg	2.6E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-08	1.8E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				CHLOROBENZENE	14.87	mg/kg	NC		NC			4.8E-05	mg/kg/day	7.0E-02	mg/kg/day	7.E-04
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			6.8E-04	mg/kg/day	NA		
				ETHYLBENZENE	11.04	mg/kg	NC		NC			3.6E-05	mg/kg/day	5.0E-02	mg/kg/day	7.E-04
				METHYLENE CHLORIDE	22.62	mg/kg	1.0E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-09	7.3E-05	mg/kg/day	6.0E-02	mg/kg/day	1.E-03
				O-XYLENE	20.21	mg/kg	NC		NC			6.5E-05	mg/kg/day	4.0E-01	mg/kg/day	2.E-04
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			5.1E-07	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	3.3E-08	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-11	2.3E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				TOLUENE	197	mg/kg	NC		NC			6.4E-04	mg/kg/day	8.0E-01	mg/kg/day	8.E-04
				TRICHLOROETHYLENE	69.28	mg/kg	3.2E-06	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-07	2.2E-04	mg/kg/day	3.0E-04	mg/kg/day	7.E-01
				XYLENES,TOTAL	52	mg/kg	NC		NC			1.7E-04	mg/kg/day	4.0E-01	mg/kg/day	4.E-04
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			6.8E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				BENZO(A)ANTHRACENE	0.0366	mg/kg	1.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.2E-07	mg/kg/day	2.0E-01	mg/kg/day	6.E-07
				BENZO(A)PYRENE	0.0393	mg/kg	1.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	1.3E-07	mg/kg/day	2.0E-01	mg/kg/day	6.E-07
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	2.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.9E-07	mg/kg/day	2.0E-01	mg/kg/day	9.E-07
				Biphenyl	192	mg/kg	NC		NC			6.2E-04	mg/kg/day	1.0E-01	mg/kg/day	6.E-03
				NAPHTHALENE	0.646	mg/kg	NC		NC			2.1E-06	mg/kg/day	6.0E-01	mg/kg/day	3.E-06
				ALUMINUM	6380	mg/kg	NC		NC			2.1E-02	mg/kg/day	1.0E+00	mg/kg/day	2.E-02
				ANTIMONY	0.859	mg/kg	NC		NC			2.8E-06	mg/kg/day	4.0E-04	mg/kg/day	7.E-03
				ARSENIC	11.73	mg/kg	3.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	2.3E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				CHROMIUM	46.11	mg/kg	NC		NC			1.5E-04	mg/kg/day	1.0E+00	mg/kg/day	1.E-04
				COBALT	1.002	mg/kg	NC		NC			3.2E-06	mg/kg/day	3.0E-03	mg/kg/day	1.E-03
				COPPER	107.1	mg/kg	NC		NC			3.5E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				MERCURY	0.296	mg/kg	NC		NC			9.6E-07	mg/kg/day	2.0E-03	mg/kg/day	5.E-04
				THALLIUM	0.662	mg/kg	NC		NC			2.1E-06	mg/kg/day	8.0E-04	mg/kg/day	3.E-03
				VANADIUM	64.72	mg/kg	NC		NC			2.1E-04	mg/kg/day	7.0E-04	mg/kg/day	3.E-01
		EXPOSURE POINT TOTAL									8.E-07					1.E+00
	EXPOSURE MEDIUM TOTAL										8.E-07					1.E+00
	AIR	DUST AT SITE	DUST INHALATION	1,1,2,2-TETRACHLOROETHANE	7.115	mg/kg	1.7E-07	ug/m3	5.8E-05	(ug/m3)-1	1.E-11	1.2E-05	ug/m3	NA		
				1,2,3-TRICHLOROBENZENE	65.69	mg/kg	NC		NC			1.1E-04	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE	145.8	mg/kg	NC		NC			2.4E-04	ug/m3	2.0E+01	ug/m3	1.E-05
				1,2-CIS-DICHLOROETHYLENE	8.659	mg/kg	NC		NC			1.5E-05	ug/m3	NA		
				1,2-DICHLOROBENZENE	465.1	mg/kg	NC		NC			7.8E-04	ug/m3	2.0E+03	ug/m3	4.E-07
				1,2-DICHLOROETHANE	2.136	mg/kg	5.1E-08	ug/m3	2.6E-05	(ug/m3)-1	1.E-12	3.6E-06	ug/m3	7.0E+01	ug/m3	5.E-08
				1,2-DICHLOROPROPANE	0.194	mg/kg	NC		NC			3.3E-07	ug/m3	3.3E+01	ug/m3	1.E-08
				1,3-DICHLOROBENZENE	1.536	mg/kg	NC		NC			2.6E-06	ug/m3	NA		
				1,4-DICHLOROBENZENE	14.18	mg/kg	3.4E-07	ug/m3	1.1E-05	(ug/m3)-1	4.E-12	2.4E-05	ug/m3	2.0E+02	ug/m3	1.E-07
				BENZENE	5.709	mg/kg	1.4E-07	ug/m3	7.8E-06	(ug/m3)-1	1.E-12	9.6E-06	ug/m3	8.0E+01	ug/m3	1.E-07
				CHLOROBENZENE	14.87	mg/kg	NC		NC			2.5E-05	ug/m3	5.0E+02	ug/m3	5.E-08
				CYCLOHEXANE, METHYL-	210	mg/kg	NC		NC			3.5E-04	ug/m3	3.0E+03	ug/m3	1.E-07
				ETHYLBENZENE	11.04	mg/kg	NC		NC			1.9E-05	ug/m3	9.0E+03	ug/m3	2.E-09
				METHYLENE CHLORIDE	22.62	mg/kg	5.4E-07	ug/m3	1.0E-08	(ug/m3)-1	5.E-15	3.8E-05	ug/m3	1.0E+03	ug/m3	4.E-08
				O-XYLENE	20.21	mg/kg	NC		NC			3.4E-05	ug/m3	4.0E+02	ug/m3	8.E-08
				P-ISOPROPYLTOLUENE	0.157	mg/kg	NC		NC			2.6E-07	ug/m3	NA		
				TETRACHLOROETHYLENE	0.712	mg/kg	1.7E-08	ug/m3	2.6E-07	(ug/m3)-1	4.E-15	1.2E-06	ug/m3	4.0E+01	ug/m3	3.E-08
				TOLUENE	197	mg/kg	NC		NC			3.3E-04	ug/m3	5.0E+03	ug/m3	7.E-08
				TRICHLOROETHYLENE	69.28	mg/kg	1.7E-06	ug/m3	4.1E-06	(ug/m3)-1	7.E-12	1.2E-04	ug/m3	5.4E+02	ug/m3	2.E-07
				XYLENES,TOTAL	52	mg/kg	NC		NC			8.7E-05	ug/m3	4.0E+02	ug/m3	2.E-07
				1,2,4,5-TETRACHLOROBENZENE	2.1	mg/kg	NC		NC			3.5E-06	ug/m3	NA		
				BENZO(A)ANTHRACENE	0.0366	mg/kg	8.8E-10	ug/m3	1.1E-04	(ug/m3)-1	1.E-13	6.1E-08	ug/m3	NA		
				BENZO(A)PYRENE	0.0393	mg/kg	9.4E-10	ug/m3	1.1E-03	(ug/m3)-1	1.E-12	6.6E-08	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.0573	mg/kg	1.4E-09	ug/m3	1.1E-04	(ug/m3)-1	2.E-13	9.6E-08	ug/m3	NA		
				Biphenyl	192	mg/kg	NC		NC			3.2E-04	ug/m3	NA		
				NAPHTHALENE	0.646	mg/kg	NC		NC			1.1E-06	ug/m3	3.0E+00	ug/m3	4.E-07
				ALUMINUM	6380	mg/kg	NC		NC			1.1E-02	ug/m3	5.0E+00	ug/m3	2.E-03
				ANTIMONY	0.859	mg/kg	NC		NC			1.4E-06	ug/m3	NA		
				ARSENIC	11.73	mg/kg	2.8E-07	ug/m3	4.3E-03	(ug/m3)-1	1.E-09	2.0E-05	ug/m3	1.5E-02	ug/m3	1.E-03
				CHROMIUM	46.11	mg/kg	NC		NC			7.7E-05	ug/m3	5.0E+00	ug/m3	2.E-05
				COBALT	1.002	mg/kg	2.4E-08	ug/m3	9.0E-03	(ug/m3)-1	2.E-10	1.7E-06	ug/m3	2.0E-02	ug/m3	8.E-05
				COPPER	107.1	mg/kg	NC		NC			1.8E-04	ug/m3	NA		
				MERCURY	0.296	mg/kg	NC		NC			5.0E-07	ug/m3	3.0E-02	ug/m3	2.E-05
				THALLIUM	0.662	mg/kg	NC		NC			1.1E-06	ug/m3	NA		
				VANADIUM	64.72	mg/kg	NC		NC			1.1E-04	ug/m3	1.0E-01	ug/m3	1.E-03
			EXPOSURE ROUTE TOTAL								1.E-09					5.E-03
		EXPOSURE POINT TOTAL									1.E-09					5.E-03
TOTAL RECEPTOR RISK ACROSS ALL MEDIA											**1.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**2.E+02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-26
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	ETHYLBENZENE	2.609	mg/kg	NC		NC			1.2E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				BENZO(A)ANTHRACENE	0.155	mg/kg	1.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.2E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.206	mg/kg	1.9E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	9.5E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	5.4E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	2.7E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Biphenyl	0.845	mg/kg	NC		NC			3.9E-07	mg/kg/day	5.0E-01	mg/kg/day	8.E-07
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	4.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.4E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	1.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	7.4E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				ALUMINUM	11280	mg/kg	NC		NC			5.2E-03	mg/kg/day	1.0E+00	mg/kg/day	5.E-03
				ARSENIC	6.041	mg/kg	1.4E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	1.7E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.5E+00	mg/kg/day	9.E-06
				COBALT	3.247	mg/kg	NC		NC			1.5E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				COPPER	342.1	mg/kg	NC		NC			1.6E-04	mg/kg/day	4.0E-02	mg/kg/day	4.E-03
				MANGANESE	88.95	mg/kg	NC		NC			4.1E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				THALLIUM	0.981	mg/kg	NC		NC			4.5E-07	mg/kg/day	1.0E-05	mg/kg/day	5.E-02
				VANADIUM	47.69	mg/kg	NC		NC			2.2E-05	mg/kg/day	5.0E-03	mg/kg/day	4.E-03
			EXPOSURE ROUTE TOTAL								4.E-07					7.E-02
			DERMAL	ETHYLBENZENE	2.609	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.155	mg/kg	8.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.3E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				BENZO(A)PYRENE	0.206	mg/kg	1.1E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-08	5.7E-08	mg/kg/day	6.0E-02	mg/kg/day	9.E-07
				BENZO(B)FLUORANTHENE	0.59	mg/kg	3.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Biphenyl	0.845	mg/kg	NC		NC			1.8E-07	mg/kg/day	5.0E-01	mg/kg/day	4.E-07
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	2.8E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.4E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	8.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	4.4E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				ALUMINUM	11280	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.041	mg/kg	3.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-08	3.9E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.247	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	342.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	88.95	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	0.981	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	47.69	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								2.E-07					1.E-03
		EXPOSURE POINT TOTAL									6.E-07					7.E-02
	EXPOSURE MEDIUM TOTAL										6.E-07					7.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**6.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**7.E-02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/2015
Checked by: BJR 4/10/2015

TABLE G-27
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	ETHYLBENZENE	2.609	mg/kg	NC		NC			4.8E-07	mg/kg/day	1.0E-01	mg/kg/day	5.E-06
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			4.3E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				BENZO(A)ANTHRACENE	0.155	mg/kg	4.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	2.8E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				BENZO(A)PYRENE	0.206	mg/kg	6.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	3.8E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				Biphenyl	0.845	mg/kg	NC		NC			1.5E-07	mg/kg/day	5.0E-01	mg/kg/day	3.E-07
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	1.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	9.4E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	5.0E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	2.9E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				ALUMINUM	11280	mg/kg	NC		NC			2.1E-03	mg/kg/day	1.0E+00	mg/kg/day	2.E-03
				ARSENIC	6.041	mg/kg	1.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	6.6E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			5.2E-06	mg/kg/day	1.5E+00	mg/kg/day	3.E-06
				COBALT	3.247	mg/kg	NC		NC			5.9E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				COPPER	342.1	mg/kg	NC		NC			6.3E-05	mg/kg/day	4.0E-02	mg/kg/day	2.E-03
				MANGANESE	88.95	mg/kg	NC		NC			1.6E-05	mg/kg/day	1.4E-01	mg/kg/day	1.E-04
				THALLIUM	0.981	mg/kg	NC		NC			1.8E-07	mg/kg/day	1.0E-05	mg/kg/day	2.E-02
				VANADIUM	47.69	mg/kg	NC		NC			8.7E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
			EXPOSURE ROUTE TOTAL								3.E-07					3.E-02
			DERMAL	ETHYLBENZENE	2.609	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.155	mg/kg	2.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(A)PYRENE	0.206	mg/kg	3.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	2.0E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(B)FLUORANTHENE	0.59	mg/kg	9.7E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	5.7E-08	mg/kg/day	6.0E-02	mg/kg/day	9.E-07
				Biphenyl	0.845	mg/kg	NC		NC			6.3E-08	mg/kg/day	5.0E-01	mg/kg/day	1.E-07
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	8.5E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-09	4.9E-09	mg/kg/day	6.0E-02	mg/kg/day	8.E-08
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	2.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				ALUMINUM	11280	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.041	mg/kg	2.3E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-08	1.3E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				CHROMIUM	28.37	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.247	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	342.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	88.95	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	0.981	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	47.69	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								8.E-08					4.E-04
		EXPOSURE POINT TOTAL									3.E-07					3.E-02
	EXPOSURE MEDIUM TOTAL										3.E-07					3.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**3.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E-02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-28
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.6E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-28
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	ETHYLBENZENE	2.609	mg/kg	NC		NC			2.3E-06	mg/kg/day	1.0E-01	mg/kg/day	2.E-05
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				BENZO(A)ANTHRACENE	0.155	mg/kg	4.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.206	mg/kg	6.5E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	1.8E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.9E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	5.2E-07	mg/kg/day	6.0E-02	mg/kg/day	9.E-06
				Biphenyl	0.845	mg/kg	NC		NC			7.4E-07	mg/kg/day	5.0E-01	mg/kg/day	1.E-06
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	1.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	4.5E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	5.0E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-08	1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				ALUMINUM	11280	mg/kg	NC		NC			9.9E-03	mg/kg/day	1.0E+00	mg/kg/day	1.E-02
				ARSENIC	6.041	mg/kg	1.1E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.2E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	28.37	mg/kg	NC		NC			2.5E-05	mg/kg/day	1.5E+00	mg/kg/day	2.E-05
				COBALT	3.247	mg/kg	NC		NC			2.9E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				COPPER	342.1	mg/kg	NC		NC			3.0E-04	mg/kg/day	4.0E-02	mg/kg/day	8.E-03
				MANGANESE	88.95	mg/kg	NC		NC			7.8E-05	mg/kg/day	1.4E-01	mg/kg/day	6.E-04
				THALLIUM	0.981	mg/kg	NC		NC			8.6E-07	mg/kg/day	1.0E-05	mg/kg/day	9.E-02
				VANADIUM	47.69	mg/kg	NC		NC			4.2E-05	mg/kg/day	5.0E-03	mg/kg/day	8.E-03
			EXPOSURE ROUTE TOTAL								3.E-06					1.E-01
			DERMAL	ETHYLBENZENE	2.609	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.155	mg/kg	4.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.2E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.206	mg/kg	5.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.6E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	4.5E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Biphenyl	0.845	mg/kg	NC		NC			4.9E-07	mg/kg/day	5.0E-01	mg/kg/day	1.E-06
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	1.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	3.9E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	4.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.2E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				ALUMINUM	11280	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.041	mg/kg	3.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.247	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	342.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	88.95	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	0.981	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	47.69	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-06					4.E-03
		EXPOSURE POINT TOTAL									4.E-06					1.E-01
	EXPOSURE MEDIUM TOTAL										4.E-06					1.E-01
	AIR	DUST AT SITE	DUST INHALATION	ETHYLBENZENE	2.609	mg/kg	NC		NC			3.9E-07	ug/m3	1.0E+03	ug/m3	4.E-10
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			3.5E-06	ug/m3	1.0E+02	ug/m3	4.E-08
				BENZO(A)ANTHRACENE	0.155	mg/kg	8.4E-09	ug/m3	1.1E-04	(ug/m3)-1	9.E-13	2.3E-08	ug/m3	NA		
				BENZO(A)PYRENE	0.206	mg/kg	1.1E-08	ug/m3	1.1E-03	(ug/m3)-1	1.E-11	3.1E-08	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.59	mg/kg	3.2E-08	ug/m3	1.1E-04	(ug/m3)-1	4.E-12	8.9E-08	ug/m3	NA		
				Biphenyl	0.845	mg/kg	NC		NC			1.3E-07	ug/m3	NA		
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	2.8E-09	ug/m3	1.2E-03	(ug/m3)-1	3.E-12	7.8E-09	ug/m3	NA		
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	8.6E-09	ug/m3	1.1E-04	(ug/m3)-1	9.E-13	2.4E-08	ug/m3	NA		
				ALUMINUM	11280	mg/kg	NC		NC			1.7E-03	ug/m3	5.0E+00	ug/m3	3.E-04
				ARSENIC	6.041	mg/kg	3.3E-07	ug/m3	4.3E-03	(ug/m3)-1	1.E-09	9.1E-07	ug/m3	1.5E-02	ug/m3	6.E-05
				CHROMIUM	28.37	mg/kg	NC		NC			4.3E-06	ug/m3	NA		
				COBALT	3.247	mg/kg	1.8E-07	ug/m3	9.0E-03	(ug/m3)-1	2.E-09	4.9E-07	ug/m3	6.0E-03	ug/m3	8.E-05
				COPPER	342.1	mg/kg	NC		NC			5.2E-05	ug/m3	NA		
				MANGANESE	88.95	mg/kg	NC		NC			1.3E-05	ug/m3	5.0E-02	ug/m3	3.E-04
				THALLIUM	0.981	mg/kg	NC		NC			1.5E-07	ug/m3	NA		
				VANADIUM	47.69	mg/kg	NC		NC			7.2E-06	ug/m3	1.0E-01	ug/m3	7.E-05
			EXPOSURE ROUTE TOTAL								3.E-09					8.E-04
		EXPOSURE POINT TOTAL									3.E-09					8.E-04
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-29
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-29
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	ETHYLBENZENE	2.609	mg/kg	NC		NC			1.3E-06	mg/kg/day	1.0E-01	mg/kg/day	1.E-05
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	6.E-05
				BENZO(A)ANTHRACENE	0.155	mg/kg	2.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	7.6E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.206	mg/kg	3.6E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-07	1.0E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-08	2.9E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				Biphenyl	0.845	mg/kg	NC		NC			4.1E-07	mg/kg/day	5.0E-01	mg/kg/day	8.E-07
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	9.0E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	2.5E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	2.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	7.8E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				ALUMINUM	11280	mg/kg	NC		NC			5.5E-03	mg/kg/day	1.0E+00	mg/kg/day	6.E-03
				ARSENIC	6.041	mg/kg	6.3E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-07	1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			1.4E-05	mg/kg/day	1.5E+00	mg/kg/day	9.E-06
				COBALT	3.247	mg/kg	NC		NC			1.6E-06	mg/kg/day	3.0E-04	mg/kg/day	5.E-03
				COPPER	342.1	mg/kg	NC		NC			1.7E-04	mg/kg/day	4.0E-02	mg/kg/day	4.E-03
				MANGANESE	88.95	mg/kg	NC		NC			4.4E-05	mg/kg/day	1.4E-01	mg/kg/day	3.E-04
				THALLIUM	0.981	mg/kg	NC		NC			4.8E-07	mg/kg/day	1.0E-05	mg/kg/day	5.E-02
				VANADIUM	47.69	mg/kg	NC		NC			2.3E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
			EXPOSURE ROUTE TOTAL								1.E-06					7.E-02
			DERMAL	ETHYLBENZENE	2.609	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.155	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.6E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				BENZO(A)PYRENE	0.206	mg/kg	2.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	6.1E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	6.2E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	1.7E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Biphenyl	0.845	mg/kg	NC		NC			1.9E-07	mg/kg/day	5.0E-01	mg/kg/day	4.E-07
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	5.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	1.5E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	1.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.7E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				ALUMINUM	11280	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.041	mg/kg	1.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.247	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	342.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	88.95	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	0.981	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	47.69	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-07					1.E-03
		EXPOSURE POINT TOTAL									2.E-06					8.E-02
	EXPOSURE MEDIUM TOTAL										2.E-06					8.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-30
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.4E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	3.E-06	1.7E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	3.3E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-07	3.8E-05	mg/kg/day	4.0E-03	mg/kg/day	9.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	1.2E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	7.E-08	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			2.0E-02	mg/kg/day	8.0E-04	mg/kg/day	3.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			3.3E-02	mg/kg/day	1.0E-02	mg/kg/day	3.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			1.9E-03	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			1.4E-02	mg/kg/day	2.0E-03	mg/kg/day	7.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			3.2E-02	mg/kg/day	9.0E-02	mg/kg/day	4.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.3E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-05	1.5E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.6E-03	mg/kg/day	9.0E-03	mg/kg/day	5.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-06	1.3E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-02
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	8.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			6.1E-04	mg/kg/day	1.0E-02	mg/kg/day	6.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			2.1E-03	mg/kg/day	3.0E-03	mg/kg/day	7.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.4E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-06	1.7E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			1.9E-02	mg/kg/day	4.0E-02	mg/kg/day	5.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			6.8E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			8.9E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	2.0E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-04	2.3E-02	mg/kg/day	4.0E-03	mg/kg/day	6.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			9.6E-02	mg/kg/day	2.0E-02	mg/kg/day	5.E+00
				CHLOROFORM	0.0005829	mg/l	3.2E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	1.E-07	3.7E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	1.7E-04	mg/kg/day	NA			2.0E-03	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			1.3E-03	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			2.7E-02	mg/kg/day	1.0E-01	mg/kg/day	3.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.1E-03	mg/kg/day	2.0E-01	mg/kg/day	6.E-03
				METHYLENE CHLORIDE	0.341	mg/l	9.9E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-05	2.2E-02	mg/kg/day	6.0E-03	mg/kg/day	4.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	7.5E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-07	8.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			6.5E-04	mg/kg/day	2.0E-02	mg/kg/day	3.E-02
				O-XYLENE	0.32	mg/l	NC		NC			2.0E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.1E-02	mg/kg/day	2.0E-02	mg/kg/day	6.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			1.3E-04	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			7.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			7.4E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.1E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-09	3.6E-05	mg/kg/day	6.0E-03	mg/kg/day	6.E-03
				TOLUENE	3.656	mg/l	NC		NC			2.3E-01	mg/kg/day	8.0E-02	mg/kg/day	3.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	1.9E-04	mg/kg/day	9.3E-03	(mg/kg/day)-1	2.E-06	4.1E-04	mg/kg/day	NA		
				TRICHLOROETHYLENE	0.00641	mg/l	3.5E-05	mg/kg/day	3.7E-02	(mg/kg/day)-1	1.E-06	4.1E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				VINYL CHLORIDE	0.0466	mg/l	2.6E-04	mg/kg/day	1.4E+00	(mg/kg/day)-1	4.E-04	3.0E-03	mg/kg/day	3.0E-03	mg/kg/day	1.E+00
				XYLENES,TOTAL	0.354	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				1,4-DIOXANE	0.00991	mg/l	5.4E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	5.E-06	6.3E-04	mg/kg/day	3.0E-02	mg/kg/day	2.E-02
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			5.8E-05	mg/kg/day	4.0E-03	mg/kg/day	1.E-02
				3-NITROANILINE	0.00346	mg/l	NC		NC			2.2E-04	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	2.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-05	3.0E-02	mg/kg/day	7.0E-03	mg/kg/day	4.E+00
				Biphenyl	0.00537	mg/l	NC		NC			3.4E-04	mg/kg/day	5.0E-01	mg/kg/day	7.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	2.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-07	3.3E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	4.3E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	3.0E-05	mg/kg/day	2.E-02
				HEPTACHLOR EPOXIDE	0.00001	mg/l	5.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				ALUMINUM	55.28	mg/l	NC		NC			3.5E+00	mg/kg/day	1.0E+00	mg/kg/day	4.E+00
				ARSENIC	0.0251	mg/l	1.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-04	1.6E-03	mg/kg/day	3.0E-04	mg/kg/day	5.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			5.3E-04	mg/kg/day	4.0E-04	mg/kg/day	1.E+00
				BARIUM	0.362	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				BERYLLIUM	0.00373	mg/l	NC		NC			2.4E-04	mg/kg/day	2.0E-03	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			5.2E-03	mg/kg/day	1.0E-03	mg/kg/day	5.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.0E-02	mg/kg/day	1.5E+00	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			4.8E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COPPER	52.99	mg/l	NC		NC			3.4E+00	mg/kg/day	4.0E-02	mg/kg/day	8.E+01
				IRON	342.6	mg/l	NC		NC			2.2E+01	mg/kg/day	7.0E-01	mg/kg/day	3.E+01
				LEAD	0.135	mg/l	7.4E-04	mg/kg/day	ND			8.6E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			4.9E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				MERCURY	0.00086978	mg/l	NC		NC			5.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				NICKEL	0.24	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	8.E-01
				SELENIUM	0.00744	mg/l	NC		NC			4.8E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
				SILVER	0.00262	mg/l	NC		NC			1.7E-04	mg/kg/day	5.0E-03	mg/kg/day	3.E-02
				THALLIUM	0.00788	mg/l	NC		NC			5.0E-04	mg/kg/day	1.0E-05	mg/kg/day	5.E+01
				VANADIUM	0.397	mg/l	NC		NC			2.5E-02	mg/kg/day	5.0E-03	mg/kg/day	5.E+00
				ZINC	223.1	mg/l	NC		NC			1.4E+01	mg/kg/day	3.0E-01	mg/kg/day	5.E+01

TABLE G-30
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								7.E-04					3.E+02
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.8E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-07	2.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.9E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-08	3.4E-06	mg/kg/day	4.0E-03	mg/kg/day	9.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	9.4E-07	mg/kg/day	5.7E-03	(mg/kg/day)-1	5.E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			4.1E-02	mg/kg/day	1.0E-02	mg/kg/day	4.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			2.0E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	6.2E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-07	7.2E-05	mg/kg/day	6.0E-03	mg/kg/day	1.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.0E-04	mg/kg/day	9.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-07	1.3E-04	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			1.8E-03	mg/kg/day	3.0E-03	mg/kg/day	6.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.3E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	1.1E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	3.1E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			3.3E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	2.8E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	9.E-09	3.3E-06	mg/kg/day	1.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	--		NA			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.6E-02	mg/kg/day	1.0E-01	mg/kg/day	2.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	3.8E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	8.E-07	8.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			4.1E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	1.8E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	6.0E-03	mg/kg/day	4.E-03
				TOLUENE	3.656	mg/l	NC		NC			8.0E-02	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		NA		
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		5.0E-04	mg/kg/day	
				VINYL CHLORIDE	0.0466	mg/l	1.4E-05	mg/kg/day	1.4E+00	(mg/kg/day)-1	2.E-05	1.6E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	2.0E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-08	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.5E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	5.4E-05	mg/kg/day	NA			6.3E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.2E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-07	4.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	3.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	6.E-08	4.5E-08	mg/kg/day	3.0E-05	mg/kg/day	1.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	9.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.1E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-05	mg/kg/day	6.E-02
				BARIUM	0.362	mg/l	NC		NC			1.5E-04	mg/kg/day	1.4E-02	mg/kg/day	1.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.6E-06	mg/kg/day	1.4E-05	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			3.4E-05	mg/kg/day	2.5E-05	mg/kg/day	1.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			2.2E-02	mg/kg/day	4.0E-02	mg/kg/day	6.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			3.2E-04	mg/kg/day	5.6E-03	mg/kg/day	6.E-02
				MERCURY	0.00086978	mg/l	NC		NC			3.7E-07	mg/kg/day	2.1E-05	mg/kg/day	2.E-02
				NICKEL	0.24	mg/l	NC		NC			2.0E-05	mg/kg/day	8.0E-04	mg/kg/day	3.E-02
				SELENIUM	0.00744	mg/l	NC		NC			3.1E-06	mg/kg/day	5.0E-03	mg/kg/day	6.E-04
				SILVER	0.00262	mg/l	NC		NC			6.6E-07	mg/kg/day	2.0E-04	mg/kg/day	3.E-03
				THALLIUM	0.00788	mg/l	NC		NC			3.3E-06	mg/kg/day	1.0E-05	mg/kg/day	3.E-01
				VANADIUM	0.397	mg/l	NC		NC			1.7E-04	mg/kg/day	1.3E-04	mg/kg/day	1.E+00
				ZINC	223.1	mg/l	NC		NC			5.6E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								5.E-05					1.E+01
		EXPOSURE POINT TOTAL									8.E-04					3.E+02
	EXPOSURE MEDIUM TOTAL										8.E-04					3.E+02

TABLE G-30
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.6E-01	ug/m3	5.8E-05	(ug/m3)-1	3.E-05	5.4E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.2E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	1.3E+00	ug/m3	2.0E-01	ug/m3	7.E+00
				1,1-DICHLOROETHANE			4.5E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	5.3E+00	ug/m3	5.0E+02	ug/m3	1.E-02
				1,2,3-TRICHLOROBENZENE			NC		NC			6.4E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.0E+03	ug/m3	2.0E+00	ug/m3	5.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			6.0E+01	ug/m3	7.0E+00	ug/m3	9.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			5.6E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			1.1E+03	ug/m3	2.0E+02	ug/m3	5.E+00
				1,2-DICHLOROETHANE			4.8E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	5.6E+01	ug/m3	7.0E+00	ug/m3	8.E+00
				1,2-DICHLOROETHYLENE			NC		NC			1.8E+02	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			4.7E+01	ug/m3	4.0E+00	ug/m3	1.E+01
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			6.6E+01	ug/m3	6.0E+01	ug/m3	1.E+00
				1,3,5-TRIMETHYLBENZENE			NC		NC			1.9E+01	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.8E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	5.6E+02	ug/m3	8.0E+02	ug/m3	7.E-01
				1-CHLOROBUTANE			5.6E+01	ug/m3	ND			6.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			2.2E+02	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			7.4E+01	ug/m3	7.8E-06	(ug/m3)-1	6.E-04	8.6E+02	ug/m3	3.0E+01	ug/m3	3.E+01
				CHLOROBENZENE			NC		NC			3.4E+03	ug/m3	5.0E+01	ug/m3	7.E+01
				CHLOROFORM			1.2E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	1.4E+00	ug/m3	9.8E+01	ug/m3	1.E-02
				CYCLOHEXANE, METHYL-			--		NA					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			8.7E+02	ug/m3	1.0E+03	ug/m3	9.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			4.2E+02	ug/m3	1.0E-08	(ug/m3)-1	4.E-06	9.2E+02	ug/m3	6.0E+02	ug/m3	2.E+00
				METHYL-T-BUTYL ETHER			2.4E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	2.8E+01	ug/m3	3.0E+03	ug/m3	9.E-03
				NAPHTHALENE			NC		NC			2.0E+01	ug/m3	3.0E+00	ug/m3	7.E+00
				O-XYLENE			NC		NC			6.7E+02	ug/m3	1.0E+02	ug/m3	7.E+00
				P-CHLOROTOLUENE			NC		NC			3.7E+02	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.1E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	1.3E+00	ug/m3	4.0E+01	ug/m3	3.E-02
				TOLUENE			NC		NC			8.1E+03	ug/m3	5.0E+03	ug/m3	2.E+00
				TRICHLOROETHYLENE			6.9E+00	ug/m3	1.0E-06	(ug/m3)-1	7.E-06	1.5E+01	ug/m3	NA		
				TRICHLOROETHYLENE			1.3E+00	ug/m3	3.1E-06	(ug/m3)-1	4.E-06	1.5E+01	ug/m3	2.0E+00	ug/m3	8.E+00
				VINYL CHLORIDE			1.1E+01	ug/m3	8.8E-06	(ug/m3)-1	9.E-05	1.2E+02	ug/m3	1.0E+02	ug/m3	1.E+00
				XYLENES,TOTAL			NC		NC			8.2E+02	ug/m3	1.0E+02	ug/m3	8.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			1.7E+00	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			9.5E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			1.5E+00	ug/m3	3.0E-01	ug/m3	5.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
			EXPOSURE ROUTE TOTAL								1.E-03					7.E+02
		EXPOSURE POINT TOTAL									1.E-03					7.E+02
GROUNDWATER TOTAL											**2.E-03**					**1.E+03**

TABLE G-30
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	ETHYLBENZENE	2.609	mg/kg	NC		NC			3.3E-05	mg/kg/day	1.0E-01	mg/kg/day	3.E-04
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			3.0E-04	mg/kg/day	2.0E-01	mg/kg/day	1.E-03
				BENZO(A)ANTHRACENE	0.155	mg/kg	9.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	2.0E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				BENZO(A)PYRENE	0.206	mg/kg	1.2E-06	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-06	2.6E-06	mg/kg/day	6.0E-02	mg/kg/day	4.E-05
				BENZO(B)FLUORANTHENE	0.59	mg/kg	3.4E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-06	7.5E-06	mg/kg/day	6.0E-02	mg/kg/day	1.E-04
				Biphenyl	0.845	mg/kg	NC		NC			1.1E-05	mg/kg/day	5.0E-01	mg/kg/day	2.E-05
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	3.0E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-06	6.6E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	9.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-07	2.0E-06	mg/kg/day	6.0E-02	mg/kg/day	3.E-05
				ALUMINUM	11280	mg/kg	NC		NC			1.4E-01	mg/kg/day	1.0E+00	mg/kg/day	1.E-01
				ARSENIC	6.041	mg/kg	4.0E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-06	4.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				CHROMIUM	28.37	mg/kg	NC		NC			3.6E-04	mg/kg/day	1.5E+00	mg/kg/day	2.E-04
				COBALT	3.247	mg/kg	NC		NC			4.2E-05	mg/kg/day	1.5E+00	mg/kg/day	3.E-05
				COPPER	342.1	mg/kg	NC		NC			4.4E-03	mg/kg/day	4.0E-02	mg/kg/day	1.E-01
				MANGANESE	88.95	mg/kg	NC		NC			1.1E-03	mg/kg/day	1.4E-01	mg/kg/day	8.E-03
				THALLIUM	0.981	mg/kg	NC		NC			1.3E-05	mg/kg/day	1.0E-05	mg/kg/day	1.E+00
				VANADIUM	47.69	mg/kg	NC		NC			6.1E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
			EXPOSURE ROUTE TOTAL								2.E-05					2.E+00
			DERMAL	ETHYLBENZENE	2.609	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.155	mg/kg	3.3E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	7.2E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				BENZO(A)PYRENE	0.206	mg/kg	4.4E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-06	9.6E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-05
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.2E-06	mg/kg/day	7.3E-01	(mg/kg/day)-1	9.E-07	2.7E-06	mg/kg/day	6.0E-02	mg/kg/day	5.E-05
				Biphenyl	0.845	mg/kg	NC		NC			3.0E-06	mg/kg/day	5.0E-01	mg/kg/day	6.E-06
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	1.1E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	8.E-07	2.4E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	3.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	7.4E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				ALUMINUM	11280	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.041	mg/kg	5.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	8.E-07	6.5E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				CHROMIUM	28.37	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.247	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COPPER	342.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	88.95	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	0.981	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	47.69	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								6.E-06					2.E-02
		EXPOSURE POINT TOTAL									3.E-05					2.E+00
	EXPOSURE MEDIUM TOTAL										3.E-05					2.E+00
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**1.E+03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-31
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	2.5E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-06	7.2E-05	mg/kg/day	2.0E-02	mg/kg/day	4.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.6E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-07	1.6E-05	mg/kg/day	4.0E-03	mg/kg/day	4.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	2.0E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-07	6.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			8.6E-03	mg/kg/day	8.0E-04	mg/kg/day	1.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.4E-02	mg/kg/day	1.0E-02	mg/kg/day	1.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			8.3E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			6.1E-03	mg/kg/day	2.0E-03	mg/kg/day	3.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			1.4E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	2.2E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-05	6.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			2.0E-03	mg/kg/day	9.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-06	5.6E-04	mg/kg/day	9.0E-02	mg/kg/day	6.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			7.3E-04	mg/kg/day	2.0E-02	mg/kg/day	4.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			2.6E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.9E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	2.5E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-05	7.2E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			8.0E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			2.9E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			3.8E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	3.4E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-04	1.0E-02	mg/kg/day	4.0E-03	mg/kg/day	2.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			4.1E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	5.5E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-07	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			8.5E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			5.5E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.1E-02	mg/kg/day	1.0E-01	mg/kg/day	1.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			4.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.E-03
				METHYLENE CHLORIDE	0.341	mg/l	3.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	6.E-06	9.3E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	1.3E-04	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-07	3.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			2.8E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				O-XYLENE	0.32	mg/l	NC		NC			8.8E-03	mg/kg/day	2.0E-01	mg/kg/day	4.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			4.8E-03	mg/kg/day	2.0E-02	mg/kg/day	2.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			5.7E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			3.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			3.2E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	5.4E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	1.E-08	1.6E-05	mg/kg/day	6.0E-03	mg/kg/day	3.E-03
				TOLUENE	3.656	mg/l	NC		NC			1.0E-01	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	6.0E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-06	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				VINYL CHLORIDE	0.0466	mg/l	4.4E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	3.E-04	1.3E-03	mg/kg/day	3.0E-03	mg/kg/day	4.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			9.7E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				1,4-DIOXANE	0.00991	mg/l	9.3E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	9.E-06	2.7E-04	mg/kg/day	3.0E-02	mg/kg/day	9.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			4.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			2.5E-05	mg/kg/day	4.0E-03	mg/kg/day	6.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			9.5E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	4.4E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	3.E-05	1.3E-02	mg/kg/day	7.0E-03	mg/kg/day	2.E+00
				Biphenyl	0.00537	mg/l	NC		NC			1.5E-04	mg/kg/day	5.0E-01	mg/kg/day	3.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				ALDRIN	0.0000079	mg/l	7.4E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-06	2.2E-07	mg/kg/day	3.0E-05	mg/kg/day	7.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	9.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	2.7E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				ALUMINUM	55.28	mg/l	NC		NC			1.5E+00	mg/kg/day	1.0E+00	mg/kg/day	2.E+00
				ARSENIC	0.0251	mg/l	2.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-04	6.9E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			2.3E-04	mg/kg/day	4.0E-04	mg/kg/day	6.E-01
				BARIUM	0.362	mg/l	NC		NC			9.9E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-03	mg/kg/day	5.E-02
				CADMIUM	0.0808	mg/l	NC		NC			2.2E-03	mg/kg/day	1.0E-03	mg/kg/day	2.E+00
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-02	mg/kg/day	1.5E+00	mg/kg/day	8.E-03
				COBALT	0.0745	mg/l	NC		NC			2.0E-03	mg/kg/day	3.0E-04	mg/kg/day	7.E+00
				COPPER	52.99	mg/l	NC		NC			1.5E+00	mg/kg/day	4.0E-02	mg/kg/day	4.E+01
				IRON	342.6	mg/l	NC		NC			9.4E+00	mg/kg/day	7.0E-01	mg/kg/day	1.E+01
				LEAD	0.135	mg/l	1.3E-03	mg/kg/day	ND			3.7E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				MERCURY	0.00086978	mg/l	NC		NC			2.4E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				NICKEL	0.24	mg/l	NC		NC			6.6E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				SELENIUM	0.00744	mg/l	NC		NC			2.0E-04	mg/kg/day	5.0E-03	mg/kg/day	4.E-02
				SILVER	0.00262	mg/l	NC		NC			7.2E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				THALLIUM	0.00788	mg/l	NC		NC			2.2E-04	mg/kg/day	1.0E-05	mg/kg/day	2.E+01
				VANADIUM	0.397	mg/l	NC		NC			1.1E-02	mg/kg/day	5.0E-03	mg/kg/day	2.E+00
				ZINC	223.1	mg/l	NC		NC			6.1E+00	mg/kg/day	3.0E-01	mg/kg/day	2.E+01
			EXPOSURE ROUTE TOTAL								9.E-04					1.E+02

TABLE G-31
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	3.1E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-07	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.2E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-08	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	1.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-09	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.8E-02	mg/kg/day	1.0E-02	mg/kg/day	2.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			9.1E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-06	3.1E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			1.7E-04	mg/kg/day	9.0E-03	mg/kg/day	2.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-07	5.6E-05	mg/kg/day	9.0E-02	mg/kg/day	6.E-04
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.2E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.7E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	9.E-06	4.8E-03	mg/kg/day	7.0E-02	mg/kg/day	7.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	5.2E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-05	1.5E-03	mg/kg/day	4.0E-03	mg/kg/day	4.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	5.0E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	1.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			6.9E-03	mg/kg/day	1.0E-01	mg/kg/day	7.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-07	3.5E-04	mg/kg/day	6.0E-03	mg/kg/day	6.E-02
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.8E-04	mg/kg/day	2.0E-02	mg/kg/day	9.E-03
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.2E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-06	9.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	3.656	mg/l	NC		NC			3.5E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	1.0E-05	mg/kg/day				3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				VINYL CHLORIDE	0.0466	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	3.4E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-08	9.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			6.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	9.3E-05	mg/kg/day				2.7E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	7.4E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-06	2.2E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				ALDRIN	0.0000079	mg/l	6.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			1.2E-06	mg/kg/day	6.0E-05	mg/kg/day	2.E-02
				BARIUM	0.362	mg/l	NC		NC			5.2E-05	mg/kg/day	1.4E-02	mg/kg/day	4.E-03
				BERYLLIUM	0.00373	mg/l	NC		NC			5.3E-07	mg/kg/day	1.4E-05	mg/kg/day	4.E-02
				CADMIUM	0.0808	mg/l	NC		NC			1.2E-05	mg/kg/day	2.5E-05	mg/kg/day	5.E-01
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			7.6E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			1.1E-04	mg/kg/day	5.6E-03	mg/kg/day	2.E-02
				MERCURY	0.00086978	mg/l	NC		NC			1.2E-07	mg/kg/day	2.1E-05	mg/kg/day	6.E-03
				NICKEL	0.24	mg/l	NC		NC			6.9E-06	mg/kg/day	8.0E-04	mg/kg/day	9.E-03
				SELENIUM	0.00744	mg/l	NC		NC			1.1E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				SILVER	0.00262	mg/l	NC		NC			2.2E-07	mg/kg/day	2.0E-04	mg/kg/day	1.E-03
				THALLIUM	0.00788	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	0.397	mg/l	NC		NC			5.7E-05	mg/kg/day	1.3E-04	mg/kg/day	4.E-01
				ZINC	223.1	mg/l	NC		NC			1.9E-02	mg/kg/day	3.0E-01	mg/kg/day	6.E-02
			EXPOSURE ROUTE TOTAL								4.E-05					5.E+00
		EXPOSURE POINT TOTAL									1.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					1.E+02

TABLE G-31
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.3E-01	ug/m3	5.8E-05	(ug/m3)-1	2.E-05	1.2E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.1E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	3.1E-01	ug/m3	2.0E-01	ug/m3	2.E+00
				1,1-DICHLOROETHANE			4.2E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	1.2E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				1,2,3-TRICHLOROBENZENE			NC		NC			1.5E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.4E+02	ug/m3	2.0E+00	ug/m3	1.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			1.4E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			1.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			2.5E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1,2-DICHLOROETHANE			4.5E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	1.3E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-DICHLOROETHYLENE			NC		NC			4.1E+01	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			1.1E+01	ug/m3	4.0E+00	ug/m3	3.E+00
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			1.5E+01	ug/m3	6.0E+01	ug/m3	3.E-01
				1,3,5-TRIMETHYLBENZENE			NC		NC			4.3E+00	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.4E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	1.3E+02	ug/m3	8.0E+02	ug/m3	2.E-01
				1-CHLOROBUTANE			NC		NC			1.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			5.2E+01	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			6.9E+01	ug/m3	7.8E-06	(ug/m3)-1	5.E-04	2.0E+02	ug/m3	3.0E+01	ug/m3	7.E+00
				CHLOROBENZENE			NC		NC			7.8E+02	ug/m3	5.0E+01	ug/m3	2.E+01
				CHLOROFORM			1.1E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	3.3E-01	ug/m3	9.8E+01	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			2.0E+02	ug/m3	1.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			7.3E+01	ug/m3	1.0E-08	(ug/m3)-1	7.E-07	2.1E+02	ug/m3	6.0E+02	ug/m3	4.E-01
				METHYL-T-BUTYL ETHER			2.2E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	6.4E+00	ug/m3	3.0E+03	ug/m3	2.E-03
				NAPHTHALENE			NC		NC			4.6E+00	ug/m3	3.0E+00	ug/m3	2.E+00
				O-XYLENE			NC		NC			1.5E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				P-CHLOROTOLUENE			NC		NC			8.6E+01	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.0E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	3.0E-01	ug/m3	4.0E+01	ug/m3	7.E-03
				TOLUENE			NC		NC			1.9E+03	ug/m3	5.0E+03	ug/m3	4.E-01
				TRICHLOROETHYLENE			1.2E+00	ug/m3	4.1E-06	(ug/m3)-1	5.E-06	3.5E+00	ug/m3	2.0E+00	ug/m3	2.E+00
				VINYL CHLORIDE			9.7E+00	ug/m3	4.4E-06	(ug/m3)-1	4.E-05	2.8E+01	ug/m3	1.0E+02	ug/m3	3.E-01
				XYLENES,TOTAL			NC		NC			1.9E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			3.9E-01	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			2.2E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			3.4E-01	ug/m3	3.0E-01	ug/m3	1.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02
GROUNDWATER TOTAL											**2.E-03**					**3.E+02**

TABLE G-31
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	ETHYLBENZENE	2.609	mg/kg	NC		NC			3.6E-06	mg/kg/day	1.0E-01	mg/kg/day	4.E-05
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			3.2E-05	mg/kg/day	2.0E-01	mg/kg/day	2.E-04
				BENZO(A)ANTHRACENE	0.155	mg/kg	7.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	2.1E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				BENZO(A)PYRENE	0.206	mg/kg	9.7E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-07	2.8E-07	mg/kg/day	6.0E-02	mg/kg/day	5.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	2.8E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-07	8.1E-07	mg/kg/day	6.0E-02	mg/kg/day	1.E-05
				Biphenyl	0.845	mg/kg	NC		NC			1.2E-06	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	2.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-07	7.0E-08	mg/kg/day	6.0E-02	mg/kg/day	1.E-06
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	7.5E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	2.2E-07	mg/kg/day	6.0E-02	mg/kg/day	4.E-06
				ALUMINUM	11280	mg/kg	NC		NC			1.5E-02	mg/kg/day	1.0E+00	mg/kg/day	2.E-02
				ARSENIC	6.041	mg/kg	1.7E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	5.0E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				CHROMIUM	28.37	mg/kg	NC		NC			3.9E-05	mg/kg/day	1.5E+00	mg/kg/day	3.E-05
				COBALT	3.247	mg/kg	NC		NC			4.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				COPPER	342.1	mg/kg	NC		NC			4.7E-04	mg/kg/day	4.0E-02	mg/kg/day	1.E-02
				MANGANESE	88.95	mg/kg	NC		NC			1.2E-04	mg/kg/day	1.4E-01	mg/kg/day	9.E-04
				THALLIUM	0.981	mg/kg	NC		NC			1.3E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	47.69	mg/kg	NC		NC			6.5E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
			EXPOSURE ROUTE TOTAL								4.E-06					2.E-01
			DERMAL	ETHYLBENZENE	2.609	mg/kg	NC		NC			--		1.0E-01	mg/kg/day	
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			--		2.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.155	mg/kg	3.8E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(A)PYRENE	0.206	mg/kg	5.0E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-07	1.5E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.4E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	4.2E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Biphenyl	0.845	mg/kg	NC		NC			4.6E-07	mg/kg/day	5.0E-01	mg/kg/day	9.E-07
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	1.3E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	9.E-08	3.7E-08	mg/kg/day	6.0E-02	mg/kg/day	6.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	3.9E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-08	1.1E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				ALUMINUM	11280	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.041	mg/kg	3.4E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	9.9E-07	mg/kg/day	3.0E-04	mg/kg/day	3.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				COBALT	3.247	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	342.1	mg/kg	NC		NC			--		4.0E-02	mg/kg/day	
				MANGANESE	88.95	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	0.981	mg/kg	NC		NC			--		1.0E-05	mg/kg/day	
				VANADIUM	47.69	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-03
		EXPOSURE POINT TOTAL									5.E-06					2.E-01
	EXPOSURE MEDIUM TOTAL										5.E-06					2.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E+02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/10/15

TABLE G-32
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	INGESTION	1,1,2,2-TETRACHLOROETHANE	ND	mg/l	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	ND	mg/l	--		5.7E-03	(mg/kg/day)-1				2.0E+00	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.0002	mg/l	NC		NC			1.2E-09	mg/kg/day	9.0E-02	mg/kg/day	1.E-08
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC					NA		
				1,2-CIS-DICHLOROETHYLENE	0.001	mg/l	NC		NC			5.9E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				1,2-DICHLOROBENZENE	0.0004	mg/l	NC		NC			2.3E-09	mg/kg/day	6.0E-01	mg/kg/day	4.E-09
				1,2-DICHLOROETHANE	0.0004	mg/l	3.4E-11	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-12	2.3E-09	mg/kg/day	2.0E-02	mg/kg/day	1.E-07
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	ND	mg/l	NC		NC					2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	ND	mg/l	--		5.4E-03	(mg/kg/day)-1				7.0E-02	mg/kg/day	
				1-CHLOROBUTANE	NA	mg/l	NC		NC					7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC					NA		
				BENZENE	ND	mg/l	--		5.5E-02	(mg/kg/day)-1				1.0E-02	mg/kg/day	
				CHLOROBENZENE	0.0004	mg/l	NC		NC			2.3E-09	mg/kg/day	7.0E-02	mg/kg/day	3.E-08
				CHLOROFORM	0.0002	mg/l	1.7E-11	mg/kg/day	3.1E-02	(mg/kg/day)-1	5.E-13	1.2E-09	mg/kg/day	1.0E-01	mg/kg/day	1.E-08
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC					NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC					NA		
				ETHYLBENZENE	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				M+P-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	ND	mg/l	--		2.0E-03	(mg/kg/day)-1				6.0E-02	mg/kg/day	
				METHYL-T-BUTYL ETHER	0.0009	mg/l	7.5E-11	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-13	5.3E-09	mg/kg/day	3.0E-01	mg/kg/day	2.E-08
				NAPHTHALENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				O-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC					NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC					NA		
				t-Butyl Alcohol	ND	mg/l	NC		NC					NA		
				TETRACHLOROETHYLENE	0.0002	mg/l	1.7E-11	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-14	1.2E-09	mg/kg/day	1.0E-01	mg/kg/day	1.E-08
				TOLUENE	0.0002	mg/l	NC		NC			1.2E-09	mg/kg/day	8.0E-01	mg/kg/day	1.E-09
				TRICHLOROETHYLENE	0.0003	mg/l	2.5E-11	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-12	1.8E-09	mg/kg/day	3.0E-04	mg/kg/day	6.E-06
				VINYL CHLORIDE	ND	mg/l	--		7.2E-01	(mg/kg/day)-1				3.0E-03	mg/kg/day	
				XYLENES,TOTAL	ND	mg/l	NC		NC					4.0E-01	mg/kg/day	
				1,4-DIOXANE	ND	mg/l	--		1.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				2,4-DIMETHYLPHENOL	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				2-METHYLNAPHTHALENE	ND	mg/l	NC		NC					4.0E-03	mg/kg/day	
				3-NITROANILINE	ND	mg/l	NC		NC					1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--		5.7E-03	(mg/kg/day)-1				NA		
				Biphenyl	ND	mg/l	NC		NC					1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1				1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					4.0E-04	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					5.0E-04	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				COBALT	NA	mg/l	NC		NC					3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC					7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND					NA		
				MANGANESE	NA	mg/l	NC		NC					1.4E-01	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					2.0E-03	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					7.0E-04	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	

TABLE G-32
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								5.E-12					6.E-06
			DERMAL	1,1,2,2-TETRACHLOROETHANE	ND	mg/l	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	ND	mg/l	--		5.7E-03	(mg/kg/day)-1				2.0E+00	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.0002	mg/l	NC		NC			4.6E-07	mg/kg/day	9.0E-02	mg/kg/day	5.E-06
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.001	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	0.0004	mg/l	NC		NC			5.4E-07	mg/kg/day	6.0E-01	mg/kg/day	9.E-07
				1,2-DICHLOROETHANE	0.0004	mg/l	8.0E-10	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-11	5.6E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	ND	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	ND	mg/l	--		5.4E-03	(mg/kg/day)-1				7.0E-02	mg/kg/day	
				1-CHLOROBUTANE	NA	mg/l	NC		NC			--		7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC			--		NA		
				BENZENE	ND	mg/l	--		5.5E-02	(mg/kg/day)-1				1.0E-02	mg/kg/day	
				CHLOROBENZENE	0.0004	mg/l	NC		NC			3.6E-07	mg/kg/day	7.0E-02	mg/kg/day	5.E-06
				CHLOROFORM	0.0002	mg/l	6.7E-10	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-11	4.7E-08	mg/kg/day	1.0E-01	mg/kg/day	5.E-07
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				M+P-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	ND	mg/l	--		2.0E-03	(mg/kg/day)-1				6.0E-02	mg/kg/day	
				METHYL-T-BUTYL ETHER	0.0009	mg/l	--		1.8E-03	(mg/kg/day)-1		--		3.0E-01	mg/kg/day	
				NAPHTHALENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				O-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	ND	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.0002	mg/l	3.3E-09	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-09	2.3E-07	mg/kg/day	1.0E-01	mg/kg/day	2.E-06
				TOLUENE	0.0002	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-01	mg/kg/day	2.E-07
				TRICHLOROETHYLENE	0.0003	mg/l	1.7E-09	mg/kg/day				1.2E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				VINYL CHLORIDE	ND	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	ND	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				1,4-DIOXANE	ND	mg/l	--		1.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				2,4-DIMETHYLPHENOL	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				2-METHYLNAPHTHALENE	ND	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	ND	mg/l	NC		NC			--		1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--							NA		
				Biphenyl	ND	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					6.0E-05	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					1.4E-02	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					3.5E-05	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					1.3E-05	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.3E-02	mg/kg/day	
				COBALT	NA	mg/l	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND			--		NA		
				MANGANESE	NA	mg/l	NC		NC					5.6E-03	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					1.4E-04	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					2.0E-04	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					1.8E-05	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	
			EXPOSURE ROUTE TOTAL								2.E-09					4.E-04
		EXPOSURE POINT TOTAL									2.E-09					4.E-04
	EXPOSURE MEDIUM TOTAL										2.E-09					4.E-04

TABLE G-32
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - TRENCH AIR	AMBIENT VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			--		5.8E-05	(ug/m3)-1				NA		
				1,1,2-TRICHLOROETHANE			--		1.6E-05	(ug/m3)-1				4.0E+00	ug/m3	
				1,1-DICHLOROETHANE			--		1.6E-06	(ug/m3)-1				5.0E+03	ug/m3	
				1,2,3-TRICHLOROBENZENE			NC		NC					NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.4E-01	ug/m3	2.0E+01	ug/m3	7.E-03
				1,2,4-TRIMETHYLBENZENE			NC		NC					7.0E+01	ug/m3	
				1,2-CIS-DICHLOROETHYLENE			NC		NC			4.4E+00	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			5.4E-01	ug/m3	2.0E+03	ug/m3	3.E-04
				1,2-DICHLOROETHANE			7.3E-03	ug/m3	2.6E-05	(ug/m3)-1	2.E-07	5.1E-01	ug/m3	7.0E+01	ug/m3	7.E-03
				1,2-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROPROPANE			NC		NC					3.3E+01	ug/m3	
				1,2-TRANS-DICHLOROETHYLENE			NC		NC					8.0E+02	ug/m3	
				1,3,5-TRIMETHYLBENZENE			NC		NC					1.0E+01	ug/m3	
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			--		1.1E-05	(ug/m3)-1				2.0E+02	ug/m3	
				1-CHLOROBUTANE			NC		NC					NA		
				2-CHLOROTOLUENE			NC		NC					8.0E+02	ug/m3	
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			--		7.8E-06	(ug/m3)-1				8.0E+01	ug/m3	
				CHLOROBENZENE			NC		NC			1.1E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				CHLOROFORM			1.0E-02	ug/m3	2.3E-05	(ug/m3)-1	2.E-07	7.0E-01	ug/m3	2.4E+02	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC					9.0E+03	ug/m3	
				M+P-XYLENE			NC		NC					4.0E+02	ug/m3	
				METHYLENE CHLORIDE			--		1.0E-08	(ug/m3)-1				1.0E+03	ug/m3	
				METHYL-T-BUTYL ETHER			7.3E-03	ug/m3	2.6E-07	(ug/m3)-1	2.E-09	5.1E-01	ug/m3	2.5E+03	ug/m3	2.E-04
				NAPHTHALENE			NC		NC					3.0E+00	ug/m3	
				O-XYLENE			NC		NC					4.0E+02	ug/m3	
				P-CHLOROTOLUENE			NC		NC					NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			3.1E-02	ug/m3	2.6E-07	(ug/m3)-1	8.E-09	2.2E+00	ug/m3	4.0E+01	ug/m3	5.E-02
				TOLUENE			NC		NC			1.3E+00	ug/m3	5.0E+03	ug/m3	3.E-04
				TRICHLOROETHYLENE			3.6E-02	ug/m3	4.1E-06	(ug/m3)-1	1.E-07	2.5E+00	ug/m3	5.4E+02	ug/m3	5.E-03
				VINYL CHLORIDE			--		4.4E-06	(ug/m3)-1				7.7E+01	ug/m3	
				XYLENES,TOTAL			NC		NC					4.0E+02	ug/m3	
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				7.2E+02	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC					NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+01	ug/m3	
				Biphenyl			NC		NC					NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY (5)			NC		NC					NA		
				BARIUM			NC		NC					5.0E+00	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					5.0E+00	ug/m3	
				COBALT			--		9.0E-03	(ug/m3)-1				2.0E-02	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC					3.0E-02	ug/m3	
				NICKEL			NC		NC					2.0E-01	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								6.E-07					8.E-02
		EXPOSURE POINT TOTAL									6.E-07					8.E-02
	EXPOSURE MEDIUM TOTAL										6.E-07					8.E-02
GROUNDWATER TOTAL											**6.E-07**					**8.E-02**

TABLE G-32
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	ETHYLBENZENE	2.609	mg/kg	NC		NC			8.4E-06	mg/kg/day	5.0E-02	mg/kg/day	2.E-04
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			7.5E-05	mg/kg/day	4.0E-01	mg/kg/day	2.E-04
				BENZO(A)ANTHRACENE	0.155	mg/kg	7.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	5.0E-07	mg/kg/day	2.0E-01	mg/kg/day	3.E-06
				BENZO(A)PYRENE	0.206	mg/kg	9.5E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	6.7E-07	mg/kg/day	2.0E-01	mg/kg/day	3.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	2.7E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-08	1.9E-06	mg/kg/day	2.0E-01	mg/kg/day	1.E-05
				Biphenyl	0.845	mg/kg	NC		NC			2.7E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	2.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.7E-07	mg/kg/day	2.0E-01	mg/kg/day	8.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	7.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-09	5.2E-07	mg/kg/day	2.0E-01	mg/kg/day	3.E-06
				ALUMINUM	11280	mg/kg	NC		NC			3.6E-02	mg/kg/day	1.0E+00	mg/kg/day	4.E-02
				ARSENIC	6.041	mg/kg	1.7E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.2E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				CHROMIUM	28.37	mg/kg	NC		NC			9.2E-05	mg/kg/day	1.0E+00	mg/kg/day	9.E-05
				COBALT	3.247	mg/kg	NC		NC			1.0E-05	mg/kg/day	3.0E-03	mg/kg/day	3.E-03
				COPPER	342.1	mg/kg	NC		NC			1.1E-03	mg/kg/day	1.0E-02	mg/kg/day	1.E-01
				MANGANESE	88.95	mg/kg	NC		NC			2.9E-04	mg/kg/day	1.4E-01	mg/kg/day	2.E-03
				THALLIUM	0.981	mg/kg	NC		NC			3.2E-06	mg/kg/day	8.0E-04	mg/kg/day	4.E-03
				VANADIUM	47.69	mg/kg	NC		NC			1.5E-04	mg/kg/day	7.0E-04	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								4.E-07					4.E-01
			DERMAL	ETHYLBENZENE	2.609	mg/kg	NC		NC			--		5.0E-02	mg/kg/day	
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			--		4.0E-01	mg/kg/day	
				BENZO(A)ANTHRACENE	0.155	mg/kg	2.8E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	2.0E-07	mg/kg/day	2.0E-01	mg/kg/day	1.E-06
				BENZO(A)PYRENE	0.206	mg/kg	3.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	3.E-08	2.6E-07	mg/kg/day	2.0E-01	mg/kg/day	1.E-06
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	7.4E-07	mg/kg/day	2.0E-01	mg/kg/day	4.E-06
				Biphenyl	0.845	mg/kg	NC		NC			8.2E-07	mg/kg/day	1.0E-01	mg/kg/day	8.E-06
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	9.2E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-09	6.5E-08	mg/kg/day	2.0E-01	mg/kg/day	3.E-07
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	2.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	2.0E-07	mg/kg/day	2.0E-01	mg/kg/day	1.E-06
				ALUMINUM	11280	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.041	mg/kg	2.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				CHROMIUM	28.37	mg/kg	NC		NC			--		1.3E-02	mg/kg/day	
				COBALT	3.247	mg/kg	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	342.1	mg/kg	NC		NC			--		1.0E-02	mg/kg/day	
				MANGANESE	88.95	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				THALLIUM	0.981	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				VANADIUM	47.69	mg/kg	NC		NC			--		1.8E-05	mg/kg/day	
			EXPOSURE ROUTE TOTAL								8.E-08					6.E-03
		EXPOSURE POINT TOTAL									5.E-07					4.E-01
	EXPOSURE MEDIUM TOTAL										5.E-07					4.E-01
	AIR	DUST AT SITE	DUST INHALATION	ETHYLBENZENE	2.609	mg/kg	NC		NC			4.4E-06	ug/m3	9.0E+03	ug/m3	5.E-10
				XYLENES,TOTAL	23.28	mg/kg	NC		NC			3.9E-05	ug/m3	4.0E+02	ug/m3	1.E-07
				BENZO(A)ANTHRACENE	0.155	mg/kg	3.7E-09	ug/m3	1.1E-04	(ug/m3)-1	4.E-13	2.6E-07	ug/m3	NA		
				BENZO(A)PYRENE	0.206	mg/kg	4.9E-09	ug/m3	1.1E-03	(ug/m3)-1	5.E-12	3.5E-07	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.59	mg/kg	1.4E-08	ug/m3	1.1E-04	(ug/m3)-1	2.E-12	9.9E-07	ug/m3	NA		
				Biphenyl	0.845	mg/kg	NC		NC			1.4E-06	ug/m3	NA		
				DIBENZO(A,H)ANTHRACENE	0.0514	mg/kg	1.2E-09	ug/m3	1.2E-03	(ug/m3)-1	1.E-12	8.6E-08	ug/m3	NA		
				INDENO(1,2,3-CD)PYRENE	0.16	mg/kg	3.8E-09	ug/m3	1.1E-04	(ug/m3)-1	4.E-13	2.7E-07	ug/m3	NA		
				ALUMINUM	11280	mg/kg	NC		NC			1.9E-02	ug/m3	5.0E+00	ug/m3	4.E-03
				ARSENIC	6.041	mg/kg	1.4E-07	ug/m3	4.3E-03	(ug/m3)-1	6.E-10	1.0E-05	ug/m3	1.5E-02	ug/m3	7.E-04
				CHROMIUM	28.37	mg/kg	NC		NC			4.8E-05	ug/m3	5.0E+00	ug/m3	1.E-05
				COBALT	3.247	mg/kg	7.8E-08	ug/m3	9.0E-03	(ug/m3)-1	7.E-10	5.5E-06	ug/m3	2.0E-02	ug/m3	3.E-04
				COPPER	342.1	mg/kg	NC		NC			5.7E-04	ug/m3	NA		
				MANGANESE	88.95	mg/kg	NC		NC			1.5E-04	ug/m3	5.0E-02	ug/m3	3.E-03
				THALLIUM	0.981	mg/kg	NC		NC			1.6E-06	ug/m3	NA		
				VANADIUM	47.69	mg/kg	NC		NC			8.0E-05	ug/m3	1.0E-01	ug/m3	8.E-04
			EXPOSURE ROUTE TOTAL								1.E-09					9.E-03
		EXPOSURE POINT TOTAL									1.E-09					9.E-03
									TOTAL RECEPTOR RISK ACROSS ALL MEDIA		**1.E-06**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E-01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-33
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			2.7E-07	mg/kg/day	NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			2.8E-06	mg/kg/day	4.0E-03	mg/kg/day	7.E-04
				BENZO(A)PYRENE	0.0293	mg/kg	2.7E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	1.4E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	3.2E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	2.E-09	1.6E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Biphenyl	3.306	mg/kg	NC		NC			1.5E-06	mg/kg/day	5.0E-01	mg/kg/day	3.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			4.9E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	4513	mg/kg	NC		NC			2.1E-03	mg/kg/day	1.0E+00	mg/kg/day	2.E-03
				ARSENIC	6.466	mg/kg	1.5E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	1.8E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			9.2E-06	mg/kg/day	1.5E+00	mg/kg/day	6.E-06
				VANADIUM	53.83	mg/kg	NC		NC			2.5E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
			EXPOSURE ROUTE TOTAL								3.E-07					1.E-02
			DERMAL	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			1.7E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				BENZO(A)PYRENE	0.0293	mg/kg	1.6E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	8.1E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	1.9E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	9.6E-09	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Biphenyl	3.306	mg/kg	NC		NC			7.0E-07	mg/kg/day	5.0E-01	mg/kg/day	1.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			2.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				ALUMINUM	4513	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.466	mg/kg	3.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-08	4.1E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	53.83	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								7.E-08					2.E-03
		EXPOSURE POINT TOTAL									3.E-07					2.E-02
	EXPOSURE MEDIUM TOTAL										3.E-07					2.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**3.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**2.E-02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-34
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			1.1E-07	mg/kg/day	NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			1.1E-06	mg/kg/day	4.0E-03	mg/kg/day	3.E-04
				BENZO(A)PYRENE	0.0293	mg/kg	9.2E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-09	5.4E-09	mg/kg/day	6.0E-02	mg/kg/day	9.E-08
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	1.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-10	6.3E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				Biphenyl	3.306	mg/kg	NC		NC			6.0E-07	mg/kg/day	5.0E-01	mg/kg/day	1.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			1.9E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				ALUMINUM	4513	mg/kg	NC		NC			8.3E-04	mg/kg/day	1.0E+00	mg/kg/day	8.E-04
				ARSENIC	6.466	mg/kg	1.2E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	7.1E-07	mg/kg/day	3.0E-04	mg/kg/day	2.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			3.6E-06	mg/kg/day	1.5E+00	mg/kg/day	2.E-06
				VANADIUM	53.83	mg/kg	NC		NC			9.8E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-03
			EXPOSURE ROUTE TOTAL								2.E-07					5.E-03
			DERMAL	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			5.8E-07	mg/kg/day	4.0E-03	mg/kg/day	1.E-04
				BENZO(A)PYRENE	0.0293	mg/kg	4.8E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-09	2.8E-09	mg/kg/day	6.0E-02	mg/kg/day	5.E-08
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	5.7E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-10	3.3E-09	mg/kg/day	6.0E-02	mg/kg/day	6.E-08
				Biphenyl	3.306	mg/kg	NC		NC			2.4E-07	mg/kg/day	5.0E-01	mg/kg/day	5.E-07
				NAPHTHALENE	1.051	mg/kg	NC		NC			1.0E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-06
				ALUMINUM	4513	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.466	mg/kg	2.5E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.4E-07	mg/kg/day	3.0E-04	mg/kg/day	5.E-04
				CHROMIUM	19.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	53.83	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								4.E-08					6.E-04
		EXPOSURE POINT TOTAL									2.E-07					6.E-03
	EXPOSURE MEDIUM TOTAL										2.E-07					6.E-03
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**6.E-03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-35
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.6E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-35
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			5.2E-07	mg/kg/day	NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			5.3E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				BENZO(A)PYRENE	0.0293	mg/kg	9.2E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	7.E-08	2.6E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	1.1E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	8.E-09	3.1E-08	mg/kg/day	6.0E-02	mg/kg/day	5.E-07
				Biphenyl	3.306	mg/kg	NC		NC			2.9E-06	mg/kg/day	5.0E-01	mg/kg/day	6.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			9.3E-07	mg/kg/day	2.0E-02	mg/kg/day	5.E-05
				ALUMINUM	4513	mg/kg	NC		NC			4.0E-03	mg/kg/day	1.0E+00	mg/kg/day	4.E-03
				ARSENIC	6.466	mg/kg	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.4E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				CHROMIUM	19.86	mg/kg	NC		NC			1.7E-05	mg/kg/day	1.5E+00	mg/kg/day	1.E-05
				VANADIUM	53.83	mg/kg	NC		NC			4.7E-05	mg/kg/day	5.0E-03	mg/kg/day	9.E-03
			EXPOSURE ROUTE TOTAL								2.E-06					3.E-02
			DERMAL	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			4.6E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				BENZO(A)PYRENE	0.0293	mg/kg	7.9E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	6.E-08	2.2E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	9.4E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	7.E-09	2.6E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Biphenyl	3.306	mg/kg	NC		NC			1.9E-06	mg/kg/day	5.0E-01	mg/kg/day	4.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			7.9E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				ALUMINUM	4513	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.466	mg/kg	4.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	53.83	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
												--				
			EXPOSURE ROUTE TOTAL								7.E-07					5.E-03
		EXPOSURE POINT TOTAL									3.E-06					3.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					3.E-02
	AIR	DUST AT SITE	DUST INHALATION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			8.9E-08	ug/m3	3.0E+03	ug/m3	3.E-11
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			9.1E-07	ug/m3	NA		
				BENZO(A)PYRENE	0.0293	mg/kg	1.6E-09	ug/m3	1.1E-03	(ug/m3)-1	2.E-12	4.4E-09	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	1.9E-09	ug/m3	1.1E-04	(ug/m3)-1	2.E-13	5.2E-09	ug/m3	NA		
				Biphenyl	3.306	mg/kg	NC		NC			5.0E-07	ug/m3	NA		
				NAPHTHALENE	1.051	mg/kg	NC		NC			1.6E-07	ug/m3	3.0E+00	ug/m3	5.E-08
				ALUMINUM	4513	mg/kg	NC		NC			6.8E-04	ug/m3	5.0E+00	ug/m3	1.E-04
				ARSENIC	6.466	mg/kg	3.5E-07	ug/m3	4.3E-03	(ug/m3)-1	2.E-09	9.8E-07	ug/m3	1.5E-02	ug/m3	7.E-05
				CHROMIUM	19.86	mg/kg	NC		NC			3.0E-06	ug/m3	NA		
				VANADIUM	53.83	mg/kg	NC		NC			8.1E-06	ug/m3	1.0E-01	ug/m3	8.E-05
			EXPOSURE ROUTE TOTAL								2.E-09					3.E-04
		EXPOSURE POINT TOTAL									2.E-09					3.E-04
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-36
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	9.2E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	2.E-06	2.6E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.1E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	1.E-07	5.8E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	7.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	4.E-08	2.1E-05	mg/kg/day	2.0E-01	mg/kg/day	1.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			3.1E-03	mg/kg/day	8.0E-04	mg/kg/day	4.E+00
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			5.0E-03	mg/kg/day	1.0E-02	mg/kg/day	5.E-01
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			2.2E-03	mg/kg/day	2.0E-03	mg/kg/day	1.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			4.9E-03	mg/kg/day	9.0E-02	mg/kg/day	5.E-02
				1,2-DICHLOROETHANE	0.0231	mg/l	8.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-06	2.3E-04	mg/kg/day	6.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			7.0E-04	mg/kg/day	9.0E-03	mg/kg/day	8.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	7.2E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	3.E-06	2.0E-04	mg/kg/day	9.0E-02	mg/kg/day	2.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			2.6E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			9.3E-05	mg/kg/day	1.0E-02	mg/kg/day	9.E-03
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			3.2E-04	mg/kg/day	3.0E-03	mg/kg/day	1.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.2E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	2.6E-03	mg/kg/day	7.0E-02	mg/kg/day	4.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			2.9E-03	mg/kg/day	4.0E-02	mg/kg/day	7.E-02
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				3-METHYL HEXANE	0.014	mg/l	NC		NC			1.4E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	1.3E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	2.0E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	6.E-08	5.7E-06	mg/kg/day	1.0E-02	mg/kg/day	6.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			3.0E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			2.0E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			4.1E-03	mg/kg/day	1.0E-01	mg/kg/day	4.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.7E-04	mg/kg/day	2.0E-01	mg/kg/day	9.E-04
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-06	3.3E-03	mg/kg/day	6.0E-03	mg/kg/day	6.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	4.8E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	9.E-08	1.3E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-02	mg/kg/day	5.E-03
				O-XYLENE	0.32	mg/l	NC		NC			3.1E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	9.E-02
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			2.0E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			1.1E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			1.1E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	2.0E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-09	5.6E-06	mg/kg/day	6.0E-03	mg/kg/day	9.E-04
				TOLUENE	3.656	mg/l	NC		NC			3.6E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	2.2E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-06	6.3E-05	mg/kg/day	5.0E-04	mg/kg/day	1.E-01
				VINYL CHLORIDE	0.0466	mg/l	1.6E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	1.E-04	4.6E-04	mg/kg/day	3.0E-03	mg/kg/day	2.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				1,4-DIOXANE	0.00991	mg/l	3.5E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-06	9.7E-05	mg/kg/day	3.0E-02	mg/kg/day	3.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.6E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			8.9E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			3.4E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	1.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-06	4.6E-03	mg/kg/day	7.0E-03	mg/kg/day	7.E-01
				Biphenyl	0.00537	mg/l	NC		NC			5.3E-05	mg/kg/day	5.0E-01	mg/kg/day	1.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	1.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	3.E-07	5.0E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				ALDRIN	0.0000079	mg/l	2.8E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	5.E-07	7.7E-08	mg/kg/day	3.0E-05	mg/kg/day	3.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	3.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	3.E-07	9.8E-08	mg/kg/day	1.3E-05	mg/kg/day	8.E-03
				ALUMINUM	55.28	mg/l	NC		NC			5.4E-01	mg/kg/day	1.0E+00	mg/kg/day	5.E-01
				ANTIMONY (5)	0.00832	mg/l	NC		NC			8.1E-05	mg/kg/day	4.0E-04	mg/kg/day	2.E-01
				ARSENIC	0.0251	mg/l	8.8E-05	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-04	2.5E-04	mg/kg/day	3.0E-04	mg/kg/day	8.E-01
				BARIUM	0.362	mg/l	NC		NC			3.5E-03	mg/kg/day	2.0E-01	mg/kg/day	2.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			3.6E-05	mg/kg/day	2.0E-03	mg/kg/day	2.E-02
				CADMIUM	0.0808	mg/l	NC		NC			7.9E-04	mg/kg/day	1.0E-03	mg/kg/day	8.E-01
				CHROMIUM	0.463	mg/l	NC		NC			4.5E-03	mg/kg/day	1.5E+00	mg/kg/day	3.E-03
				COBALT	0.0745	mg/l	NC		NC			7.3E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				COPPER	52.99	mg/l	NC		NC			5.2E-01	mg/kg/day	4.0E-02	mg/kg/day	1.E+01
				IRON	342.6	mg/l	NC		NC			3.4E+00	mg/kg/day	7.0E-01	mg/kg/day	5.E+00
				LEAD	0.135	mg/l	4.7E-04	mg/kg/day	ND			1.3E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			7.5E-03	mg/kg/day	1.4E-01	mg/kg/day	5.E-02
				MERCURY	0.00086978	mg/l	NC		NC			8.5E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				NICKEL	0.24	mg/l	NC		NC			2.3E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				SELENIUM	0.00744	mg/l	NC		NC			7.3E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				SILVER	0.00262	mg/l	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
				THALLIUM	0.00788	mg/l	NC		NC			7.7E-05	mg/kg/day	1.0E-05	mg/kg/day	8.E+00
				VANADIUM	0.397	mg/l	NC		NC			3.9E-03	mg/kg/day	5.0E-03	mg/kg/day	8.E-01
				ZINC	223.1	mg/l	NC		NC			2.2E+00	mg/kg/day	3.0E-01	mg/kg/day	7.E+00

TABLE G-36
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**4.E-04**					**5.E+01**
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			2.9E-07	mg/kg/day	NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			3.0E-06	mg/kg/day	4.0E-03	mg/kg/day	7.E-04
				BENZO(A)PYRENE	0.0293	mg/kg	5.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-08	1.4E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	6.1E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	4.E-09	1.7E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				Biphenyl	3.306	mg/kg	NC		NC			1.6E-06	mg/kg/day	5.0E-01	mg/kg/day	3.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			5.1E-07	mg/kg/day	2.0E-02	mg/kg/day	3.E-05
				ALUMINUM	4513	mg/kg	NC		NC			2.2E-03	mg/kg/day	1.0E+00	mg/kg/day	2.E-03
				ARSENIC	6.466	mg/kg	6.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.9E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			9.7E-06	mg/kg/day	1.5E+00	mg/kg/day	6.E-06
				VANADIUM	53.83	mg/kg	NC		NC			2.6E-05	mg/kg/day	5.0E-03	mg/kg/day	5.E-03
			EXPOSURE ROUTE TOTAL								1.E-06					1.E-02
			DERMAL	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			1.8E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				BENZO(A)PYRENE	0.0293	mg/kg	3.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	2.E-08	8.6E-09	mg/kg/day	6.0E-02	mg/kg/day	1.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	3.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	3.E-09	1.0E-08	mg/kg/day	6.0E-02	mg/kg/day	2.E-07
				Biphenyl	3.306	mg/kg	NC		NC			7.5E-07	mg/kg/day	5.0E-01	mg/kg/day	1.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			3.1E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				ALUMINUM	4513	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.466	mg/kg	1.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-07	4.4E-07	mg/kg/day	3.0E-04	mg/kg/day	1.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	53.83	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
												--				
			EXPOSURE ROUTE TOTAL								3.E-07					2.E-03
		EXPOSURE POINT TOTAL									1.E-06					2.E-02
	EXPOSURE MEDIUM TOTAL										1.E-06					2.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**4.E-04**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E+01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-37
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.4E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	3.E-06	1.7E-04	mg/kg/day	2.0E-02	mg/kg/day	8.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	3.3E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-07	3.8E-05	mg/kg/day	4.0E-03	mg/kg/day	9.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	1.2E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	7.E-08	1.4E-04	mg/kg/day	2.0E-01	mg/kg/day	7.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			2.0E-02	mg/kg/day	8.0E-04	mg/kg/day	3.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			3.3E-02	mg/kg/day	1.0E-02	mg/kg/day	3.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			1.9E-03	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			1.4E-02	mg/kg/day	2.0E-03	mg/kg/day	7.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			3.2E-02	mg/kg/day	9.0E-02	mg/kg/day	4.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.3E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-05	1.5E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.6E-03	mg/kg/day	9.0E-03	mg/kg/day	5.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-06	1.3E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-02
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			1.7E-03	mg/kg/day	2.0E-02	mg/kg/day	8.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			6.1E-04	mg/kg/day	1.0E-02	mg/kg/day	6.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			2.1E-03	mg/kg/day	3.0E-03	mg/kg/day	7.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.4E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-06	1.7E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			1.9E-02	mg/kg/day	4.0E-02	mg/kg/day	5.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			6.8E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			8.9E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	2.0E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	1.E-04	2.3E-02	mg/kg/day	4.0E-03	mg/kg/day	6.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			9.6E-02	mg/kg/day	2.0E-02	mg/kg/day	5.E+00
				CHLOROFORM	0.0005829	mg/l	3.2E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	1.E-07	3.7E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			2.0E-03	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			1.3E-03	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			2.7E-02	mg/kg/day	1.0E-01	mg/kg/day	3.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			1.1E-03	mg/kg/day	2.0E-01	mg/kg/day	6.E-03
				METHYLENE CHLORIDE	0.341	mg/l	9.9E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-05	2.2E-02	mg/kg/day	6.0E-03	mg/kg/day	4.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	7.5E-05	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-07	8.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			6.5E-04	mg/kg/day	2.0E-02	mg/kg/day	3.E-02
				O-XYLENE	0.32	mg/l	NC		NC			2.0E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			1.1E-02	mg/kg/day	2.0E-02	mg/kg/day	6.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			1.3E-04	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			7.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			7.4E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.1E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	7.E-09	3.6E-05	mg/kg/day	6.0E-03	mg/kg/day	6.E-03
				TOLUENE	3.656	mg/l	NC		NC			2.3E-01	mg/kg/day	8.0E-02	mg/kg/day	3.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	1.9E-04	mg/kg/day	9.3E-03	(mg/kg/day)-1	2.E-06	4.1E-04	mg/kg/day	NA		
				TRICHLOROETHYLENE	0.00641	mg/l	3.5E-05	mg/kg/day	3.7E-02	(mg/kg/day)-1	1.E-06	4.1E-04	mg/kg/day	5.0E-04	mg/kg/day	8.E-01
				VINYL CHLORIDE	0.0466	mg/l	2.6E-04	mg/kg/day	1.4E+00	(mg/kg/day)-1	4.E-04	3.0E-03	mg/kg/day	3.0E-03	mg/kg/day	1.E+00
				XYLENES,TOTAL	0.354	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				1,4-DIOXANE	0.00991	mg/l	5.4E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	5.E-06	6.3E-04	mg/kg/day	3.0E-02	mg/kg/day	2.E-02
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.0E-03	mg/kg/day	2.0E-02	mg/kg/day	5.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			5.8E-05	mg/kg/day	4.0E-03	mg/kg/day	1.E-02
				3-NITROANILINE	0.00346	mg/l	NC		NC			2.2E-04	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	2.6E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-05	3.0E-02	mg/kg/day	7.0E-03	mg/kg/day	4.E+00
				Biphenyl	0.00537	mg/l	NC		NC			3.4E-04	mg/kg/day	5.0E-01	mg/kg/day	7.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	2.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	4.E-07	3.3E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	4.3E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	7.E-07	5.1E-07	mg/kg/day	3.0E-05	mg/kg/day	2.E-02
				HEPTACHLOR EPOXIDE	0.00001	mg/l	5.5E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	5.E-07	6.4E-07	mg/kg/day	1.3E-05	mg/kg/day	5.E-02
				ALUMINUM	55.28	mg/l	NC		NC			3.5E+00	mg/kg/day	1.0E+00	mg/kg/day	4.E+00
				ARSENIC	0.0251	mg/l	1.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-04	1.6E-03	mg/kg/day	3.0E-04	mg/kg/day	5.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			5.3E-04	mg/kg/day	4.0E-04	mg/kg/day	1.E+00
				BARIUM	0.362	mg/l	NC		NC			2.3E-02	mg/kg/day	2.0E-01	mg/kg/day	1.E-01
				BERYLLIUM	0.00373	mg/l	NC		NC			2.4E-04	mg/kg/day	2.0E-03	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			5.2E-03	mg/kg/day	1.0E-03	mg/kg/day	5.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.0E-02	mg/kg/day	1.5E+00	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			4.8E-03	mg/kg/day	3.0E-04	mg/kg/day	2.E+01
				COPPER	52.99	mg/l	NC		NC			3.4E+00	mg/kg/day	4.0E-02	mg/kg/day	8.E+01
				IRON	342.6	mg/l	NC		NC			2.2E+01	mg/kg/day	7.0E-01	mg/kg/day	3.E+01
				LEAD	0.135	mg/l	7.4E-04	mg/kg/day	ND			8.6E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			4.9E-02	mg/kg/day	1.4E-01	mg/kg/day	3.E-01
				MERCURY	0.00086978	mg/l	NC		NC			5.6E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				NICKEL	0.24	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	8.E-01
				SELENIUM	0.00744	mg/l	NC		NC			4.8E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
				SILVER	0.00262	mg/l	NC		NC			1.7E-04	mg/kg/day	5.0E-03	mg/kg/day	3.E-02
				THALLIUM	0.00788	mg/l	NC		NC			5.0E-04	mg/kg/day	1.0E-05	mg/kg/day	5.E+01
				VANADIUM	0.397	mg/l	NC		NC			2.5E-02	mg/kg/day	5.0E-03	mg/kg/day	5.E+00
				ZINC	223.1	mg/l	NC		NC			1.4E+01	mg/kg/day	3.0E-01	mg/kg/day	5.E+01
			EXPOSURE ROUTE TOTAL								7.E-04					3.E+02

TABLE G-37
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	1.8E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	4.E-07	2.1E-05	mg/kg/day	2.0E-02	mg/kg/day	1.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	2.9E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	2.E-08	3.4E-06	mg/kg/day	4.0E-03	mg/kg/day	9.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	9.4E-07	mg/kg/day	5.7E-03	(mg/kg/day)-1	5.E-09	1.1E-05	mg/kg/day	2.0E-01	mg/kg/day	5.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			4.1E-02	mg/kg/day	1.0E-02	mg/kg/day	4.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			2.0E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	6.2E-06	mg/kg/day	9.1E-02	(mg/kg/day)-1	6.E-07	7.2E-05	mg/kg/day	6.0E-03	mg/kg/day	1.E-02
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			4.0E-04	mg/kg/day	9.0E-03	mg/kg/day	4.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.1E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	4.E-07	1.3E-04	mg/kg/day	9.0E-02	mg/kg/day	1.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			1.8E-03	mg/kg/day	3.0E-03	mg/kg/day	6.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	9.3E-04	mg/kg/day	5.4E-03	(mg/kg/day)-1	5.E-06	1.1E-02	mg/kg/day	7.0E-02	mg/kg/day	2.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	3.1E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-05	3.6E-03	mg/kg/day	4.0E-03	mg/kg/day	9.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			3.3E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	2.8E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	9.E-09	3.3E-06	mg/kg/day	1.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.6E-02	mg/kg/day	1.0E-01	mg/kg/day	2.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	3.8E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	8.E-07	8.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			4.1E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	1.8E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	1.E-06	2.1E-05	mg/kg/day	6.0E-03	mg/kg/day	4.E-03
				TOLUENE	3.656	mg/l	NC		NC			8.0E-02	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		NA		
				TRICHLOROETHYLENE	0.00641	mg/l	--					--		5.0E-04	mg/kg/day	
				VINYL CHLORIDE	0.0466	mg/l	1.4E-05	mg/kg/day	1.4E+00	(mg/kg/day)-1	2.E-05	1.6E-04	mg/kg/day	3.0E-03	mg/kg/day	5.E-02
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	2.0E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-08	2.3E-06	mg/kg/day	3.0E-02	mg/kg/day	8.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			1.5E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	5.4E-05	mg/kg/day				6.3E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.2E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	6.E-07	4.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				ALDRIN	0.0000079	mg/l	3.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	6.E-08	4.5E-08	mg/kg/day	3.0E-05	mg/kg/day	1.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	9.1E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	1.E-06	1.1E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-05	mg/kg/day	6.E-02
				BARIUM	0.362	mg/l	NC		NC			1.5E-04	mg/kg/day	1.4E-02	mg/kg/day	1.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.6E-06	mg/kg/day	1.4E-05	mg/kg/day	1.E-01
				CADMIUM	0.0808	mg/l	NC		NC			3.4E-05	mg/kg/day	2.5E-05	mg/kg/day	1.E+00
				CHROMIUM	0.463	mg/l	NC		NC			3.9E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			2.2E-02	mg/kg/day	4.0E-02	mg/kg/day	6.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			3.2E-04	mg/kg/day	5.6E-03	mg/kg/day	6.E-02
				MERCURY	0.00086978	mg/l	NC		NC			3.7E-07	mg/kg/day	2.1E-05	mg/kg/day	2.E-02
				NICKEL	0.24	mg/l	NC		NC			2.0E-05	mg/kg/day	8.0E-04	mg/kg/day	3.E-02
				SELENIUM	0.00744	mg/l	NC		NC			3.1E-06	mg/kg/day	5.0E-03	mg/kg/day	6.E-04
				SILVER	0.00262	mg/l	NC		NC			6.6E-07	mg/kg/day	2.0E-04	mg/kg/day	3.E-03
				THALLIUM	0.00788	mg/l	NC		NC			3.3E-06	mg/kg/day	1.0E-05	mg/kg/day	3.E-01
				VANADIUM	0.397	mg/l	NC		NC			1.7E-04	mg/kg/day	1.3E-04	mg/kg/day	1.E+00
				ZINC	223.1	mg/l	NC		NC			5.6E-02	mg/kg/day	3.0E-01	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								5.E-05					1.E+01
		EXPOSURE POINT TOTAL									8.E-04					3.E+02
	EXPOSURE MEDIUM TOTAL										8.E-04					3.E+02

TABLE G-37
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.6E-01	ug/m3	5.8E-05	(ug/m3)-1	3.E-05	5.4E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.2E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	1.3E+00	ug/m3	2.0E-01	ug/m3	7.E+00
				1,1-DICHLOROETHANE			4.5E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	5.3E+00	ug/m3	5.0E+02	ug/m3	1.E-02
				1,2,3-TRICHLOROBENZENE			NC		NC			6.4E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.0E+03	ug/m3	2.0E+00	ug/m3	5.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			6.0E+01	ug/m3	7.0E+00	ug/m3	9.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			5.6E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			1.1E+03	ug/m3	2.0E+02	ug/m3	5.E+00
				1,2-DICHLOROETHANE			4.8E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	5.6E+01	ug/m3	7.0E+00	ug/m3	8.E+00
				1,2-DICHLOROETHYLENE			NC		NC			1.8E+02	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			4.7E+01	ug/m3	4.0E+00	ug/m3	1.E+01
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			6.6E+01	ug/m3	6.0E+01	ug/m3	1.E+00
				1,3,5-TRIMETHYLBENZENE			NC		NC			1.9E+01	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.8E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	5.6E+02	ug/m3	8.0E+02	ug/m3	7.E-01
				1-CHLOROBUTANE			NC		NC			6.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			2.2E+02	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			7.4E+01	ug/m3	7.8E-06	(ug/m3)-1	6.E-04	8.6E+02	ug/m3	3.0E+01	ug/m3	3.E+01
				CHLOROBENZENE			NC		NC			3.4E+03	ug/m3	5.0E+01	ug/m3	7.E+01
				CHLOROFORM			1.2E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	1.4E+00	ug/m3	9.8E+01	ug/m3	1.E-02
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			8.7E+02	ug/m3	1.0E+03	ug/m3	9.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			4.2E+02	ug/m3	1.0E-08	(ug/m3)-1	4.E-06	9.2E+02	ug/m3	6.0E+02	ug/m3	2.E+00
				METHYL-T-BUTYL ETHER			2.4E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	2.8E+01	ug/m3	3.0E+03	ug/m3	9.E-03
				NAPHTHALENE			NC		NC			2.0E+01	ug/m3	3.0E+00	ug/m3	7.E+00
				O-XYLENE			NC		NC			6.7E+02	ug/m3	1.0E+02	ug/m3	7.E+00
				P-CHLOROTOLUENE			NC		NC			3.7E+02	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.1E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	1.3E+00	ug/m3	4.0E+01	ug/m3	3.E-02
				TOLUENE			NC		NC			8.1E+03	ug/m3	5.0E+03	ug/m3	2.E+00
				TRICHLOROETHYLENE			6.9E+00	ug/m3	1.0E-06	(ug/m3)-1	7.E-06	1.5E+01	ug/m3	NA		
				TRICHLOROETHYLENE			1.3E+00	ug/m3	3.1E-06	(ug/m3)-1	4.E-06	1.5E+01	ug/m3	2.0E+00	ug/m3	8.E+00
				VINYL CHLORIDE			1.1E+01	ug/m3	8.8E-06	(ug/m3)-1	9.E-05	1.2E+02	ug/m3	1.0E+02	ug/m3	1.E+00
				XYLENES,TOTAL			NC		NC			8.2E+02	ug/m3	1.0E+02	ug/m3	8.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			1.7E+00	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			9.5E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			1.5E+00	ug/m3	3.0E-01	ug/m3	5.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
			EXPOSURE ROUTE TOTAL								1.E-03					7.E+02
		EXPOSURE POINT TOTAL									1.E-03					7.E+02
GROUNDWATER TOTAL											**2.E-03**					**1.E+03**

TABLE G-37
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			7.5E-06	mg/kg/day	NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			7.7E-05	mg/kg/day	4.0E-03	mg/kg/day	2.E-02
				BENZO(A)PYRENE	0.0293	mg/kg	1.7E-07	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-06	3.7E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	2.0E-07	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-07	4.4E-07	mg/kg/day	6.0E-02	mg/kg/day	7.E-06
				Biphenyl	3.306	mg/kg	NC		NC			4.2E-05	mg/kg/day	5.0E-01	mg/kg/day	8.E-05
				NAPHTHALENE	1.051	mg/kg	NC		NC			1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				ALUMINUM	4513	mg/kg	NC		NC			5.8E-02	mg/kg/day	1.0E+00	mg/kg/day	6.E-02
				ARSENIC	6.466	mg/kg	4.3E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	6.E-06	5.0E-05	mg/kg/day	3.0E-04	mg/kg/day	2.E-01
				CHROMIUM	19.86	mg/kg	NC		NC			2.5E-04	mg/kg/day	1.5E+00	mg/kg/day	2.E-04
				VANADIUM	53.83	mg/kg	NC		NC			6.9E-04	mg/kg/day	5.0E-03	mg/kg/day	1.E-01
			EXPOSURE ROUTE TOTAL								8.E-06					4.E-01
			DERMAL	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			2.8E-05	mg/kg/day	4.0E-03	mg/kg/day	7.E-03
				BENZO(A)PYRENE	0.0293	mg/kg	6.2E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-07	1.4E-07	mg/kg/day	6.0E-02	mg/kg/day	2.E-06
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	7.3E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-08	1.6E-07	mg/kg/day	6.0E-02	mg/kg/day	3.E-06
				Biphenyl	3.306	mg/kg	NC		NC			1.2E-05	mg/kg/day	5.0E-01	mg/kg/day	2.E-05
				NAPHTHALENE	1.051	mg/kg	NC		NC			4.9E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				ALUMINUM	4513	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.466	mg/kg	6.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	9.E-07	6.9E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				CHROMIUM	19.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	53.83	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
			EXPOSURE ROUTE TOTAL								1.E-06					3.E-02
		EXPOSURE POINT TOTAL									9.E-06					4.E-01
	EXPOSURE MEDIUM TOTAL										9.E-06					4.E-01
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**1.E+03**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-38
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	2.5E-05	mg/kg/day	2.0E-01	(mg/kg/day)-1	5.E-06	7.2E-05	mg/kg/day	2.0E-02	mg/kg/day	4.E-03
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.6E-06	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-07	1.6E-05	mg/kg/day	4.0E-03	mg/kg/day	4.E-03
				1,1-DICHLOROETHANE	0.00218	mg/l	2.0E-05	mg/kg/day	5.7E-03	(mg/kg/day)-1	1.E-07	6.0E-05	mg/kg/day	2.0E-01	mg/kg/day	3.E-04
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			8.6E-03	mg/kg/day	8.0E-04	mg/kg/day	1.E+01
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.4E-02	mg/kg/day	1.0E-02	mg/kg/day	1.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			8.3E-04	mg/kg/day	NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			6.1E-03	mg/kg/day	2.0E-03	mg/kg/day	3.E+00
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			1.4E-02	mg/kg/day	9.0E-02	mg/kg/day	2.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	2.2E-04	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-05	6.3E-04	mg/kg/day	6.0E-03	mg/kg/day	1.E-01
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			2.0E-03	mg/kg/day	9.0E-03	mg/kg/day	2.E-01
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-04	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-06	5.6E-04	mg/kg/day	9.0E-02	mg/kg/day	6.E-03
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			7.3E-04	mg/kg/day	2.0E-02	mg/kg/day	4.E-02
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			2.6E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.9E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	2.5E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	1.E-05	7.2E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			8.0E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			2.9E-03	mg/kg/day	2.0E-02	mg/kg/day	1.E-01
				3-METHYL HEXANE	0.014	mg/l	NC		NC			3.8E-04	mg/kg/day	NA		
				BENZENE	0.364	mg/l	3.4E-03	mg/kg/day	5.5E-02	(mg/kg/day)-1	2.E-04	1.0E-02	mg/kg/day	4.0E-03	mg/kg/day	2.E+00
				CHLOROBENZENE	1.503	mg/l	NC		NC			4.1E-02	mg/kg/day	2.0E-02	mg/kg/day	2.E+00
				CHLOROFORM	0.0005829	mg/l	5.5E-06	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-07	1.6E-05	mg/kg/day	1.0E-02	mg/kg/day	2.E-03
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			8.5E-04	mg/kg/day	NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			5.5E-04	mg/kg/day	NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			1.1E-02	mg/kg/day	1.0E-01	mg/kg/day	1.E-01
				M+P-XYLENE	0.0175	mg/l	NC		NC			4.8E-04	mg/kg/day	2.0E-01	mg/kg/day	2.E-03
				METHYLENE CHLORIDE	0.341	mg/l	3.2E-03	mg/kg/day	2.0E-03	(mg/kg/day)-1	6.E-06	9.3E-03	mg/kg/day	6.0E-03	mg/kg/day	2.E+00
				METHYL-T-BUTYL ETHER	0.0137	mg/l	1.3E-04	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-07	3.8E-04	mg/kg/day	NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			2.8E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				O-XYLENE	0.32	mg/l	NC		NC			8.8E-03	mg/kg/day	2.0E-01	mg/kg/day	4.E-02
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			4.8E-03	mg/kg/day	2.0E-02	mg/kg/day	2.E-01
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			5.7E-05	mg/kg/day	NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			3.0E-02	mg/kg/day	NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			3.2E-04	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	5.4E-06	mg/kg/day	2.1E-03	(mg/kg/day)-1	1.E-08	1.6E-05	mg/kg/day	6.0E-03	mg/kg/day	3.E-03
				TOLUENE	3.656	mg/l	NC		NC			1.0E-01	mg/kg/day	8.0E-02	mg/kg/day	1.E+00
				TRICHLOROETHYLENE	0.00641	mg/l	6.0E-05	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-06	1.8E-04	mg/kg/day	5.0E-04	mg/kg/day	4.E-01
				VINYL CHLORIDE	0.0466	mg/l	4.4E-04	mg/kg/day	7.2E-01	(mg/kg/day)-1	3.E-04	1.3E-03	mg/kg/day	3.0E-03	mg/kg/day	4.E-01
				XYLENES,TOTAL	0.354	mg/l	NC		NC			9.7E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				1,4-DIOXANE	0.00991	mg/l	9.3E-05	mg/kg/day	1.0E-01	(mg/kg/day)-1	9.E-06	2.7E-04	mg/kg/day	3.0E-02	mg/kg/day	9.E-03
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			4.5E-04	mg/kg/day	2.0E-02	mg/kg/day	2.E-02
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			2.5E-05	mg/kg/day	4.0E-03	mg/kg/day	6.E-03
				3-NITROANILINE	0.00346	mg/l	NC		NC			9.5E-05	mg/kg/day	NA		
				ANILINE	0.4701	mg/l	4.4E-03	mg/kg/day	5.7E-03	(mg/kg/day)-1	3.E-05	1.3E-02	mg/kg/day	7.0E-03	mg/kg/day	2.E+00
				Biphenyl	0.00537	mg/l	NC		NC			1.5E-04	mg/kg/day	5.0E-01	mg/kg/day	3.E-04
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	4.8E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	7.E-07	1.4E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				ALDRIN	0.0000079	mg/l	7.4E-08	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-06	2.2E-07	mg/kg/day	3.0E-05	mg/kg/day	7.E-03
				HEPTACHLOR EPOXIDE	0.00001	mg/l	9.4E-08	mg/kg/day	9.1E+00	(mg/kg/day)-1	9.E-07	2.7E-07	mg/kg/day	1.3E-05	mg/kg/day	2.E-02
				ALUMINUM	55.28	mg/l	NC		NC			1.5E+00	mg/kg/day	1.0E+00	mg/kg/day	2.E+00
				ARSENIC	0.0251	mg/l	2.4E-04	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-04	6.9E-04	mg/kg/day	3.0E-04	mg/kg/day	2.E+00
				ANTIMONY	0.00832	mg/l	NC		NC			2.3E-04	mg/kg/day	4.0E-04	mg/kg/day	6.E-01
				BARIUM	0.362	mg/l	NC		NC			9.9E-03	mg/kg/day	2.0E-01	mg/kg/day	5.E-02
				BERYLLIUM	0.00373	mg/l	NC		NC			1.0E-04	mg/kg/day	2.0E-03	mg/kg/day	5.E-02
				CADMIUM	0.0808	mg/l	NC		NC			2.2E-03	mg/kg/day	1.0E-03	mg/kg/day	2.E+00
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-02	mg/kg/day	1.5E+00	mg/kg/day	8.E-03
				COBALT	0.0745	mg/l	NC		NC			2.0E-03	mg/kg/day	3.0E-04	mg/kg/day	7.E+00
				COPPER	52.99	mg/l	NC		NC			1.5E+00	mg/kg/day	4.0E-02	mg/kg/day	4.E+01
				IRON	342.6	mg/l	NC		NC			9.4E+00	mg/kg/day	7.0E-01	mg/kg/day	1.E+01
				LEAD	0.135	mg/l	1.3E-03	mg/kg/day	ND			3.7E-03	mg/kg/day	NA		
				MANGANESE	0.763	mg/l	NC		NC			2.1E-02	mg/kg/day	1.4E-01	mg/kg/day	1.E-01
				MERCURY	0.00086978	mg/l	NC		NC			2.4E-05	mg/kg/day	3.0E-04	mg/kg/day	8.E-02
				NICKEL	0.24	mg/l	NC		NC			6.6E-03	mg/kg/day	2.0E-02	mg/kg/day	3.E-01
				SELENIUM	0.00744	mg/l	NC		NC			2.0E-04	mg/kg/day	5.0E-03	mg/kg/day	4.E-02
				SILVER	0.00262	mg/l	NC		NC			7.2E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
				THALLIUM	0.00788	mg/l	NC		NC			2.2E-04	mg/kg/day	1.0E-05	mg/kg/day	2.E+01
				VANADIUM	0.397	mg/l	NC		NC			1.1E-02	mg/kg/day	5.0E-03	mg/kg/day	2.E+00
				ZINC	223.1	mg/l	NC		NC			6.1E+00	mg/kg/day	3.0E-01	mg/kg/day	2.E+01

TABLE G-38
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								9.E-04					1.E+02
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.00263	mg/l	3.1E-06	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-07	9.1E-06	mg/kg/day	2.0E-02	mg/kg/day	5.E-04
				1,1,2-TRICHLOROETHANE	0.00059338	mg/l	5.2E-07	mg/kg/day	5.7E-02	(mg/kg/day)-1	3.E-08	1.5E-06	mg/kg/day	4.0E-03	mg/kg/day	4.E-04
				1,1-DICHLOROETHANE	0.00218	mg/l	1.6E-06	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-09	4.7E-06	mg/kg/day	2.0E-01	mg/kg/day	2.E-05
				1,2,3-TRICHLOROBENZENE	0.314	mg/l	NC		NC			--		8.0E-04	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.509	mg/l	NC		NC			1.8E-02	mg/kg/day	1.0E-02	mg/kg/day	2.E+00
				1,2,4-TRIMETHYLBENZENE	0.0303	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.221	mg/l	NC		NC			--		2.0E-03	mg/kg/day	
				1,2-DICHLOROBENZENE	0.502	mg/l	NC		NC			9.1E-03	mg/kg/day	9.0E-02	mg/kg/day	1.E-01
				1,2-DICHLOROETHANE	0.0231	mg/l	1.1E-05	mg/kg/day	9.1E-02	(mg/kg/day)-1	1.E-06	3.1E-05	mg/kg/day	6.0E-03	mg/kg/day	5.E-03
				1,2-DICHLOROETHYLENE	0.0713	mg/l	NC		NC			1.7E-04	mg/kg/day	9.0E-03	mg/kg/day	2.E-02
				1,2-DICHLOROPROPANE	0.02048	mg/l	1.9E-05	mg/kg/day	3.6E-02	(mg/kg/day)-1	7.E-07	5.6E-05	mg/kg/day	9.0E-02	mg/kg/day	6.E-04
				1,2-TRANS-DICHLOROETHYLENE	0.0265	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	0.00948	mg/l	NC		NC			--		1.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	0.0325	mg/l	NC		NC			8.2E-04	mg/kg/day	3.0E-03	mg/kg/day	3.E-01
				1,4-DICHLOROBENZENE	0.264	mg/l	1.7E-03	mg/kg/day	5.4E-03	(mg/kg/day)-1	9.E-06	4.8E-03	mg/kg/day	7.0E-02	mg/kg/day	7.E-02
				1-CHLOROBUTANE	0.292	mg/l	NC		NC			--		4.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	0.106	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	0.014	mg/l	NC		NC			--		NA		
				BENZENE	0.364	mg/l	5.2E-04	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-05	1.5E-03	mg/kg/day	4.0E-03	mg/kg/day	4.E-01
				CHLOROBENZENE	1.503	mg/l	NC		NC			1.5E-02	mg/kg/day	2.0E-02	mg/kg/day	7.E-01
				CHLOROFORM	0.0005829	mg/l	5.0E-07	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-08	1.5E-06	mg/kg/day	1.0E-02	mg/kg/day	1.E-04
				CYCLOHEXANE, METHYL-	0.031	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	0.02	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.419	mg/l	NC		NC			6.9E-03	mg/kg/day	1.0E-01	mg/kg/day	7.E-02
				M+P-XYLENE	0.0175	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.341	mg/l	1.2E-04	mg/kg/day	2.0E-03	(mg/kg/day)-1	2.E-07	3.5E-04	mg/kg/day	6.0E-03	mg/kg/day	6.E-02
				METHYL-T-BUTYL ETHER	0.0137	mg/l	--		1.8E-03	(mg/kg/day)-1		--		NA		
				NAPHTHALENE	0.0102	mg/l	NC		NC			1.8E-04	mg/kg/day	2.0E-02	mg/kg/day	9.E-03
				O-XYLENE	0.32	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	0.177	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				P-ISOPROPYLTOLUENE	0.00209	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	1.1	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	0.0116	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.00056964	mg/l	3.2E-06	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-06	9.4E-06	mg/kg/day	6.0E-03	mg/kg/day	2.E-03
				TOLUENE	3.656	mg/l	NC		NC			3.5E-02	mg/kg/day	8.0E-02	mg/kg/day	4.E-01
				TRICHLOROETHYLENE	0.00641	mg/l	1.0E-05	mg/kg/day				3.0E-05	mg/kg/day	5.0E-04	mg/kg/day	6.E-02
				VINYL CHLORIDE	0.0466	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	0.354	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,4-DIOXANE	0.00991	mg/l	3.4E-07	mg/kg/day	1.0E-01	(mg/kg/day)-1	3.E-08	9.8E-07	mg/kg/day	3.0E-02	mg/kg/day	3.E-05
				2,4-DIMETHYLPHENOL	0.0163	mg/l	NC		NC			6.6E-05	mg/kg/day	2.0E-02	mg/kg/day	3.E-03
				2-METHYLNAPHTHALENE	0.00090458	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	0.00346	mg/l	NC		NC			--		NA		
				ANILINE	0.4701	mg/l	9.3E-05	mg/kg/day				2.7E-04	mg/kg/day	NA		
				Biphenyl	0.00537	mg/l	NC		NC			--		5.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	0.00513	mg/l	7.4E-05	mg/kg/day	1.4E-02	(mg/kg/day)-1	1.E-06	2.2E-04	mg/kg/day	2.0E-02	mg/kg/day	1.E-02
				ALDRIN	0.0000079	mg/l	6.8E-09	mg/kg/day	1.7E+01	(mg/kg/day)-1	1.E-07	2.0E-08	mg/kg/day	3.0E-05	mg/kg/day	7.E-04
				HEPTACHLOR EPOXIDE	0.00001	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	55.28	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	0.0251	mg/l	1.2E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	2.E-06	3.6E-06	mg/kg/day	3.0E-04	mg/kg/day	1.E-02
				ANTIMONY	0.00832	mg/l	NC		NC			1.2E-06	mg/kg/day	6.0E-05	mg/kg/day	2.E-02
				BARIUM	0.362	mg/l	NC		NC			5.2E-05	mg/kg/day	1.4E-02	mg/kg/day	4.E-03
				BERYLLIUM	0.00373	mg/l	NC		NC			5.3E-07	mg/kg/day	1.4E-05	mg/kg/day	4.E-02
				CADMIUM	0.0808	mg/l	NC		NC			1.2E-05	mg/kg/day	2.5E-05	mg/kg/day	5.E-01
				CHROMIUM	0.463	mg/l	NC		NC			1.3E-04	mg/kg/day	2.0E-02	mg/kg/day	7.E-03
				COBALT	0.0745	mg/l	NC		NC			--		3.0E-04	mg/kg/day	
				COPPER	52.99	mg/l	NC		NC			7.6E-03	mg/kg/day	4.0E-02	mg/kg/day	2.E-01
				IRON	342.6	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	0.135	mg/l	--		ND			--		NA		
				MANGANESE	0.763	mg/l	NC		NC			1.1E-04	mg/kg/day	5.6E-03	mg/kg/day	2.E-02
				MERCURY	0.00086978	mg/l	NC		NC			1.2E-07	mg/kg/day	2.1E-05	mg/kg/day	6.E-03
				NICKEL	0.24	mg/l	NC		NC			6.9E-06	mg/kg/day	8.0E-04	mg/kg/day	9.E-03
				SELENIUM	0.00744	mg/l	NC		NC			1.1E-06	mg/kg/day	5.0E-03	mg/kg/day	2.E-04
				SILVER	0.00262	mg/l	NC		NC			2.2E-07	mg/kg/day	2.0E-04	mg/kg/day	1.E-03
				THALLIUM	0.00788	mg/l	NC		NC			1.1E-06	mg/kg/day	1.0E-05	mg/kg/day	1.E-01
				VANADIUM	0.397	mg/l	NC		NC			5.7E-05	mg/kg/day	1.3E-04	mg/kg/day	4.E-01
				ZINC	223.1	mg/l	NC		NC			1.9E-02	mg/kg/day	3.0E-01	mg/kg/day	6.E-02
			EXPOSURE ROUTE TOTAL								4.E-05					5.E+00
		EXPOSURE POINT TOTAL									1.E-03					1.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					1.E+02

TABLE G-38
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - SHOWER AIR	INDOOR VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			4.3E-01	ug/m3	5.8E-05	(ug/m3)-1	2.E-05	1.2E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			1.1E-01	ug/m3	1.6E-05	(ug/m3)-1	2.E-06	3.1E-01	ug/m3	2.0E-01	ug/m3	2.E+00
				1,1-DICHLOROETHANE			4.2E-01	ug/m3	1.6E-06	(ug/m3)-1	7.E-07	1.2E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				1,2,3-TRICHLOROBENZENE			NC		NC			1.5E+02	ug/m3	NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.4E+02	ug/m3	2.0E+00	ug/m3	1.E+02
				1,2,4-TRIMETHYLBENZENE			NC		NC			1.4E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-CIS-DICHLOROETHYLENE			NC		NC			1.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			2.5E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1,2-DICHLOROETHANE			4.5E+00	ug/m3	2.6E-05	(ug/m3)-1	1.E-04	1.3E+01	ug/m3	7.0E+00	ug/m3	2.E+00
				1,2-DICHLOROETHYLENE			NC		NC			4.1E+01	ug/m3	NA		
				1,2-DICHLOROPROPANE			NC		NC			1.1E+01	ug/m3	4.0E+00	ug/m3	3.E+00
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			1.5E+01	ug/m3	6.0E+01	ug/m3	3.E-01
				1,3,5-TRIMETHYLBENZENE			NC		NC			4.3E+00	ug/m3	NA		
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.4E+01	ug/m3	1.1E-05	(ug/m3)-1	5.E-04	1.3E+02	ug/m3	8.0E+02	ug/m3	2.E-01
				1-CHLOROBUTANE			NC		NC			1.5E+02	ug/m3	NA		
				2-CHLOROTOLUENE			NC		NC			5.2E+01	ug/m3	NA		
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			6.9E+01	ug/m3	7.8E-06	(ug/m3)-1	5.E-04	2.0E+02	ug/m3	3.0E+01	ug/m3	7.E+00
				CHLOROBENZENE			NC		NC			7.8E+02	ug/m3	5.0E+01	ug/m3	2.E+01
				CHLOROFORM			1.1E-01	ug/m3	2.3E-05	(ug/m3)-1	3.E-06	3.3E-01	ug/m3	9.8E+01	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			2.0E+02	ug/m3	1.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					1.0E+02	ug/m3	
				METHYLENE CHLORIDE			7.3E+01	ug/m3	1.0E-08	(ug/m3)-1	7.E-07	2.1E+02	ug/m3	6.0E+02	ug/m3	4.E-01
				METHYL-T-BUTYL ETHER			2.2E+00	ug/m3	2.6E-07	(ug/m3)-1	6.E-07	6.4E+00	ug/m3	3.0E+03	ug/m3	2.E-03
				NAPHTHALENE			NC		NC			4.6E+00	ug/m3	3.0E+00	ug/m3	2.E+00
				O-XYLENE			NC		NC			1.5E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				P-CHLOROTOLUENE			NC		NC			8.6E+01	ug/m3	NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			1.0E-01	ug/m3	2.6E-07	(ug/m3)-1	3.E-08	3.0E-01	ug/m3	4.0E+01	ug/m3	7.E-03
				TOLUENE			NC		NC			1.9E+03	ug/m3	5.0E+03	ug/m3	4.E-01
				TRICHLOROETHYLENE			1.2E+00	ug/m3	4.1E-06	(ug/m3)-1	5.E-06	3.5E+00	ug/m3	2.0E+00	ug/m3	2.E+00
				VINYL CHLORIDE			9.7E+00	ug/m3	4.4E-06	(ug/m3)-1	4.E-05	2.8E+01	ug/m3	1.0E+02	ug/m3	3.E-01
				XYLENES,TOTAL			NC		NC			1.9E+02	ug/m3	1.0E+02	ug/m3	2.E+00
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				3.0E+01	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC			3.9E-01	ug/m3	NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+00	ug/m3	
				Biphenyl			NC		NC			2.2E+00	ug/m3	NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY			NC		NC					NA		
				BARIUM			NC		NC					5.0E-01	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					NA		
				COBALT			--		9.0E-03	(ug/m3)-1				6.0E-03	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC			3.4E-01	ug/m3	3.0E-01	ug/m3	1.E+00
				NICKEL			NC		NC					9.0E-02	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02

TABLE G-38
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**2.E-03**					**3.E+02**
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			8.1E-07	mg/kg/day	NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			8.3E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				BENZO(A)PYRENE	0.0293	mg/kg	1.4E-08	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-07	4.0E-08	mg/kg/day	6.0E-02	mg/kg/day	7.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	1.6E-08	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-08	4.8E-08	mg/kg/day	6.0E-02	mg/kg/day	8.E-07
				Biphenyl	3.306	mg/kg	NC		NC			4.5E-06	mg/kg/day	5.0E-01	mg/kg/day	9.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			1.4E-06	mg/kg/day	2.0E-02	mg/kg/day	7.E-05
				ALUMINUM	4513	mg/kg	NC		NC			6.2E-03	mg/kg/day	1.0E+00	mg/kg/day	6.E-03
				ARSENIC	6.466	mg/kg	1.8E-06	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-06	5.3E-06	mg/kg/day	3.0E-04	mg/kg/day	2.E-02
				CHROMIUM	19.86	mg/kg	NC		NC			2.7E-05	mg/kg/day	1.5E+00	mg/kg/day	2.E-05
				VANADIUM	53.83	mg/kg	NC		NC			7.4E-05	mg/kg/day	5.0E-03	mg/kg/day	1.E-02
			EXPOSURE ROUTE TOTAL								3.E-06					4.E-02
			DERMAL	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			4.3E-06	mg/kg/day	4.0E-03	mg/kg/day	1.E-03
				BENZO(A)PYRENE	0.0293	mg/kg	7.1E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	5.E-08	2.1E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	8.5E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	6.E-09	2.5E-08	mg/kg/day	6.0E-02	mg/kg/day	4.E-07
				Biphenyl	3.306	mg/kg	NC		NC			1.8E-06	mg/kg/day	5.0E-01	mg/kg/day	4.E-06
				NAPHTHALENE	1.051	mg/kg	NC		NC			7.5E-07	mg/kg/day	2.0E-02	mg/kg/day	4.E-05
				ALUMINUM	4513	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.466	mg/kg	3.6E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-07	1.1E-06	mg/kg/day	3.0E-04	mg/kg/day	4.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				VANADIUM	53.83	mg/kg	NC		NC			--		1.3E-04	mg/kg/day	
												--				
			EXPOSURE ROUTE TOTAL								6.E-07					5.E-03
		EXPOSURE POINT TOTAL									3.E-06					5.E-02
	EXPOSURE MEDIUM TOTAL										3.E-06					5.E-02
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**2.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E+02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-39
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	INGESTION	1,1,2,2-TETRACHLOROETHANE	ND	mg/l	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	ND	mg/l	--		5.7E-03	(mg/kg/day)-1				2.0E+00	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	ND	mg/l	NC		NC					9.0E-02	mg/kg/day	
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC					NA		
				1,2-CIS-DICHLOROETHYLENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				1,2-DICHLOROETHANE	ND	mg/l	--		9.1E-02	(mg/kg/day)-1				2.0E-02	mg/kg/day	
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	ND	mg/l	NC		NC					2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	ND	mg/l	--		5.4E-03	(mg/kg/day)-1				7.0E-02	mg/kg/day	
				1-CHLOROBUTANE	NA	mg/l	NC		NC					7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC					NA		
				BENZENE	ND	mg/l	--		5.5E-02	(mg/kg/day)-1				1.0E-02	mg/kg/day	
				CHLOROBENZENE	ND	mg/l	NC		NC					7.0E-02	mg/kg/day	
				CHLOROFORM	ND	mg/l	--		3.1E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC					NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC					NA		
				ETHYLBENZENE	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				M+P-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	ND	mg/l	--		2.0E-03	(mg/kg/day)-1				6.0E-02	mg/kg/day	
				METHYL-T-BUTYL ETHER	0.0003	mg/l	2.5E-11	mg/kg/day	1.8E-03	(mg/kg/day)-1	5.E-14	1.8E-09	mg/kg/day	3.0E-01	mg/kg/day	6.E-09
				NAPHTHALENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				O-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC					NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC					NA		
				t-Butyl Alcohol	ND	mg/l	NC		NC					NA		
				TETRACHLOROETHYLENE	ND	mg/l	--		2.1E-03	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				TOLUENE	ND	mg/l	NC		NC					8.0E-01	mg/kg/day	
				TRICHLOROETHYLENE	ND	mg/l	--		4.6E-02	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				VINYL CHLORIDE	ND	mg/l	--		7.2E-01	(mg/kg/day)-1				3.0E-03	mg/kg/day	
				XYLENES,TOTAL	ND	mg/l	NC		NC					4.0E-01	mg/kg/day	
				1,4-DIOXANE	ND	mg/l	--		1.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				2,4-DIMETHYLPHENOL	NA	mg/l	NC		NC					5.0E-02	mg/kg/day	
				2-METHYLNAPHTHALENE	NA	mg/l	NC		NC					4.0E-03	mg/kg/day	
				3-NITROANILINE	NA	mg/l	NC		NC					1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--		5.7E-03	(mg/kg/day)-1				NA		
				Biphenyl	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	NA	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1				1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					4.0E-04	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					5.0E-04	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				COBALT	NA	mg/l	NC		NC					3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC					7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND					NA		
				MANGANESE	NA	mg/l	NC		NC					1.4E-01	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					2.0E-03	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					7.0E-04	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	

TABLE G-39
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - TRENCH AIR	AMBIENT VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			--		5.8E-05	(ug/m3)-1				NA		
				1,1,2-TRICHLOROETHANE			--		1.6E-05	(ug/m3)-1				4.0E+00	ug/m3	
				1,1-DICHLOROETHANE			--		1.6E-06	(ug/m3)-1				5.0E+03	ug/m3	
				1,2,3-TRICHLOROBENZENE			NC		NC					NA		
				1,2,4-TRICHLOROBENZENE			NC		NC					2.0E+01	ug/m3	
				1,2,4-TRIMETHYLBENZENE			NC		NC					7.0E+01	ug/m3	
				1,2-CIS-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROBENZENE			NC		NC					2.0E+03	ug/m3	
				1,2-DICHLOROETHANE			--		2.6E-05	(ug/m3)-1				7.0E+01	ug/m3	
				1,2-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROPROPANE			NC		NC					3.3E+01	ug/m3	
				1,2-TRANS-DICHLOROETHYLENE			NC		NC					8.0E+02	ug/m3	
				1,3,5-TRIMETHYLBENZENE			NC		NC					1.0E+01	ug/m3	
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			--		1.1E-05	(ug/m3)-1				2.0E+02	ug/m3	
				1-CHLOROBUTANE			NC		NC					NA		
				2-CHLOROTOLUENE			NC		NC					8.0E+02	ug/m3	
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			--		7.8E-06	(ug/m3)-1				8.0E+01	ug/m3	
				CHLOROBENZENE			NC		NC					5.0E+02	ug/m3	
				CHLOROFORM			--		2.3E-05	(ug/m3)-1				2.4E+02	ug/m3	
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC					9.0E+03	ug/m3	
				M+P-XYLENE			NC		NC					4.0E+02	ug/m3	
				METHYLENE CHLORIDE			--		1.0E-08	(ug/m3)-1				1.0E+03	ug/m3	
				METHYL-T-BUTYL ETHER			2.4E-03	ug/m3	2.6E-07	(ug/m3)-1	6.E-10	1.7E-01	ug/m3	2.5E+03	ug/m3	7.E-05
				NAPHTHALENE			NC		NC					3.0E+00	ug/m3	
				O-XYLENE			NC		NC					4.0E+02	ug/m3	
				P-CHLOROTOLUENE			NC		NC					NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			--		2.6E-07	(ug/m3)-1				4.0E+01	ug/m3	
				TOLUENE			NC		NC					5.0E+03	ug/m3	
				TRICHLOROETHYLENE			--		4.1E-06	(ug/m3)-1				5.4E+02	ug/m3	
				VINYL CHLORIDE			--		4.4E-06	(ug/m3)-1				7.7E+01	ug/m3	
				XYLENES,TOTAL			NC		NC					4.0E+02	ug/m3	
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				7.2E+02	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC					NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+01	ug/m3	
				Biphenyl			NC		NC					NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY (5)			NC		NC					NA		
				BARIUM			NC		NC					5.0E+00	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					5.0E+00	ug/m3	
				COBALT			--		9.0E-03	(ug/m3)-1				2.0E-02	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC					3.0E-02	ug/m3	
				NICKEL			NC		NC					2.0E-01	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								6.E-10					7.E-05
		EXPOSURE POINT TOTAL									6.E-10					7.E-05
	EXPOSURE MEDIUM TOTAL										6.E-10					7.E-05

TABLE G-39
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**6.E-10**					**7.E-05**
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			1.9E-06	mg/kg/day	NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			2.0E-05	mg/kg/day	4.0E-03	mg/kg/day	5.E-03
				BENZO(A)PYRENE	0.0293	mg/kg	1.4E-09	mg/kg/day	7.3E+00	(mg/kg/day)-1	1.E-08	9.5E-08	mg/kg/day	2.0E-01	mg/kg/day	5.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	1.6E-09	mg/kg/day	7.3E-01	(mg/kg/day)-1	1.E-09	1.1E-07	mg/kg/day	2.0E-01	mg/kg/day	6.E-07
				Biphenyl	3.306	mg/kg	NC		NC			1.1E-05	mg/kg/day	1.0E-01	mg/kg/day	1.E-04
				NAPHTHALENE	1.051	mg/kg	NC		NC			3.4E-06	mg/kg/day	6.0E-01	mg/kg/day	6.E-06
				ALUMINUM	4513	mg/kg	NC		NC			1.5E-02	mg/kg/day	1.0E+00	mg/kg/day	1.E-02
				ARSENIC	6.466	mg/kg	1.8E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.3E-05	mg/kg/day	3.0E-04	mg/kg/day	4.E-02
				CHROMIUM	19.86	mg/kg	NC		NC			6.4E-05	mg/kg/day	1.0E+00	mg/kg/day	6.E-05
				VANADIUM	53.83	mg/kg	NC		NC			1.7E-04	mg/kg/day	7.0E-04	mg/kg/day	2.E-01
			EXPOSURE ROUTE TOTAL								3.E-07					3.E-01
			DERMAL	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			--		NA		
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			7.6E-06	mg/kg/day	4.0E-03	mg/kg/day	2.E-03
				BENZO(A)PYRENE	0.0293	mg/kg	5.3E-10	mg/kg/day	7.3E+00	(mg/kg/day)-1	4.E-09	3.7E-08	mg/kg/day	2.0E-01	mg/kg/day	2.E-07
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	6.2E-10	mg/kg/day	7.3E-01	(mg/kg/day)-1	5.E-10	4.4E-08	mg/kg/day	2.0E-01	mg/kg/day	2.E-07
				Biphenyl	3.306	mg/kg	NC		NC			3.2E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				NAPHTHALENE	1.051	mg/kg	NC		NC			1.3E-06	mg/kg/day	6.0E-01	mg/kg/day	2.E-06
				ALUMINUM	4513	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	6.466	mg/kg	2.7E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	4.E-08	1.9E-06	mg/kg/day	3.0E-04	mg/kg/day	6.E-03
				CHROMIUM	19.86	mg/kg	NC		NC			--		1.3E-02	mg/kg/day	
				VANADIUM	53.83	mg/kg	NC		NC			--		1.8E-05	mg/kg/day	
												--				
			EXPOSURE ROUTE TOTAL								4.E-08					8.E-03
		EXPOSURE POINT TOTAL									3.E-07					3.E-01
	EXPOSURE MEDIUM TOTAL										3.E-07					3.E-01
	AIR	DUST AT SITE	DUST INHALATION	CYCLOHEXANE, METHYL-	0.59	mg/kg	NC		NC			9.9E-07	ug/m3	3.0E+03	ug/m3	3.E-10
				2-METHYLNAPHTHALENE	6.053	mg/kg	NC		NC			1.0E-05	ug/m3	NA		
				BENZO(A)PYRENE	0.0293	mg/kg	7.0E-10	ug/m3	1.1E-03	(ug/m3)-1	8.E-13	4.9E-08	ug/m3	NA		
				BENZO(B)FLUORANTHENE	0.0347	mg/kg	8.3E-10	ug/m3	1.1E-04	(ug/m3)-1	9.E-14	5.8E-08	ug/m3	NA		
				Biphenyl	3.306	mg/kg	NC		NC			5.5E-06	ug/m3	NA		
				NAPHTHALENE	1.051	mg/kg	NC		NC			1.8E-06	ug/m3	3.0E+00	ug/m3	6.E-07
				ALUMINUM	4513	mg/kg	NC		NC			7.6E-03	ug/m3	5.0E+00	ug/m3	2.E-03
				ARSENIC	6.466	mg/kg	1.6E-07	ug/m3	4.3E-03	(ug/m3)-1	7.E-10	1.1E-05	ug/m3	1.5E-02	ug/m3	7.E-04
				CHROMIUM	19.86	mg/kg	NC		NC			3.3E-05	ug/m3	5.0E+00	ug/m3	7.E-06
				VANADIUM	53.83	mg/kg	NC		NC			9.0E-05	ug/m3	1.0E-01	ug/m3	9.E-04
			EXPOSURE ROUTE TOTAL								7.E-10					3.E-03
		EXPOSURE POINT TOTAL									7.E-10					3.E-03
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**3.E-07**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**3.E-01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 4/09/15
Checked by: BJR 4/10/2015

TABLE G-40
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	INGESTION	1,1,2,2-TETRACHLOROETHANE	0.008	mg/l	6.7E-10	mg/kg/day	2.0E-01	(mg/kg/day)-1	1.E-10	4.7E-08	mg/kg/day	5.0E-01	mg/kg/day	9.E-08
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	0.0005	mg/l	4.2E-11	mg/kg/day	5.7E-03	(mg/kg/day)-1	2.E-13	2.9E-09	mg/kg/day	2.0E+00	mg/kg/day	1.E-09
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.3	mg/l	NC		NC			1.8E-06	mg/kg/day	9.0E-02	mg/kg/day	2.E-05
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC					NA		
				1,2-CIS-DICHLOROETHYLENE	0.075	mg/l	NC		NC			4.4E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				1,2-DICHLOROBENZENE	0.59	mg/l	NC		NC			3.5E-06	mg/kg/day	6.0E-01	mg/kg/day	6.E-06
				1,2-DICHLOROETHANE	0.036	mg/l	3.0E-09	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-10	2.1E-07	mg/kg/day	2.0E-02	mg/kg/day	1.E-05
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	0.008	mg/l	NC		NC			4.7E-08	mg/kg/day	2.0E-01	mg/kg/day	2.E-07
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	0.065	mg/l	NC		NC			3.8E-07	mg/kg/day	2.0E-02	mg/kg/day	2.E-05
				1,4-DICHLOROBENZENE	0.18	mg/l	1.5E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	8.E-11	1.1E-06	mg/kg/day	7.0E-02	mg/kg/day	2.E-05
				1-CHLOROBUTANE	NA	mg/l	NC		NC					7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC					NA		
				BENZENE	1.8	mg/l	1.5E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	8.E-09	1.1E-05	mg/kg/day	1.0E-02	mg/kg/day	1.E-03
				CHLOROBENZENE	8.1	mg/l	NC		NC			4.8E-05	mg/kg/day	7.0E-02	mg/kg/day	7.E-04
				CHLOROFORM	0.002	mg/l	1.7E-10	mg/kg/day	3.1E-02	(mg/kg/day)-1	5.E-12	1.2E-08	mg/kg/day	1.0E-01	mg/kg/day	1.E-07
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC					NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC					NA		
				ETHYLBENZENE	0.28	mg/l	NC		NC			1.6E-06	mg/kg/day	5.0E-02	mg/kg/day	3.E-05
				M+P-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.003	mg/l	2.5E-10	mg/kg/day	2.0E-03	(mg/kg/day)-1	5.E-13	1.8E-08	mg/kg/day	6.0E-02	mg/kg/day	3.E-07
				METHYL-T-BUTYL ETHER	0.0014	mg/l	1.2E-10	mg/kg/day	1.8E-03	(mg/kg/day)-1	2.E-13	8.2E-09	mg/kg/day	3.0E-01	mg/kg/day	3.E-08
				NAPHTHALENE	0.036	mg/l	NC		NC			2.1E-07	mg/kg/day	6.0E-01	mg/kg/day	4.E-07
				O-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC					NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC					NA		
				t-Butyl Alcohol	0.013	mg/l	NC		NC			7.6E-08	mg/kg/day	NA		
				TETRACHLOROETHYLENE	0.003	mg/l	2.5E-10	mg/kg/day	2.1E-03	(mg/kg/day)-1	5.E-13	1.8E-08	mg/kg/day	1.0E-01	mg/kg/day	2.E-07
				TOLUENE	4	mg/l	NC		NC			2.3E-05	mg/kg/day	8.0E-01	mg/kg/day	3.E-05
				TRICHLOROETHYLENE	0.007	mg/l	5.9E-10	mg/kg/day	4.6E-02	(mg/kg/day)-1	3.E-11	4.1E-08	mg/kg/day	3.0E-04	mg/kg/day	1.E-04
				VINYL CHLORIDE	0.015	mg/l	1.3E-09	mg/kg/day	7.2E-01	(mg/kg/day)-1	9.E-10	8.8E-08	mg/kg/day	3.0E-03	mg/kg/day	3.E-05
				XYLENES,TOTAL	1.2	mg/l	NC		NC			7.0E-06	mg/kg/day	4.0E-01	mg/kg/day	2.E-05
				1,4-DIOXANE	0.14	mg/l	1.2E-08	mg/kg/day	1.0E-01	(mg/kg/day)-1	1.E-09	8.2E-07	mg/kg/day	5.0E-01	mg/kg/day	2.E-06
				2,4-DIMETHYLPHENOL	0.1	mg/l	NC		NC			5.9E-07	mg/kg/day	5.0E-02	mg/kg/day	1.E-05
				2-METHYLNAPHTHALENE	0.005	mg/l	NC		NC			2.9E-08	mg/kg/day	4.0E-03	mg/kg/day	7.E-06
				3-NITROANILINE	ND	mg/l	NC		NC					1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--		5.7E-03	(mg/kg/day)-1				NA		
				Biphenyl	0.024	mg/l	NC		NC			1.4E-07	mg/kg/day	1.0E-01	mg/kg/day	1.E-06
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1				1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					4.0E-04	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					5.0E-04	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				COBALT	NA	mg/l	NC		NC					3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC					7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND					NA		
				MANGANESE	NA	mg/l	NC		NC					1.4E-01	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					2.0E-03	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					7.0E-04	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	

TABLE G-40
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								1.E-08					2.E-03
			DERMAL	1,1,2,2-TETRACHLOROETHANE	0.008	mg/l	3.0E-08	mg/kg/day	2.0E-01	(mg/kg/day)-1	6.E-09	2.1E-06	mg/kg/day	5.0E-01	mg/kg/day	4.E-06
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	0.0005	mg/l	1.6E-09	mg/kg/day	5.7E-03	(mg/kg/day)-1	9.E-12	1.1E-07	mg/kg/day	2.0E+00	mg/kg/day	6.E-08
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.3	mg/l	NC		NC			6.8E-04	mg/kg/day	9.0E-02	mg/kg/day	8.E-03
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.075	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	0.59	mg/l	NC		NC			7.9E-04	mg/kg/day	6.0E-01	mg/kg/day	1.E-03
				1,2-DICHLOROETHANE	0.036	mg/l	7.2E-08	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-09	5.1E-06	mg/kg/day	2.0E-02	mg/kg/day	3.E-04
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	0.008	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	0.065	mg/l	NC		NC			1.2E-04	mg/kg/day	2.0E-02	mg/kg/day	6.E-03
				1,4-DICHLOROBENZENE	0.18	mg/l	3.5E-06	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-08	2.5E-04	mg/kg/day	7.0E-02	mg/kg/day	4.E-03
				1-CHLOROBUTANE	NA	mg/l	NC		NC			--		7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC			--		NA		
				BENZENE	1.8	mg/l	1.2E-05	mg/kg/day	5.5E-02	(mg/kg/day)-1	7.E-07	8.5E-04	mg/kg/day	1.0E-02	mg/kg/day	9.E-02
				CHLOROBENZENE	8.1	mg/l	NC		NC			7.3E-03	mg/kg/day	7.0E-02	mg/kg/day	1.E-01
				CHLOROFORM	0.002	mg/l	6.7E-09	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-10	4.7E-07	mg/kg/day	1.0E-01	mg/kg/day	5.E-06
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	0.28	mg/l	NC		NC			4.1E-04	mg/kg/day	5.0E-02	mg/kg/day	8.E-03
				M+P-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	0.003	mg/l	5.0E-09	mg/kg/day	2.0E-03	(mg/kg/day)-1	1.E-11	3.5E-07	mg/kg/day	6.0E-02	mg/kg/day	6.E-06
				METHYL-T-BUTYL ETHER	0.0014	mg/l	--		1.8E-03	(mg/kg/day)-1		--		3.0E-01	mg/kg/day	
				NAPHTHALENE	0.036	mg/l	NC		NC			5.2E-05	mg/kg/day	6.0E-01	mg/kg/day	9.E-05
				O-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC			--		NA		
				s-Butyl Alcohol	0.013	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.003	mg/l	5.0E-08	mg/kg/day	5.4E-01	(mg/kg/day)-1	3.E-08	3.5E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				TOLUENE	4	mg/l	NC		NC			3.8E-03	mg/kg/day	8.0E-01	mg/kg/day	5.E-03
				TRICHLOROETHYLENE	0.007	mg/l	4.0E-08	mg/kg/day				2.8E-06	mg/kg/day	3.0E-04	mg/kg/day	9.E-03
				VINYL CHLORIDE	0.015	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	1.2	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				1,4-DIOXANE	0.14	mg/l	2.2E-08	mg/kg/day	1.0E-01	(mg/kg/day)-1	2.E-09	1.6E-06	mg/kg/day	5.0E-01	mg/kg/day	3.E-06
				2,4-DIMETHYLPHENOL	0.1	mg/l	NC		NC			3.7E-05	mg/kg/day	5.0E-02	mg/kg/day	7.E-04
				2-METHYLNAPHTHALENE	0.005	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	ND	mg/l	NC		NC			--		1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--							NA		
				Biphenyl	0.024	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					6.0E-05	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					1.4E-02	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					3.5E-05	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					1.3E-05	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.3E-02	mg/kg/day	
				COBALT	NA	mg/l	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND			--		NA		
				MANGANESE	NA	mg/l	NC		NC					5.6E-03	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					1.4E-04	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					2.0E-04	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					1.8E-05	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	
			EXPOSURE ROUTE TOTAL								7.E-07					2.E-01
		EXPOSURE POINT TOTAL									7.E-07					2.E-01
	EXPOSURE MEDIUM TOTAL										7.E-07					2.E-01

TABLE G-40
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - TRENCH AIR	AMBIENT VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			2.9E-02	ug/m3	5.8E-05	(ug/m3)-1	2.E-06	2.0E+00	ug/m3	NA		
				1,1,2-TRICHLOROETHANE			--		1.6E-05	(ug/m3)-1				4.0E+00	ug/m3	
				1,1-DICHLOROETHANE			4.1E-02	ug/m3	1.6E-06	(ug/m3)-1	7.E-08	2.9E+00	ug/m3	5.0E+03	ug/m3	6.E-04
				1,2,3-TRICHLOROBENZENE			NC		NC					NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			2.1E+02	ug/m3	2.0E+01	ug/m3	1.E+01
				1,2,4-TRIMETHYLBENZENE			NC		NC					7.0E+01	ug/m3	
				1,2-CIS-DICHLOROETHYLENE			NC		NC			3.3E+02	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			8.0E+02	ug/m3	2.0E+03	ug/m3	4.E-01
				1,2-DICHLOROETHANE			6.5E-01	ug/m3	2.6E-05	(ug/m3)-1	2.E-05	4.6E+01	ug/m3	7.0E+01	ug/m3	7.E-01
				1,2-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROPROPANE			NC		NC					3.3E+01	ug/m3	
				1,2-TRANS-DICHLOROETHYLENE			NC		NC			3.5E+01	ug/m3	8.0E+02	ug/m3	4.E-02
				1,3,5-TRIMETHYLBENZENE			NC		NC					1.0E+01	ug/m3	
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			4.2E+00	ug/m3	1.1E-05	(ug/m3)-1	5.E-05	3.0E+02	ug/m3	2.0E+02	ug/m3	1.E+00
				1-CHLOROBUTANE			NC		NC					NA		
				2-CHLOROTOLUENE			NC		NC					8.0E+02	ug/m3	
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			1.6E+02	ug/m3	7.8E-06	(ug/m3)-1	1.E-03	1.1E+04	ug/m3	8.0E+01	ug/m3	1.E+02
				CHLOROBENZENE			NC		NC			2.2E+04	ug/m3	5.0E+02	ug/m3	4.E+01
				CHLOROFORM			1.0E-01	ug/m3	2.3E-05	(ug/m3)-1	2.E-06	7.0E+00	ug/m3	2.4E+02	ug/m3	3.E-02
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC			1.9E+03	ug/m3	9.0E+03	ug/m3	2.E-01
				M+P-XYLENE			NC		NC					4.0E+02	ug/m3	
				METHYLENE CHLORIDE			1.7E-01	ug/m3	1.0E-08	(ug/m3)-1	2.E-09	1.2E+01	ug/m3	1.0E+03	ug/m3	1.E-02
				METHYL-T-BUTYL ETHER			1.1E-02	ug/m3	2.6E-07	(ug/m3)-1	3.E-09	8.0E-01	ug/m3	2.5E+03	ug/m3	3.E-04
				NAPHTHALENE			NC		NC			1.3E+01	ug/m3	3.0E+00	ug/m3	4.E+00
				O-XYLENE			NC		NC					4.0E+02	ug/m3	
				P-CHLOROTOLUENE			NC		NC					NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			4.7E-01	ug/m3	2.6E-07	(ug/m3)-1	1.E-07	3.3E+01	ug/m3	4.0E+01	ug/m3	8.E-01
				TOLUENE			NC		NC			2.5E+04	ug/m3	5.0E+03	ug/m3	5.E+00
				TRICHLOROETHYLENE			8.3E-01	ug/m3	4.1E-06	(ug/m3)-1	3.E-06	5.8E+01	ug/m3	5.4E+02	ug/m3	1.E-01
				VINYL CHLORIDE			7.8E+00	ug/m3	4.4E-06	(ug/m3)-1	3.E-05	5.5E+02	ug/m3	7.7E+01	ug/m3	7.E+00
				XYLENES,TOTAL			NC		NC			6.5E+03	ug/m3	4.0E+02	ug/m3	2.E+01
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				7.2E+02	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC					NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+01	ug/m3	
				Biphenyl			NC		NC					NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY (5)			NC		NC					NA		
				BARIUM			NC		NC					5.0E+00	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					5.0E+00	ug/m3	
				COBALT			--		9.0E-03	(ug/m3)-1				2.0E-02	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC					3.0E-02	ug/m3	
				NICKEL			NC		NC					2.0E-01	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								1.E-03					2.E+02
		EXPOSURE POINT TOTAL									1.E-03					2.E+02
	EXPOSURE MEDIUM TOTAL										1.E-03					2.E+02
GROUNDWATER TOTAL											**1.E-03**					**2.E+02**

TABLE G-40
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 1 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			2.5E-07	mg/kg/day	9.0E-02	mg/kg/day	3.E-06
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			4.2E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			8.4E-05	mg/kg/day	6.0E-01	mg/kg/day	1.E-04
				1,2-DICHLOROETHANE	4.1	mg/kg	1.9E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-08	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				1,2-DICHLOROPROPANE	NA	mg/kg	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	0.89	mg/kg	4.1E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-10	2.9E-06	mg/kg/day	7.0E-02	mg/kg/day	4.E-05
				BENZENE	12	mg/kg	5.5E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-08	3.9E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CHLOROBENZENE	6.7	mg/kg	NC		NC			2.2E-05	mg/kg/day	7.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC					NA		
				ETHYLBENZENE	39	mg/kg	NC		NC			1.3E-04	mg/kg/day	5.0E-02	mg/kg/day	3.E-03
				METHYLENE CHLORIDE	32	mg/kg	1.5E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	3.E-09	1.0E-04	mg/kg/day	6.0E-02	mg/kg/day	2.E-03
				O-XYLENE	54	mg/kg	NC		NC			1.7E-04	mg/kg/day	4.0E-01	mg/kg/day	4.E-04
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC					NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		2.1E-03	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				TOLUENE	270	mg/kg	NC		NC			8.7E-04	mg/kg/day	8.0E-01	mg/kg/day	1.E-03
				TRICHLOROETHYLENE	2.7	mg/kg	1.2E-07	mg/kg/day	4.6E-02	(mg/kg/day)-1	6.E-09	8.7E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				XYLENES,TOTAL	170	mg/kg	NC		NC			5.5E-04	mg/kg/day	4.0E-01	mg/kg/day	1.E-03
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC					3.0E-04	mg/kg/day	
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3.E-04
				BENZO(A)ANTHRACENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				BENZO(A)PYRENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				Biphenyl	0.83	mg/kg	NC		NC			2.7E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				NAPHTHALENE	NA	mg/kg	NC		NC					6.0E-01	mg/kg/day	
				ALUMINUM	7800	mg/kg	NC		NC			2.5E-02	mg/kg/day	1.0E+00	mg/kg/day	3.E-02
				ANTIMONY	NA	mg/kg	NC		NC					4.0E-04	mg/kg/day	
				ARSENIC	7.39	mg/kg	2.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.4E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				CHROMIUM	20.7	mg/kg	NC		NC			6.7E-05	mg/kg/day	1.0E+00	mg/kg/day	7.E-05
				COBALT	2.18	mg/kg	NC		NC			7.0E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				COPPER	92.4	mg/kg	NC		NC			3.0E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				MANGANESE	69.8	mg/kg	NC		NC			2.3E-04	mg/kg/day	1.4E-01	mg/kg/day	2.E-03
				IRON	20400	mg/kg	NC		NC			6.6E-02	mg/kg/day	7.0E-01	mg/kg/day	9.E-02
				THALLIUM	1.68	mg/kg	NC		NC			5.4E-06	mg/kg/day	8.0E-04	mg/kg/day	7.E-03
				VANADIUM	29.1	mg/kg	NC		NC			9.4E-05	mg/kg/day	7.0E-04	mg/kg/day	1.E-01
			EXPOSURE ROUTE TOTAL								4.E-07					4.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		5.0E-01	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			7.6E-08	mg/kg/day	9.0E-02	mg/kg/day	8.E-07
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			2.5E-05	mg/kg/day	6.0E-01	mg/kg/day	4.E-05
				1,2-DICHLOROETHANE	4.1	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2-DICHLOROPROPANE	NA	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	0.89	mg/kg	1.2E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	7.E-11	8.6E-07	mg/kg/day	7.0E-02	mg/kg/day	1.E-05
				BENZENE	12	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		1.0E-02	mg/kg/day	
				CHLOROBENZENE	6.7	mg/kg	NC		NC			--		7.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	39	mg/kg	NC		NC			--		5.0E-02	mg/kg/day	
				METHYLENE CHLORIDE	32	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-02	mg/kg/day	
				O-XYLENE	54	mg/kg	NC		NC			--		4.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		1.0E-01	mg/kg/day	
				TOLUENE	270	mg/kg	NC		NC			--		8.0E-01	mg/kg/day	
				TRICHLOROETHYLENE	2.7	mg/kg	--		--			--		3.0E-04	mg/kg/day	
				XYLENES,TOTAL	170	mg/kg	NC		NC			--		4.0E-01	mg/kg/day	
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			4.7E-07	mg/kg/day	4.0E-03	mg/kg/day	1.E-04
				BENZO(A)ANTHRACENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				BENZO(A)PYRENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				Biphenyl	0.83	mg/kg	NC		NC			8.0E-07	mg/kg/day	1.0E-01	mg/kg/day	8.E-06
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				NAPHTHALENE	NA	mg/kg	NC		NC			--		6.0E-01	mg/kg/day	
				ALUMINUM	7800	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	NA	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	7.39	mg/kg	3.1E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-08	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				CHROMIUM	20.7	mg/kg	NC		NC			--		1.3E-02	mg/kg/day	
				COBALT	2.18	mg/kg	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	92.4	mg/kg	NC		NC			--		1.0E-02	mg/kg/day	
				MANGANESE	69.8	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				IRON	20400	mg/kg	NC		NC			--		7.0E-01	mg/kg/day	
				THALLIUM	1.68	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				VANADIUM	29.1	mg/kg	NC		NC			--		1.8E-05	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-08					7.E-03
		EXPOSURE POINT TOTAL									4.E-07					4.E-01
	EXPOSURE MEDIUM TOTAL										4.E-07					4.E-01

TABLE G-40
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	DUST AT SITE	DUST INHALATION	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		5.8E-05	(ug/m3)-1				NA		
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			1.3E-07	ug/m3	2.0E+01	ug/m3	7.E-09
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			2.2E-06	ug/m3	NA		
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			4.4E-05	ug/m3	2.0E+03	ug/m3	2.E-08
				1,2-DICHLOROETHANE	4.1	mg/kg	9.8E-08	ug/m3	2.6E-05	(ug/m3)-1	3.E-12	6.9E-06	ug/m3	7.0E+01	ug/m3	1.E-07
				1,2-DICHLOROPROPANE	NA	mg/kg	NC		NC					3.3E+01	ug/m3	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				1,4-DICHLOROBENZENE	0.89	mg/kg	2.1E-08	ug/m3	1.1E-05	(ug/m3)-1	2.E-13	1.5E-06	ug/m3	2.0E+02	ug/m3	7.E-09
				BENZENE	12	mg/kg	2.9E-07	ug/m3	7.8E-06	(ug/m3)-1	2.E-12	2.0E-05	ug/m3	8.0E+01	ug/m3	3.E-07
				CHLOROBENZENE	6.7	mg/kg	NC		NC			1.1E-05	ug/m3	5.0E+02	ug/m3	2.E-08
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC					3.0E+03	ug/m3	
				ETHYLBENZENE	39	mg/kg	NC		NC			6.5E-05	ug/m3	9.0E+03	ug/m3	7.E-09
				METHYLENE CHLORIDE	32	mg/kg	7.7E-07	ug/m3	1.0E-08	(ug/m3)-1	8.E-15	5.4E-05	ug/m3	1.0E+03	ug/m3	5.E-08
				O-XYLENE	54	mg/kg	NC		NC			9.1E-05	ug/m3	4.0E+02	ug/m3	2.E-07
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC					NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		2.6E-07	(ug/m3)-1				4.0E+01	ug/m3	
				TOLUENE	270	mg/kg	NC		NC			4.5E-04	ug/m3	5.0E+03	ug/m3	9.E-08
				TRICHLOROETHYLENE	2.7	mg/kg	6.5E-08	ug/m3	4.1E-06	(ug/m3)-1	3.E-13	4.5E-06	ug/m3	5.4E+02	ug/m3	8.E-09
				XYLENES,TOTAL	170	mg/kg	NC		NC			2.9E-04	ug/m3	4.0E+02	ug/m3	7.E-07
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			6.2E-07	ug/m3	NA		
				BENZO(A)ANTHRACENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				BENZO(A)PYRENE	NA	mg/kg	--		1.1E-03	(ug/m3)-1				NA		
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				Biphenyl	0.83	mg/kg	NC		NC			1.4E-06	ug/m3	NA		
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		1.2E-03	(ug/m3)-1				NA		
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				NAPHTHALENE	NA	mg/kg	NC		NC					3.0E+00	ug/m3	
				ALUMINUM	7800	mg/kg	NC		NC			1.3E-02	ug/m3	5.0E+00	ug/m3	3.E-03
				ANTIMONY	NA	mg/kg	NC		NC					NA		
				ARSENIC	7.39	mg/kg	1.8E-07	ug/m3	4.3E-03	(ug/m3)-1	8.E-10	1.2E-05	ug/m3	1.5E-02	ug/m3	8.E-04
				CHROMIUM	20.7	mg/kg	NC		NC			3.5E-05	ug/m3	5.0E+00	ug/m3	7.E-06
				COBALT	2.18	mg/kg	5.2E-08	ug/m3	9.0E-03	(ug/m3)-1	5.E-10	3.7E-06	ug/m3	2.0E-02	ug/m3	2.E-04
				COPPER	92.4	mg/kg	NC		NC			1.6E-04	ug/m3	NA		
				MANGANESE	69.8	mg/kg	NC		NC			1.2E-04	ug/m3	5.0E-02	ug/m3	2.E-03
				IRON	20400	mg/kg	NC		NC			3.4E-02	ug/m3	NA		
				THALLIUM	1.68	mg/kg	NC		NC			2.8E-06	ug/m3	NA		
				VANADIUM	29.1	mg/kg	NC		NC			4.9E-05	ug/m3	1.0E-01	ug/m3	5.E-04
			EXPOSURE ROUTE TOTAL								1.E-09					6.E-03
		EXPOSURE POINT TOTAL									1.E-09					6.E-03
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**1.E-03**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**2.E+02**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalaialble from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TABLE G-41
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	INGESTION	1,1,2,2-TETRACHLOROETHANE	ND	mg/l	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	ND	mg/l	--		5.7E-03	(mg/kg/day)-1				2.0E+00	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.0002	mg/l	NC		NC			1.2E-09	mg/kg/day	9.0E-02	mg/kg/day	1.E-08
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC					NA		
				1,2-CIS-DICHLOROETHYLENE	0.001	mg/l	NC		NC			5.9E-09	mg/kg/day	2.0E-02	mg/kg/day	3.E-07
				1,2-DICHLOROBENZENE	0.0004	mg/l	NC		NC			2.3E-09	mg/kg/day	6.0E-01	mg/kg/day	4.E-09
				1,2-DICHLOROETHANE	0.0004	mg/l	3.4E-11	mg/kg/day	9.1E-02	(mg/kg/day)-1	3.E-12	2.3E-09	mg/kg/day	2.0E-02	mg/kg/day	1.E-07
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	ND	mg/l	NC		NC					2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	ND	mg/l	--		5.4E-03	(mg/kg/day)-1				7.0E-02	mg/kg/day	
				1-CHLOROBUTANE	NA	mg/l	NC		NC					7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC					NA		
				BENZENE	ND	mg/l	--		5.5E-02	(mg/kg/day)-1				1.0E-02	mg/kg/day	
				CHLOROBENZENE	0.0004	mg/l	NC		NC			2.3E-09	mg/kg/day	7.0E-02	mg/kg/day	3.E-08
				CHLOROFORM	0.0002	mg/l	1.7E-11	mg/kg/day	3.1E-02	(mg/kg/day)-1	5.E-13	1.2E-09	mg/kg/day	1.0E-01	mg/kg/day	1.E-08
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC					NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC					NA		
				ETHYLBENZENE	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				M+P-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	ND	mg/l	--		2.0E-03	(mg/kg/day)-1				6.0E-02	mg/kg/day	
				METHYL-T-BUTYL ETHER	0.0009	mg/l	7.5E-11	mg/kg/day	1.8E-03	(mg/kg/day)-1	1.E-13	5.3E-09	mg/kg/day	3.0E-01	mg/kg/day	2.E-08
				NAPHTHALENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				O-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC					NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC					NA		
				t-Butyl Alcohol	ND	mg/l	NC		NC					NA		
				TETRACHLOROETHYLENE	0.0002	mg/l	1.7E-11	mg/kg/day	2.1E-03	(mg/kg/day)-1	4.E-14	1.2E-09	mg/kg/day	1.0E-01	mg/kg/day	1.E-08
				TOLUENE	0.0002	mg/l	NC		NC			1.2E-09	mg/kg/day	8.0E-01	mg/kg/day	1.E-09
				TRICHLOROETHYLENE	0.0003	mg/l	2.5E-11	mg/kg/day	4.6E-02	(mg/kg/day)-1	1.E-12	1.8E-09	mg/kg/day	3.0E-04	mg/kg/day	6.E-06
				VINYL CHLORIDE	ND	mg/l	--		7.2E-01	(mg/kg/day)-1				3.0E-03	mg/kg/day	
				XYLENES,TOTAL	ND	mg/l	NC		NC					4.0E-01	mg/kg/day	
				1,4-DIOXANE	ND	mg/l	--		1.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				2,4-DIMETHYLPHENOL	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				2-METHYLNAPHTHALENE	ND	mg/l	NC		NC					4.0E-03	mg/kg/day	
				3-NITROANILINE	ND	mg/l	NC		NC					1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--		5.7E-03	(mg/kg/day)-1				NA		
				Biphenyl	ND	mg/l	NC		NC					1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1				1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					4.0E-04	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					5.0E-04	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				COBALT	NA	mg/l	NC		NC					3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC					7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND					NA		
				MANGANESE	NA	mg/l	NC		NC					1.4E-01	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					2.0E-03	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					7.0E-04	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	

TABLE G-41
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			EXPOSURE ROUTE TOTAL								5.E-12					6.E-06
			DERMAL	1,1,2,2-TETRACHLOROETHANE	ND	mg/l	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	ND	mg/l	--		5.7E-03	(mg/kg/day)-1				2.0E+00	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.0002	mg/l	NC		NC			4.6E-07	mg/kg/day	9.0E-02	mg/kg/day	5.E-06
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	0.001	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	0.0004	mg/l	NC		NC			5.4E-07	mg/kg/day	6.0E-01	mg/kg/day	9.E-07
				1,2-DICHLOROETHANE	0.0004	mg/l	8.0E-10	mg/kg/day	9.1E-02	(mg/kg/day)-1	7.E-11	5.6E-08	mg/kg/day	2.0E-02	mg/kg/day	3.E-06
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	ND	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	ND	mg/l	--		5.4E-03	(mg/kg/day)-1				7.0E-02	mg/kg/day	
				1-CHLOROBUTANE	NA	mg/l	NC		NC			--		7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC			--		NA		
				BENZENE	ND	mg/l	--		5.5E-02	(mg/kg/day)-1				1.0E-02	mg/kg/day	
				CHLOROBENZENE	0.0004	mg/l	NC		NC			3.6E-07	mg/kg/day	7.0E-02	mg/kg/day	5.E-06
				CHLOROFORM	0.0002	mg/l	6.7E-10	mg/kg/day	3.1E-02	(mg/kg/day)-1	2.E-11	4.7E-08	mg/kg/day	1.0E-01	mg/kg/day	5.E-07
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				M+P-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	ND	mg/l	--		2.0E-03	(mg/kg/day)-1				6.0E-02	mg/kg/day	
				METHYL-T-BUTYL ETHER	0.0009	mg/l	--		1.8E-03	(mg/kg/day)-1		--		3.0E-01	mg/kg/day	
				NAPHTHALENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				O-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	ND	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	0.0002	mg/l	3.3E-09	mg/kg/day	5.4E-01	(mg/kg/day)-1	2.E-09	2.3E-07	mg/kg/day	1.0E-01	mg/kg/day	2.E-06
				TOLUENE	0.0002	mg/l	NC		NC			1.9E-07	mg/kg/day	8.0E-01	mg/kg/day	2.E-07
				TRICHLOROETHYLENE	0.0003	mg/l	1.7E-09	mg/kg/day				1.2E-07	mg/kg/day	3.0E-04	mg/kg/day	4.E-04
				VINYL CHLORIDE	ND	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	ND	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				1,4-DIOXANE	ND	mg/l	--		1.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				2,4-DIMETHYLPHENOL	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				2-METHYLNAPHTHALENE	ND	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	ND	mg/l	NC		NC			--		1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--							NA		
				Biphenyl	ND	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	ND	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					6.0E-05	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					1.4E-02	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					3.5E-05	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					1.3E-05	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.3E-02	mg/kg/day	
				COBALT	NA	mg/l	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND			--		NA		
				MANGANESE	NA	mg/l	NC		NC					5.6E-03	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					1.4E-04	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					2.0E-04	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					1.8E-05	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	
			EXPOSURE ROUTE TOTAL								2.E-09					4.E-04
		EXPOSURE POINT TOTAL									2.E-09					4.E-04
	EXPOSURE MEDIUM TOTAL										2.E-09					4.E-04

TABLE G-41
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	AIR	PLUME - TRENCH AIR	AMBIENT VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			--		5.8E-05	(ug/m3)-1				NA		
				1,1,2-TRICHLOROETHANE			--		1.6E-05	(ug/m3)-1				4.0E+00	ug/m3	
				1,1-DICHLOROETHANE			--		1.6E-06	(ug/m3)-1				5.0E+03	ug/m3	
				1,2,3-TRICHLOROBENZENE			NC		NC					NA		
				1,2,4-TRICHLOROBENZENE			NC		NC			1.4E-01	ug/m3	2.0E+01	ug/m3	7.E-03
				1,2,4-TRIMETHYLBENZENE			NC		NC					7.0E+01	ug/m3	
				1,2-CIS-DICHLOROETHYLENE			NC		NC			4.4E+00	ug/m3	NA		
				1,2-DICHLOROBENZENE			NC		NC			5.4E-01	ug/m3	2.0E+03	ug/m3	3.E-04
				1,2-DICHLOROETHANE			7.3E-03	ug/m3	2.6E-05	(ug/m3)-1	2.E-07	5.1E-01	ug/m3	7.0E+01	ug/m3	7.E-03
				1,2-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROPROPANE			NC		NC					3.3E+01	ug/m3	
				1,2-TRANS-DICHLOROETHYLENE			NC		NC					8.0E+02	ug/m3	
				1,3,5-TRIMETHYLBENZENE			NC		NC					1.0E+01	ug/m3	
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			--		1.1E-05	(ug/m3)-1				2.0E+02	ug/m3	
				1-CHLOROBUTANE			NC		NC					NA		
				2-CHLOROTOLUENE			NC		NC					8.0E+02	ug/m3	
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			--		7.8E-06	(ug/m3)-1				8.0E+01	ug/m3	
				CHLOROBENZENE			NC		NC			1.1E+00	ug/m3	5.0E+02	ug/m3	2.E-03
				CHLOROFORM			1.0E-02	ug/m3	2.3E-05	(ug/m3)-1	2.E-07	7.0E-01	ug/m3	2.4E+02	ug/m3	3.E-03
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC					9.0E+03	ug/m3	
				M+P-XYLENE			NC		NC					4.0E+02	ug/m3	
				METHYLENE CHLORIDE			--		1.0E-08	(ug/m3)-1				1.0E+03	ug/m3	
				METHYL-T-BUTYL ETHER			7.3E-03	ug/m3	2.6E-07	(ug/m3)-1	2.E-09	5.1E-01	ug/m3	2.5E+03	ug/m3	2.E-04
				NAPHTHALENE			NC		NC					3.0E+00	ug/m3	
				O-XYLENE			NC		NC					4.0E+02	ug/m3	
				P-CHLOROTOLUENE			NC		NC					NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				t-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			3.1E-02	ug/m3	2.6E-07	(ug/m3)-1	8.E-09	2.2E+00	ug/m3	4.0E+01	ug/m3	5.E-02
				TOLUENE			NC		NC			1.3E+00	ug/m3	5.0E+03	ug/m3	3.E-04
				TRICHLOROETHYLENE			3.6E-02	ug/m3	4.1E-06	(ug/m3)-1	1.E-07	2.5E+00	ug/m3	5.4E+02	ug/m3	5.E-03
				VINYL CHLORIDE			--		4.4E-06	(ug/m3)-1				7.7E+01	ug/m3	
				XYLENES,TOTAL			NC		NC					4.0E+02	ug/m3	
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				7.2E+02	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC					NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+01	ug/m3	
				Biphenyl			NC		NC					NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY (5)			NC		NC					NA		
				BARIUM			NC		NC					5.0E+00	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					5.0E+00	ug/m3	
				COBALT			--		9.0E-03	(ug/m3)-1				2.0E-02	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC					3.0E-02	ug/m3	
				NICKEL			NC		NC					2.0E-01	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								6.E-07					8.E-02
		EXPOSURE POINT TOTAL									6.E-07					8.E-02
	EXPOSURE MEDIUM TOTAL										6.E-07					8.E-02
GROUNDWATER TOTAL											**6.E-07**					**8.E-02**

TABLE G-41
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
SOIL	SOIL	AREA 2 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			2.5E-07	mg/kg/day	9.0E-02	mg/kg/day	3.E-06
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			4.2E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			8.4E-05	mg/kg/day	6.0E-01	mg/kg/day	1.E-04
				1,2-DICHLOROETHANE	4.1	mg/kg	1.9E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-08	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				1,2-DICHLOROPROPANE	NA	mg/kg	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	0.89	mg/kg	4.1E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-10	2.9E-06	mg/kg/day	7.0E-02	mg/kg/day	4.E-05
				BENZENE	12	mg/kg	5.5E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-08	3.9E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CHLOROBENZENE	6.7	mg/kg	NC		NC			2.2E-05	mg/kg/day	7.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC					NA		
				ETHYLBENZENE	39	mg/kg	NC		NC			1.3E-04	mg/kg/day	5.0E-02	mg/kg/day	3.E-03
				METHYLENE CHLORIDE	32	mg/kg	1.5E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	3.E-09	1.0E-04	mg/kg/day	6.0E-02	mg/kg/day	2.E-03
				O-XYLENE	54	mg/kg	NC		NC			1.7E-04	mg/kg/day	4.0E-01	mg/kg/day	4.E-04
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC					NA		
			EXPOSURE ROUTE TOTAL								4.E-07					4.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		5.0E-01	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			7.6E-08	mg/kg/day	9.0E-02	mg/kg/day	8.E-07
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			2.5E-05	mg/kg/day	6.0E-01	mg/kg/day	4.E-05
				1,2-DICHLOROETHANE	4.1	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2-DICHLOROPROPANE	NA	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	0.89	mg/kg	1.2E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	7.E-11	8.6E-07	mg/kg/day	7.0E-02	mg/kg/day	1.E-05
				BENZENE	12	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		1.0E-02	mg/kg/day	
				CHLOROBENZENE	6.7	mg/kg	NC		NC			--		7.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	39	mg/kg	NC		NC			--		5.0E-02	mg/kg/day	
				METHYLENE CHLORIDE	32	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-02	mg/kg/day	
				O-XYLENE	54	mg/kg	NC		NC			--		4.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		1.0E-01	mg/kg/day	
				TOLUENE	270	mg/kg	NC		NC			--		8.0E-01	mg/kg/day	
				TRICHLOROETHYLENE	2.7	mg/kg	--		--			--		3.0E-04	mg/kg/day	
				XYLENES,TOTAL	170	mg/kg	NC		NC			--		4.0E-01	mg/kg/day	
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			4.7E-07	mg/kg/day	4.0E-03	mg/kg/day	1.E-04
				BENZO(A)ANTHRACENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				BENZO(A)PYRENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				Biphenyl	0.83	mg/kg	NC		NC			8.0E-07	mg/kg/day	1.0E-01	mg/kg/day	8.E-06
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				NAPHTHALENE	NA	mg/kg	NC		NC			--		6.0E-01	mg/kg/day	
				ALUMINUM	7800	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	NA	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	7.39	mg/kg	3.1E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-08	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				CHROMIUM	20.7	mg/kg	NC		NC			--		1.3E-02	mg/kg/day	
				COBALT	2.18	mg/kg	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	92.4	mg/kg	NC		NC			--		1.0E-02	mg/kg/day	
				MANGANESE	69.8	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				IRON	20400	mg/kg	NC		NC			--		7.0E-01	mg/kg/day	
				THALLIUM	1.68	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				VANADIUM	29.1	mg/kg	NC		NC			--		1.8E-05	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-08					7.E-03
		EXPOSURE POINT TOTAL									4.E-07					4.E-01
	EXPOSURE MEDIUM TOTAL										4.E-07					4.E-01
	AIR	DUST AT SITE	DUST INHALATION	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		5.8E-05	(ug/m3)-1				NA		
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			1.3E-07	ug/m3	2.0E+01	ug/m3	7.E-09
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			2.2E-06	ug/m3	NA		
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			4.4E-05	ug/m3	2.0E+03	ug/m3	2.E-08
				1,2-DICHLOROETHANE	4.1	mg/kg	9.8E-08	ug/m3	2.6E-05	(ug/m3)-1	3.E-12	6.9E-06	ug/m3	7.0E+01	ug/m3	1.E-07
				1,2-DICHLOROPROPANE	NA	mg/kg	NC		NC					3.3E+01	ug/m3	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				1,4-DICHLOROBENZENE	0.89	mg/kg	2.1E-08	ug/m3	1.1E-05	(ug/m3)-1	2.E-13	1.5E-06	ug/m3	2.0E+02	ug/m3	7.E-09
				BENZENE	12	mg/kg	2.9E-07	ug/m3	7.8E-06	(ug/m3)-1	2.E-12	2.0E-05	ug/m3	8.0E+01	ug/m3	3.E-07
				CHLOROBENZENE	6.7	mg/kg	NC		NC			1.1E-05	ug/m3	5.0E+02	ug/m3	2.E-08
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC					3.0E+03	ug/m3	
				ETHYLBENZENE	39	mg/kg	NC		NC			6.5E-05	ug/m3	9.0E+03	ug/m3	7.E-09
				METHYLENE CHLORIDE	32	mg/kg	7.7E-07	ug/m3	1.0E-08	(ug/m3)-1	8.E-15	5.4E-05	ug/m3	1.0E+03	ug/m3	5.E-08
				O-XYLENE	54	mg/kg	NC		NC			9.1E-05	ug/m3	4.0E+02	ug/m3	2.E-07

TABLE G-41
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC					NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		2.6E-07	(ug/m3)-1				4.0E+01	ug/m3	
				TOLUENE	270	mg/kg	NC		NC			4.5E-04	ug/m3	5.0E+03	ug/m3	9.E-08
				TRICHLOROETHYLENE	2.7	mg/kg	6.5E-08	ug/m3	4.1E-06	(ug/m3)-1	3.E-13	4.5E-06	ug/m3	5.4E+02	ug/m3	8.E-09
				XYLENES,TOTAL	170	mg/kg	NC		NC			2.9E-04	ug/m3	4.0E+02	ug/m3	7.E-07
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			6.2E-07	ug/m3	NA		
				BENZO(A)ANTHRACENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				BENZO(A)PYRENE	NA	mg/kg	--		1.1E-03	(ug/m3)-1				NA		
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				Biphenyl	0.83	mg/kg	NC		NC			1.4E-06	ug/m3	NA		
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		1.2E-03	(ug/m3)-1				NA		
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				NAPHTHALENE	NA	mg/kg	NC		NC					3.0E+00	ug/m3	
				ALUMINUM	7800	mg/kg	NC		NC			1.3E-02	ug/m3	5.0E+00	ug/m3	3.E-03
				ANTIMONY	NA	mg/kg	NC		NC					NA		
				ARSENIC	7.39	mg/kg	1.8E-07	ug/m3	4.3E-03	(ug/m3)-1	8.E-10	1.2E-05	ug/m3	1.5E-02	ug/m3	8.E-04
				CHROMIUM	20.7	mg/kg	NC		NC			3.5E-05	ug/m3	5.0E+00	ug/m3	7.E-06
				COBALT	2.18	mg/kg	5.2E-08	ug/m3	9.0E-03	(ug/m3)-1	5.E-10	3.7E-06	ug/m3	2.0E-02	ug/m3	2.E-04
				COPPER	92.4	mg/kg	NC		NC			1.6E-04	ug/m3	NA		
				MANGANESE	69.8	mg/kg	NC		NC			1.2E-04	ug/m3	5.0E-02	ug/m3	2.E-03
				IRON	20400	mg/kg	NC		NC			3.4E-02	ug/m3	NA		
				THALLIUM	1.68	mg/kg	NC		NC			2.8E-06	ug/m3	NA		
				VANADIUM	29.1	mg/kg	NC		NC			4.9E-05	ug/m3	1.0E-01	ug/m3	5.E-04
			EXPOSURE ROUTE TOTAL								1.E-09					6.E-03
		EXPOSURE POINT TOTAL									1.E-09					6.E-03
										TOTAL RECEPTOR RISK ACROSS ALL MEDIA	**1.E-06**	**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**				**5.E-01**

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE G-42
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	INGESTION	1,1,2,2-TETRACHLOROETHANE	ND	mg/l	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	ND	mg/l	--		5.7E-03	(mg/kg/day)-1				2.0E+00	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	ND	mg/l	NC		NC					9.0E-02	mg/kg/day	
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC					NA		
				1,2-CIS-DICHLOROETHYLENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				1,2-DICHLOROETHANE	ND	mg/l	--		9.1E-02	(mg/kg/day)-1				2.0E-02	mg/kg/day	
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	ND	mg/l	NC		NC					2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	ND	mg/l	--		5.4E-03	(mg/kg/day)-1				7.0E-02	mg/kg/day	
				1-CHLOROBUTANE	NA	mg/l	NC		NC					7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC					NA		
				BENZENE	ND	mg/l	--		5.5E-02	(mg/kg/day)-1				1.0E-02	mg/kg/day	
				CHLOROBENZENE	ND	mg/l	NC		NC					7.0E-02	mg/kg/day	
				CHLOROFORM	ND	mg/l	--		3.1E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC					NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC					NA		
				ETHYLBENZENE	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				M+P-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	ND	mg/l	--		2.0E-03	(mg/kg/day)-1				6.0E-02	mg/kg/day	
				METHYL-T-BUTYL ETHER	0.0003	mg/l	2.5E-11	mg/kg/day	1.8E-03	(mg/kg/day)-1	5.E-14	1.8E-09	mg/kg/day	3.0E-01	mg/kg/day	6.E-09
				NAPHTHALENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				O-XYLENE	NA	mg/l	NC		NC					4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC					NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC					NA		
				t-Butyl Alcohol	ND	mg/l	NC		NC					NA		
				TETRACHLOROETHYLENE	ND	mg/l	--		2.1E-03	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				TOLUENE	ND	mg/l	NC		NC					8.0E-01	mg/kg/day	
				TRICHLOROETHYLENE	ND	mg/l	--		4.6E-02	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				VINYL CHLORIDE	ND	mg/l	--		7.2E-01	(mg/kg/day)-1				3.0E-03	mg/kg/day	
				XYLENES,TOTAL	ND	mg/l	NC		NC					4.0E-01	mg/kg/day	
				1,4-DIOXANE	ND	mg/l	--		1.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				2,4-DIMETHYLPHENOL	NA	mg/l	NC		NC					5.0E-02	mg/kg/day	
				2-METHYLNAPHTHALENE	NA	mg/l	NC		NC					4.0E-03	mg/kg/day	
				3-NITROANILINE	NA	mg/l	NC		NC					1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--		5.7E-03	(mg/kg/day)-1				NA		
				Biphenyl	NA	mg/l	NC		NC					1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	NA	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1				1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					4.0E-04	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					2.0E-01	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					5.0E-04	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.0E+00	mg/kg/day	
				COBALT	NA	mg/l	NC		NC					3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC					7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND					NA		
				MANGANESE	NA	mg/l	NC		NC					1.4E-01	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					2.0E-03	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					2.0E-02	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					7.0E-04	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-14					6.E-09

TABLE G-42
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
			DERMAL	1,1,2,2-TETRACHLOROETHANE	ND	mg/l	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,1,2-TRICHLOROETHANE	ND	mg/l	--		5.7E-02	(mg/kg/day)-1				4.0E-03	mg/kg/day	
				1,1-DICHLOROETHANE	ND	mg/l	--		5.7E-03	(mg/kg/day)-1				2.0E+00	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/l	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	ND	mg/l	NC		NC					9.0E-02	mg/kg/day	
				1,2,4-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		NA		
				1,2-CIS-DICHLOROETHYLENE	ND	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				1,2-DICHLOROETHANE	ND	mg/l	--		9.1E-02	(mg/kg/day)-1				2.0E-02	mg/kg/day	
				1,2-DICHLOROETHYLENE	NA	mg/l	NC		NC					9.0E-03	mg/kg/day	
				1,2-DICHLOROPROPANE	ND	mg/l	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,2-TRANS-DICHLOROETHYLENE	ND	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				1,3,5-TRIMETHYLBENZENE	NA	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				1,3-DICHLOROBENZENE	ND	mg/l	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	ND	mg/l	--		5.4E-03	(mg/kg/day)-1				7.0E-02	mg/kg/day	
				1-CHLOROBUTANE	NA	mg/l	NC		NC			--		7.0E-02	mg/kg/day	
				2-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-02	mg/kg/day	
				3-METHYL HEXANE	NA	mg/l	NC		NC			--		NA		
				BENZENE	ND	mg/l	--		5.5E-02	(mg/kg/day)-1				1.0E-02	mg/kg/day	
				CHLOROBENZENE	ND	mg/l	NC		NC					7.0E-02	mg/kg/day	
				CHLOROFORM	ND	mg/l	--		3.1E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				CYCLOHEXANE, METHYL-	NA	mg/l	NC		NC			--		NA		
				DIMETHYLSULFIDE	NA	mg/l	NC		NC			--		NA		
				ETHYLBENZENE	ND	mg/l	NC		NC					5.0E-02	mg/kg/day	
				M+P-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				METHYLENE CHLORIDE	ND	mg/l	--		2.0E-03	(mg/kg/day)-1				6.0E-02	mg/kg/day	
				METHYL-T-BUTYL ETHER	0.0003	mg/l	--		1.8E-03	(mg/kg/day)-1		--		3.0E-01	mg/kg/day	
				NAPHTHALENE	ND	mg/l	NC		NC					6.0E-01	mg/kg/day	
				O-XYLENE	NA	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				P-CHLOROTOLUENE	NA	mg/l	NC		NC			--		2.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/l	NC		NC			--		NA		
				SULFUR DIOXIDE	NA	mg/l	NC		NC			--		NA		
				t-Butyl Alcohol	ND	mg/l	NC		NC			--		NA		
				TETRACHLOROETHYLENE	ND	mg/l	--		5.4E-01	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				TOLUENE	ND	mg/l	NC		NC					8.0E-01	mg/kg/day	
				TRICHLOROETHYLENE	ND	mg/l	--							3.0E-04	mg/kg/day	
				VINYL CHLORIDE	ND	mg/l	--		7.2E-01	(mg/kg/day)-1		--		3.0E-03	mg/kg/day	
				XYLENES,TOTAL	ND	mg/l	NC		NC			--		4.0E-01	mg/kg/day	
				1,4-DIOXANE	ND	mg/l	--		1.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				2,4-DIMETHYLPHENOL	NA	mg/l	NC		NC					5.0E-02	mg/kg/day	
				2-METHYLNAPHTHALENE	NA	mg/l	NC		NC			--		4.0E-03	mg/kg/day	
				3-NITROANILINE	NA	mg/l	NC		NC			--		1.0E-03	mg/kg/day	
				ANILINE	NA	mg/l	--							NA		
				Biphenyl	NA	mg/l	NC		NC			--		1.0E-01	mg/kg/day	
				BIS(2-ETHYLHEXYL)PHTHALATE	NA	mg/l	--		1.4E-02	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				ALDRIN	NA	mg/l	--		1.7E+01	(mg/kg/day)-1				4.0E-05	mg/kg/day	
				HEPTACHLOR EPOXIDE	NA	mg/l	--		9.1E+00	(mg/kg/day)-1		--		1.3E-05	mg/kg/day	
				ALUMINUM	NA	mg/l	NC		NC			--		1.0E+00	mg/kg/day	
				ARSENIC	NA	mg/l	--		1.5E+00	(mg/kg/day)-1				3.0E-04	mg/kg/day	
				ANTIMONY (5)	NA	mg/l	NC		NC					6.0E-05	mg/kg/day	
				BARIUM	NA	mg/l	NC		NC					1.4E-02	mg/kg/day	
				BERYLLIUM	NA	mg/l	NC		NC					3.5E-05	mg/kg/day	
				CADMIUM	NA	mg/l	NC		NC					1.3E-05	mg/kg/day	
				CHROMIUM	NA	mg/l	NC		NC					1.3E-02	mg/kg/day	
				COBALT	NA	mg/l	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	NA	mg/l	NC		NC					1.0E-02	mg/kg/day	
				IRON	NA	mg/l	NC		NC			--		7.0E-01	mg/kg/day	
				LEAD	NA	mg/l	--		ND			--		NA		
				MANGANESE	NA	mg/l	NC		NC					5.6E-03	mg/kg/day	
				MERCURY	NA	mg/l	NC		NC					1.4E-04	mg/kg/day	
				NICKEL	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				SELENIUM	NA	mg/l	NC		NC					5.0E-03	mg/kg/day	
				SILVER	NA	mg/l	NC		NC					2.0E-04	mg/kg/day	
				THALLIUM	NA	mg/l	NC		NC					8.0E-04	mg/kg/day	
				VANADIUM	NA	mg/l	NC		NC					1.8E-05	mg/kg/day	
				ZINC	NA	mg/l	NC		NC					3.0E-01	mg/kg/day	
			EXPOSURE ROUTE TOTAL								--					--
		EXPOSURE POINT TOTAL									5.E-14					6.E-09

TABLE G-42
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	EXPOSURE MEDIUM TOTAL										5.E-14					6.E-09
	AIR	PLUME - TRENCH AIR	AMBIENT VAPOR INHALATION	1,1,2,2-TETRACHLOROETHANE			--		5.8E-05	(ug/m3)-1				NA		
				1,1,2-TRICHLOROETHANE			--		1.6E-05	(ug/m3)-1				4.0E+00	ug/m3	
				1,1-DICHLOROETHANE			--		1.6E-06	(ug/m3)-1				5.0E+03	ug/m3	
				1,2,3-TRICHLOROBENZENE			NC		NC					NA		
				1,2,4-TRICHLOROBENZENE			NC		NC					2.0E+01	ug/m3	
				1,2,4-TRIMETHYLBENZENE			NC		NC					7.0E+01	ug/m3	
				1,2-CIS-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROBENZENE			NC		NC					2.0E+03	ug/m3	
				1,2-DICHLOROETHANE			--		2.6E-05	(ug/m3)-1				7.0E+01	ug/m3	
				1,2-DICHLOROETHYLENE			NC		NC					NA		
				1,2-DICHLOROPROPANE			NC		NC					3.3E+01	ug/m3	
				1,2-TRANS-DICHLOROETHYLENE			NC		NC					8.0E+02	ug/m3	
				1,3,5-TRIMETHYLBENZENE			NC		NC					1.0E+01	ug/m3	
				1,3-DICHLOROBENZENE			NC		NC					NA		
				1,4-DICHLOROBENZENE			--		1.1E-05	(ug/m3)-1				2.0E+02	ug/m3	
				1-CHLOROBUTANE			NC		NC					NA		
				2-CHLOROTOLUENE			NC		NC					8.0E+02	ug/m3	
				3-METHYL HEXANE			NC		NC					NA		
				BENZENE			--		7.8E-06	(ug/m3)-1				8.0E+01	ug/m3	
				CHLOROBENZENE			NC		NC					5.0E+02	ug/m3	
				CHLOROFORM			--		2.3E-05	(ug/m3)-1				2.4E+02	ug/m3	
				CYCLOHEXANE, METHYL-			NC		NC					3.0E+03	ug/m3	
				DIMETHYLSULFIDE			NC		NC					NA		
				ETHYLBENZENE			NC		NC					9.0E+03	ug/m3	
				M+P-XYLENE			NC		NC					4.0E+02	ug/m3	
				METHYLENE CHLORIDE			--		1.0E-08	(ug/m3)-1				1.0E+03	ug/m3	
				METHYL-T-BUTYL ETHER			2.4E-03	ug/m3	2.6E-07	(ug/m3)-1	6.E-10	1.7E-01	ug/m3	2.5E+03	ug/m3	7.E-05
				NAPHTHALENE			NC		NC					3.0E+00	ug/m3	
				O-XYLENE			NC		NC					4.0E+02	ug/m3	
				P-CHLOROTOLUENE			NC		NC					NA		
				P-ISOPROPYLTOLUENE			NC		NC					NA		
				SULFUR DIOXIDE			NC		NC					NA		
				s-Butyl Alcohol			NC		NC					NA		
				TETRACHLOROETHYLENE			--		2.6E-07	(ug/m3)-1				4.0E+01	ug/m3	
				TOLUENE			NC		NC					5.0E+03	ug/m3	
				TRICHLOROETHYLENE			--		4.1E-06	(ug/m3)-1				5.4E+02	ug/m3	
				VINYL CHLORIDE			--		4.4E-06	(ug/m3)-1				7.7E+01	ug/m3	
				XYLENES,TOTAL			NC		NC					4.0E+02	ug/m3	
				1,4-DIOXANE			--		5.0E-06	(ug/m3)-1				7.2E+02	ug/m3	
				2,4-DIMETHYLPHENOL			NC		NC					NA		
				2-METHYLNAPHTHALENE			NC		NC					NA		
				3-NITROANILINE			NC		NC					NA		
				ANILINE			NC		NC					1.0E+01	ug/m3	
				Biphenyl			NC		NC					NA		
				BIS(2-ETHYLHEXYL)PHTHALATE			--		2.4E-06	(ug/m3)-1				NA		
				ALDRIN			--		4.9E-03	(ug/m3)-1				NA		
				HEPTACHLOR EPOXIDE			--		2.6E-03	(ug/m3)-1				NA		
				ALUMINUM			NC		NC					5.0E+00	ug/m3	
				ARSENIC			--		4.3E-03	(ug/m3)-1				1.5E-02	ug/m3	
				ANTIMONY (5)			NC		NC					NA		
				BARIUM			NC		NC					5.0E+00	ug/m3	
				BERYLLIUM			--		2.4E-03	(ug/m3)-1				2.0E-02	ug/m3	
				CADMIUM			--		1.8E-03	(ug/m3)-1				1.0E-02	ug/m3	
				CHROMIUM			NC		NC					5.0E+00	ug/m3	
				COBALT			--		9.0E-03	(ug/m3)-1				2.0E-02	ug/m3	
				COPPER			NC		NC					NA		
				IRON			NC		NC					NA		
				LEAD			--		ND					NA		
				MANGANESE			NC		NC					5.0E-02	ug/m3	
				MERCURY			NC		NC					3.0E-02	ug/m3	
				NICKEL			NC		NC					2.0E-01	ug/m3	
				SELENIUM			NC		NC					2.0E+01	ug/m3	
				SILVER			NC		NC					NA		
				THALLIUM			NC		NC					NA		
				VANADIUM			NC		NC					1.0E-01	ug/m3	
				ZINC			NC		NC					NA		
			EXPOSURE ROUTE TOTAL								6.E-10					7.E-05
		EXPOSURE POINT TOTAL									6.E-10					7.E-05
	EXPOSURE MEDIUM TOTAL										6.E-10					7.E-05

TABLE G-42
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
GROUNDWATER TOTAL											**6.E-10**					**7.E-05**
SOIL	SOIL	AREA 3 (0-10 FT)	INGESTION	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		2.0E-01	(mg/kg/day)-1				5.0E-01	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC					8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			2.5E-07	mg/kg/day	9.0E-02	mg/kg/day	3.E-06
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			4.2E-06	mg/kg/day	2.0E-02	mg/kg/day	2.E-04
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			8.4E-05	mg/kg/day	6.0E-01	mg/kg/day	1.E-04
				1,2-DICHLOROETHANE	4.1	mg/kg	1.9E-07	mg/kg/day	9.1E-02	(mg/kg/day)-1	2.E-08	1.3E-05	mg/kg/day	2.0E-02	mg/kg/day	7.E-04
				1,2-DICHLOROPROPANE	NA	mg/kg	--		3.6E-02	(mg/kg/day)-1				9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC					2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	0.89	mg/kg	4.1E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	2.E-10	2.9E-06	mg/kg/day	7.0E-02	mg/kg/day	4.E-05
				BENZENE	12	mg/kg	5.5E-07	mg/kg/day	5.5E-02	(mg/kg/day)-1	3.E-08	3.9E-05	mg/kg/day	1.0E-02	mg/kg/day	4.E-03
				CHLOROBENZENE	6.7	mg/kg	NC		NC			2.2E-05	mg/kg/day	7.0E-02	mg/kg/day	3.E-04
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC					NA		
				ETHYLBENZENE	39	mg/kg	NC		NC			1.3E-04	mg/kg/day	5.0E-02	mg/kg/day	3.E-03
				METHYLENE CHLORIDE	32	mg/kg	1.5E-06	mg/kg/day	2.0E-03	(mg/kg/day)-1	3.E-09	1.0E-04	mg/kg/day	6.0E-02	mg/kg/day	2.E-03
				O-XYLENE	54	mg/kg	NC		NC			1.7E-04	mg/kg/day	4.0E-01	mg/kg/day	4.E-04
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC					NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		2.1E-03	(mg/kg/day)-1				1.0E-01	mg/kg/day	
				TOLUENE	270	mg/kg	NC		NC			8.7E-04	mg/kg/day	8.0E-01	mg/kg/day	1.E-03
				TRICHLOROETHYLENE	2.7	mg/kg	1.2E-07	mg/kg/day	4.6E-02	(mg/kg/day)-1	6.E-09	8.7E-06	mg/kg/day	3.0E-04	mg/kg/day	3.E-02
				XYLENES,TOTAL	170	mg/kg	NC		NC			5.5E-04	mg/kg/day	4.0E-01	mg/kg/day	1.E-03
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC					3.0E-04	mg/kg/day	
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			1.2E-06	mg/kg/day	4.0E-03	mg/kg/day	3.E-04
				BENZO(A)ANTHRACENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				BENZO(A)PYRENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				Biphenyl	0.83	mg/kg	NC		NC			2.7E-06	mg/kg/day	1.0E-01	mg/kg/day	3.E-05
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1				2.0E-01	mg/kg/day	
				NAPHTHALENE	NA	mg/kg	NC		NC					6.0E-01	mg/kg/day	
				ALUMINUM	7800	mg/kg	NC		NC			2.5E-02	mg/kg/day	1.0E+00	mg/kg/day	3.E-02
				ANTIMONY	NA	mg/kg	NC		NC					4.0E-04	mg/kg/day	
				ARSENIC	7.39	mg/kg	2.0E-07	mg/kg/day	1.5E+00	(mg/kg/day)-1	3.E-07	1.4E-05	mg/kg/day	3.0E-04	mg/kg/day	5.E-02
				CHROMIUM	20.7	mg/kg	NC		NC			6.7E-05	mg/kg/day	1.0E+00	mg/kg/day	7.E-05
				COBALT	2.18	mg/kg	NC		NC			7.0E-06	mg/kg/day	3.0E-03	mg/kg/day	2.E-03
				COPPER	92.4	mg/kg	NC		NC			3.0E-04	mg/kg/day	1.0E-02	mg/kg/day	3.E-02
				MANGANESE	69.8	mg/kg	NC		NC			2.3E-04	mg/kg/day	1.4E-01	mg/kg/day	2.E-03
				IRON	20400	mg/kg	NC		NC			6.6E-02	mg/kg/day	7.0E-01	mg/kg/day	9.E-02
				THALLIUM	1.68	mg/kg	NC		NC			5.4E-06	mg/kg/day	8.0E-04	mg/kg/day	7.E-03
				VANADIUM	29.1	mg/kg	NC		NC			9.4E-05	mg/kg/day	7.0E-04	mg/kg/day	1.E-01
			EXPOSURE ROUTE TOTAL								4.E-07					4.E-01
			DERMAL	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		2.0E-01	(mg/kg/day)-1		--		5.0E-01	mg/kg/day	
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC			--		8.0E-03	mg/kg/day	
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			7.6E-08	mg/kg/day	9.0E-02	mg/kg/day	8.E-07
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			2.5E-05	mg/kg/day	6.0E-01	mg/kg/day	4.E-05
				1,2-DICHLOROETHANE	4.1	mg/kg	--		9.1E-02	(mg/kg/day)-1		--		2.0E-02	mg/kg/day	
				1,2-DICHLOROPROPANE	NA	mg/kg	--		3.6E-02	(mg/kg/day)-1		--		9.0E-02	mg/kg/day	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC			--		2.0E-02	mg/kg/day	
				1,4-DICHLOROBENZENE	0.89	mg/kg	1.2E-08	mg/kg/day	5.4E-03	(mg/kg/day)-1	7.E-11	8.6E-07	mg/kg/day	7.0E-02	mg/kg/day	1.E-05
				BENZENE	12	mg/kg	--		5.5E-02	(mg/kg/day)-1		--		1.0E-02	mg/kg/day	
				CHLOROBENZENE	6.7	mg/kg	NC		NC			--		7.0E-02	mg/kg/day	
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC			--		NA		
				ETHYLBENZENE	39	mg/kg	NC		NC			--		5.0E-02	mg/kg/day	
				METHYLENE CHLORIDE	32	mg/kg	--		2.0E-03	(mg/kg/day)-1		--		6.0E-02	mg/kg/day	
				O-XYLENE	54	mg/kg	NC		NC			--		4.0E-01	mg/kg/day	
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC			--		NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		5.4E-01	(mg/kg/day)-1		--		1.0E-01	mg/kg/day	
				TOLUENE	270	mg/kg	NC		NC			--		8.0E-01	mg/kg/day	
				TRICHLOROETHYLENE	2.7	mg/kg	--		--			--		3.0E-04	mg/kg/day	
				XYLENES,TOTAL	170	mg/kg	NC		NC			--		4.0E-01	mg/kg/day	
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC			--		3.0E-04	mg/kg/day	
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			4.7E-07	mg/kg/day	4.0E-03	mg/kg/day	1.E-04
				BENZO(A)ANTHRACENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				BENZO(A)PYRENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				Biphenyl	0.83	mg/kg	NC		NC			8.0E-07	mg/kg/day	1.0E-01	mg/kg/day	8.E-06
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		7.3E+00	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		7.3E-01	(mg/kg/day)-1		--		2.0E-01	mg/kg/day	
				NAPHTHALENE	NA	mg/kg	NC		NC			--		6.0E-01	mg/kg/day	
				ALUMINUM	7800	mg/kg	NC		NC			--		1.0E+00	mg/kg/day	
				ANTIMONY	NA	mg/kg	NC		NC			--		6.0E-05	mg/kg/day	
				ARSENIC	7.39	mg/kg	3.1E-08	mg/kg/day	1.5E+00	(mg/kg/day)-1	5.E-08	2.1E-06	mg/kg/day	3.0E-04	mg/kg/day	7.E-03
				CHROMIUM	20.7	mg/kg	NC		NC			--		1.3E-02	mg/kg/day	
				COBALT	2.18	mg/kg	NC		NC			--		3.0E-03	mg/kg/day	
				COPPER	92.4	mg/kg	NC		NC			--		1.0E-02	mg/kg/day	
				MANGANESE	69.8	mg/kg	NC		NC			--		5.6E-03	mg/kg/day	
				IRON	20400	mg/kg	NC		NC			--		7.0E-01	mg/kg/day	
				THALLIUM	1.68	mg/kg	NC		NC			--		8.0E-04	mg/kg/day	
				VANADIUM	29.1	mg/kg	NC		NC			--		1.8E-05	mg/kg/day	
			EXPOSURE ROUTE TOTAL								5.E-08					7.E-03
		EXPOSURE POINT TOTAL									4.E-07					4.E-01

TABLE G-42
CALCULATION OF CHEMICAL CANCER RISKS AND NON-CANCER HAZARDS -- REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	EXPOSURE ROUTE	CHEMICAL	EPC		CANCER RISK CALCULATIONS					NON-CANCER HAZARD CALCULATIONS				
					VALUE	UNITS	INTAKE/EXPOSURE CONCENTRATION		CSF/UNIT RISK		CANCER RISK	INTAKE/EXPOSURE CONCENTRATION		RfD/RfC (1)		HAZARD QUOTIENT
							VALUE	UNITS	VALUE	UNITS		VALUE	UNITS	VALUE	UNITS	
	EXPOSURE MEDIUM TOTAL										4.E-07					4.E-01
	AIR	DUST AT SITE	DUST INHALATION	1,1,2,2-TETRACHLOROETHANE	NA	mg/kg	--		5.8E-05	(ug/m3)-1				NA		
				1,2,3-TRICHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				1,2,4-TRICHLOROBENZENE	0.078	mg/kg	NC		NC			1.3E-07	ug/m3	2.0E+01	ug/m3	7.E-09
				1,2-CIS-DICHLOROETHYLENE	1.3	mg/kg	NC		NC			2.2E-06	ug/m3	NA		
				1,2-DICHLOROBENZENE	26	mg/kg	NC		NC			4.4E-05	ug/m3	2.0E+03	ug/m3	2.E-08
				1,2-DICHLOROETHANE	4.1	mg/kg	9.8E-08	ug/m3	2.6E-05	(ug/m3)-1	3.E-12	6.9E-06	ug/m3	7.0E+01	ug/m3	1.E-07
				1,2-DICHLOROPROPANE	NA	mg/kg	NC		NC					3.3E+01	ug/m3	
				1,3-DICHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				1,4-DICHLOROBENZENE	0.89	mg/kg	2.1E-08	ug/m3	1.1E-05	(ug/m3)-1	2.E-13	1.5E-06	ug/m3	2.0E+02	ug/m3	7.E-09
				BENZENE	12	mg/kg	2.9E-07	ug/m3	7.8E-06	(ug/m3)-1	2.E-12	2.0E-05	ug/m3	8.0E+01	ug/m3	3.E-07
				CHLOROBENZENE	6.7	mg/kg	NC		NC			1.1E-05	ug/m3	5.0E+02	ug/m3	2.E-08
				CYCLOHEXANE, METHYL-	NA	mg/kg	NC		NC					3.0E+03	ug/m3	
				ETHYLBENZENE	39	mg/kg	NC		NC			6.5E-05	ug/m3	9.0E+03	ug/m3	7.E-09
				METHYLENE CHLORIDE	32	mg/kg	7.7E-07	ug/m3	1.0E-08	(ug/m3)-1	8.E-15	5.4E-05	ug/m3	1.0E+03	ug/m3	5.E-08
				O-XYLENE	54	mg/kg	NC		NC			9.1E-05	ug/m3	4.0E+02	ug/m3	2.E-07
				P-ISOPROPYLTOLUENE	NA	mg/kg	NC		NC					NA		
				TETRACHLOROETHYLENE	NA	mg/kg	--		2.6E-07	(ug/m3)-1				4.0E+01	ug/m3	
				TOLUENE	270	mg/kg	NC		NC			4.5E-04	ug/m3	5.0E+03	ug/m3	9.E-08
				TRICHLOROETHYLENE	2.7	mg/kg	6.5E-08	ug/m3	4.1E-06	(ug/m3)-1	3.E-13	4.5E-06	ug/m3	5.4E+02	ug/m3	8.E-09
				XYLENES,TOTAL	170	mg/kg	NC		NC			2.9E-04	ug/m3	4.0E+02	ug/m3	7.E-07
				1,2,4,5 -TETRACHLOROBENZENE	NA	mg/kg	NC		NC					NA		
				2-METHYLNAPHTHALENE	0.37	mg/kg	NC		NC			6.2E-07	ug/m3	NA		
				BENZO(A)ANTHRACENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				BENZO(A)PYRENE	NA	mg/kg	--		1.1E-03	(ug/m3)-1				NA		
				BENZO(B)FLUORANTHENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				Biphenyl	0.83	mg/kg	NC		NC			1.4E-06	ug/m3	NA		
				DIBENZO(A,H)ANTHRACENE	NA	mg/kg	--		1.2E-03	(ug/m3)-1				NA		
				INDENO(1,2,3-CD)PYRENE	NA	mg/kg	--		1.1E-04	(ug/m3)-1				NA		
				NAPHTHALENE	NA	mg/kg	NC		NC					3.0E+00	ug/m3	
				ALUMINUM	7800	mg/kg	NC		NC			1.3E-02	ug/m3	5.0E+00	ug/m3	3.E-03
				ANTIMONY	NA	mg/kg	NC		NC					NA		
				ARSENIC	7.39	mg/kg	1.8E-07	ug/m3	4.3E-03	(ug/m3)-1	8.E-10	1.2E-05	ug/m3	1.5E-02	ug/m3	8.E-04
				CHROMIUM	20.7	mg/kg	NC		NC			3.5E-05	ug/m3	5.0E+00	ug/m3	7.E-06
				COBALT	2.18	mg/kg	5.2E-08	ug/m3	9.0E-03	(ug/m3)-1	5.E-10	3.7E-06	ug/m3	2.0E-02	ug/m3	2.E-04
				COPPER	92.4	mg/kg	NC		NC			1.6E-04	ug/m3	NA		
				MANGANESE	69.8	mg/kg	NC		NC			1.2E-04	ug/m3	5.0E-02	ug/m3	2.E-03
				IRON	20400	mg/kg	NC		NC			3.4E-02	ug/m3	NA		
				THALLIUM	1.68	mg/kg	NC		NC			2.8E-06	ug/m3	NA		
				VANADIUM	29.1	mg/kg	NC		NC			4.9E-05	ug/m3	1.0E-01	ug/m3	5.E-04
			EXPOSURE ROUTE TOTAL								1.E-09					6.E-03
		EXPOSURE POINT TOTAL									1.E-09					6.E-03
											TOTAL RECEPTOR RISK ACROSS ALL MEDIA					**TOTAL RECEPTOR HAZARD ACROSS ALL MEDIA**	**4.E-01**
											4.E-07					

NOTES:
(1) - Blank cells indicate that an RfD or RfC is not avalailable from the sources used to obtain dose-response data for this risk assessment.
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
NV - Not volatile; exposure route not complete for this chemical.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

ATTACHMENT H
RISK CALCULATION RAGS PART D TABLE 9S

Attachment H
List of Tables
CPS/Madison Superfund Site
Old Bridge, New Jersey

Table	Exposure Point	Receptor	Adolescent Trespasser Surface Soil - ingestion and dermal	Adolescent Trespasser Combined soil - ingestion and dermal	Adult Trespasser Combined soil - ingestion and dermal	Adult Trespasser Combined soil - ingestion and dermal	Outdoor Worker Surface Soil - ingestion and dermal, inhalation dust	Outdoor Worker Combined soil - ingestion and dermal, inhalation dust	Outdoor Worker Groundwater Ingestion	Indoor Worker Surface Soil - ingestion and dermal	Indoor Worker Combined soil - ingestion and dermal	Indoor Worker Groundwater Ingestion	Child Resident Surface Soil - ingestion and dermal	Child Resident Combined soil - ingestion and dermal	Child Resident Groundwater Ingestion, dermal, inhalation	Adult Resident Surface Soil - ingestion and dermal	Adult Resident Combined soil - ingestion and dermal	Adult Resident Groundwater Ingestion, dermal, inhalation	Construction Worker Surface Soil - ingestion and dermal, inhalation dust	Construction Worker Combined soil - ingestion and dermal, inhalation dust	Construction Worker Inhalation vapors trench	Construction Worker Groundwater Ingestion and dermal
H- 1	Area 1	Adolescent Trespasser	X																			
H- 2	Area 1	Adult Trespasser			X																	
H- 3	Area 1	Outdoor Worker					X		X													
H- 4	Area 1	Indoor Worker								X		X										
H- 5	Area 1	Child Resident											X		X							
H- 6	Area 1	Adult Resident														X		X				
H- 7	Area 2	Adolescent Trespasser	X																			
H- 8	Area 2	Adult Trespasser			X																	
H- 9	Area 2	Outdoor Worker					X		X													
H- 10	Area 2	Indoor Worker								X		X										
H- 11	Area 2	Child Resident											X		X							
H- 12	Area 2	Adult Resident														X		X				
H- 13	Area 3	Adolescent Trespasser	X																			
H- 14	Area 3	Adult Trespasser			X																	
H- 15	Area 3	Outdoor Worker					X		X													
H- 16	Area 3	Indoor Worker								X		X										
H- 17	Area 3	Child Resident											X		X							
H- 18	Area 3	Adult Resident														X		X				
H- 19	Area 1	Adolescent Trespasser		X																		
H- 20	Area 1	Adult Trespasser				X																
H- 21	Area 1	Outdoor Worker						X	X													
H- 22	Area 1	Indoor Worker									X	X										
H- 23	Area 1	Child Resident												X	X							
H- 24	Area 1	Adult Resident															X	X				
H- 25	Area 1	Construction Worker																		X	X	
H- 26	Area 2	Adolescent Trespasser		X																		
H- 27	Area 2	Adult Trespasser				X																
H- 28	Area 2	Outdoor Worker						X	X													
H- 29	Area 2	Indoor Worker									X	X										
H- 30	Area 2	Child Resident												X	X							
H- 31	Area 2	Adult Resident															X	X				
H- 32	Area 2	Construction Worker																		X	X	
H- 33	Area 3	Adolescent Trespasser		X																		
H- 34	Area 3	Adult Trespasser				X																
H- 35	Area 3	Outdoor Worker						X	X													
H- 36	Area 3	Indoor Worker									X	X										
H- 37	Area 3	Child Resident												X	X							
H- 38	Area 3	Adult Resident															X	X				
H- 39	Area 3	Construction Worker																		X	X	
H- 40	Sewer Line, Area 1	Construction Worker																		X	X	
H- 41	Sewer Line, Area 2	Construction Worker																		X	X	
H- 42	Sewer Line, Area 3	Construction Worker																		X	X	

TABLE H-1
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-2 FT)	1,1,2,2-TETRACHLOROETHANE	6.1E-09	NA	--	NA	6.1E-09	Respiratory	1.8E-05	NA	--	1.8E-05
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			6.2E-02	NA	--	6.2E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.2E-02	NA	5.5E-03	1.8E-02
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.4E-04	NA	--	7.4E-04
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	9.2E-04	NA	4.2E-04	1.3E-03
			1,2-DICHLOROETHANE	3.4E-09	NA	--	NA	3.4E-09		7.2E-05	NA	--	7.2E-05
			1,2-DICHLOROPROPANE	2.6E-09	NA	--	NA	2.6E-09	Liver	9.2E-06	NA	--	9.2E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.0E-04	NA	4.7E-05	1.5E-04
			1,4-DICHLOROBENZENE	1.4E-09	NA	6.3E-10	NA	2.0E-09	Endocrine	4.2E-05	NA	1.9E-05	6.2E-05
			BENZENE	5.9E-09	NA	--	NA	5.9E-09	Immune system /	3.1E-04	NA	--	3.1E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	1.5E-04	NA	--	1.5E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.9E-05	NA	--	4.9E-05
			METHYLENE CHLORIDE	1.2E-09	NA	--	NA	1.2E-09	Liver	4.9E-04	NA	--	4.9E-04
			O-XYLENE	NC	NA	NC	NA		General Toxicity	3.5E-05	NA	--	3.5E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.2E-11	NA	--	NA	6.2E-11	Liver	5.7E-05	NA	--	5.7E-05
			TOLUENE	NC	NA	NC	NA		Kidney	1.1E-03	NA	--	1.1E-03
			TRICHLOROETHYLENE - Kidney	1.4E-09	NA	--	NA	1.4E-09		--	NA	--	
			TRICHLOROETHYLENE - Liver & NHL	2.4E-09	NA	--	NA	2.4E-09	Liver / Kidney	1.5E-03	NA	--	1.5E-03
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.4E-04	NA	--	1.4E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			3.2E-03	NA	1.5E-03	4.7E-03
			BENZO(A)ANTHRACENE	6.3E-09	NA	3.7E-09	NA	1.0E-08	Kidney	7.3E-07	NA	4.3E-07	1.2E-06
			BENZO(A)PYRENE	6.8E-08	NA	4.1E-08	NA	1.1E-07	Kidney	7.9E-07	NA	4.7E-07	1.3E-06
			BENZO(B)FLUORANTHENE	8.6E-09	NA	5.1E-09	NA	1.4E-08	Kidney	9.9E-07	NA	5.9E-07	1.6E-06
			Biphenyl	NC	NA	NC	NA		Kidney	4.6E-04	NA	2.1E-04	6.7E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.5E-05	NA	9.2E-06	2.5E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.1E-03	NA	--	3.1E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	1.3E-03	NA	--	1.3E-03
			ARSENIC	1.6E-07	NA	3.7E-08	NA	2.0E-07	Skin	4.2E-03	NA	9.7E-04	5.2E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.3E-06	NA	--	8.3E-06
			COBALT	NC	NA	NC	NA		Endocrine	4.3E-03	NA	--	4.3E-03
			COPPER	NC	NA	NC	NA		Undetermined	8.9E-04	NA	--	8.9E-04
			MERCURY	NC	NA	NC	NA		Immune system	9.0E-04	NA	--	9.0E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	5.2E-02	NA	--	5.2E-02
			VANADIUM	NC	NA	NC	NA		Kidney	3.7E-03	NA	--	3.7E-03
			CHEMICAL TOTAL	2.7E-07	--	8.8E-08	--	4E-07		1.5E-01	--	8.7E-03	2E-01
		EXPOSURE POINT TOTAL						4E-07					2E-01
	EXPOSURE MEDIUM TOTAL							4E-07					2E-01
RECEPTOR TOTAL								**4E-07**					**2E-01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**2E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/2015
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**1.5E-03**
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	--
TOTAL ENDOCRINE HI =	**2.2E-02**
	--
	--
TOTAL HEMATOLOGICAL HI =	**1.6E-03**
TOTAL IMMUNE SYSTEM HI =	**1.2E-03**
TOTAL KIDNEY HI =	**7.1E-03**
TOTAL LIVER HI =	**3.8E-03**
	--
TOTAL NERVOUS SYSTEM HI =	**3.1E-03**
TOTAL NOAEL HI =	**1.2E-01**
	--
TOTAL SKIN HI =	**5.2E-03**
TOTAL RESPIRATORY HI =	**1.8E-05**

TABLE H-2
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-2 FT)	1,1,2,2-TETRACHLOROETHANE	4.8E-09	NA	--	NA	4.8E-09	Respiratory	7.1E-06	NA	--	7.1E-06
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.4E-02	NA	--	2.4E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	4.8E-03	NA	1.9E-03	6.7E-03
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	2.9E-04	NA	--	2.9E-04
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-04	NA	1.5E-04	5.1E-04
			1,2-DICHLOROETHANE	2.7E-09	NA	--	NA	2.7E-09		2.8E-05	NA	--	2.8E-05
			1,2-DICHLOROPROPANE	2.0E-09	NA	--	NA	2.0E-09	Liver	3.7E-06	NA	--	3.7E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	4.0E-05	NA	1.6E-05	5.6E-05
			1,4-DICHLOROBENZENE	1.1E-09	NA	4.4E-10	NA	1.5E-09	Endocrine	1.7E-05	NA	6.8E-06	2.3E-05
			BENZENE	4.7E-09	NA	--	NA	4.7E-09	Immune system /	1.2E-04	NA	--	1.2E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	5.8E-05	NA	--	5.8E-05
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.0E-05	NA	--	2.0E-05
			METHYLENE CHLORIDE	4.0E-10	NA	--	NA	4.0E-10	Liver	1.9E-04	NA	--	1.9E-04
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.4E-05	NA	--	1.4E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.9E-11	NA	--	NA	4.9E-11	Liver	2.3E-05	NA	--	2.3E-05
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-04	NA	--	4.5E-04
			TRICHLOROETHYLENE	2.4E-09	NA	--	NA	2.4E-09	Liver / Kidney	6.0E-04	NA	--	6.0E-04
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	5.4E-05	NA	--	5.4E-05
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			1.3E-03	NA	5.2E-04	1.8E-03
			BENZO(A)ANTHRACENE	2.2E-09	NA	1.1E-09	NA	3.3E-09	Kidney	2.9E-07	NA	1.5E-07	4.4E-07
			BENZO(A)PYRENE	2.3E-08	NA	1.2E-08	NA	3.6E-08	Kidney	3.1E-07	NA	1.6E-07	4.7E-07
			BENZO(B)FLUORANTHENE	3.0E-09	NA	1.6E-09	NA	4.5E-09	Kidney	3.9E-07	NA	2.1E-07	6.0E-07
			Biphenyl	NC	NA	NC	NA		Kidney	1.8E-04	NA	7.4E-05	2.6E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	6.1E-06	NA	3.2E-06	9.3E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.2E-03	NA	--	1.2E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	5.1E-04	NA	--	5.1E-04
			ARSENIC	1.3E-07	NA	2.6E-08	NA	1.5E-07	Skin	1.7E-03	NA	3.4E-04	2.0E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.3E-06	NA	--	3.3E-06
			COBALT	NC	NA	NC	NA		Endocrine	1.7E-03	NA	--	1.7E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.5E-04	NA	--	3.5E-04
			MERCURY	NC	NA	NC	NA		Immune system	3.6E-04	NA	--	3.6E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	2.1E-02	NA	--	2.1E-02
			VANADIUM	NC	NA	NC	NA		Kidney	1.5E-03	NA	--	1.5E-03
			CHEMICAL TOTAL	1.8E-07	--	4.1E-08	--	2E-07		6.1E-02	--	3.0E-03	6E-02
		EXPOSURE POINT TOTAL						2E-07					6E-02
	EXPOSURE MEDIUM TOTAL							2E-07					6E-02
RECEPTOR TOTAL								**2E-07**					**6E-02**
							TOTAL RISK ACROSS ALL MEDIA	**2E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**6E-02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**5.9E-04**
	--
	--
TOTAL ENDOCRINE HI =	**8.4E-03**
	--
	--
TOTAL HEMATOLOGICAL HI =	**6.3E-04**
TOTAL IMMUNE SYSTEM HI =	**4.8E-04**
TOTAL KIDNEY HI =	**2.8E-03**
TOTAL LIVER HI =	**1.5E-03**
	--
TOTAL NERVOUS SYSTEM HI =	**1.2E-03**
TOTAL NOAEL HI =	**4.8E-02**
	--
TOTAL SKIN HI =	**2.0E-03**
TOTAL RESPIRATORY HI =	**7.1E-06**

TABLE H-3
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02

TABLE H-3
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
		EXPOSURE POINT TOTAL						0E+00					0E+00
SOIL	SOIL	AREA 1 (0-2 FT)	1,1,2,2-TETRACHLOROETHANE	4.9E-08	NA	--	NA	4.9E-08	Respiratory	3.4E-05	NA	--	3.4E-05
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.2E-01	NA	--	1.2E-01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.3E-02	NA	1.5E-02	3.8E-02
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.4E-03	NA	--	1.4E-03
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.8E-03	NA	1.2E-03	2.9E-03
			1,2-DICHLOROETHANE	2.7E-08	NA	--	NA	2.7E-08		1.4E-04	NA	--	1.4E-04
			1,2-DICHLOROPROPANE	2.0E-08	NA	--	NA	2.0E-08	Liver	1.8E-05	NA	--	1.8E-05
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.9E-04	NA	1.3E-04	3.2E-04
			1,4-DICHLOROBENZENE	1.1E-08	NA	7.2E-09	NA	1.8E-08	Endocrine	8.0E-05	NA	5.3E-05	1.3E-04
			BENZENE	4.7E-08	NA	--	NA	4.7E-08	Immune system /	6.0E-04	NA	--	6.0E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	2.8E-04	NA	--	2.8E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	9.4E-05	NA	--	9.4E-05
			METHYLENE CHLORIDE	4.0E-09	NA	--	NA	4.0E-09	Liver	9.4E-04	NA	--	9.4E-04
			O-XYLENE	NC	NA	NC	NA		General Toxicity	6.7E-05	NA	--	6.7E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.9E-10	NA	--	NA	4.9E-10	Liver	1.1E-04	NA	--	1.1E-04
			TOLUENE	NC	NA	NC	NA		Kidney	2.2E-03	NA	--	2.2E-03
			TRICHLOROETHYLENE	2.4E-08	NA	--	NA	2.4E-08	Liver / Kidney	2.9E-03	NA	--	2.9E-03
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	2.6E-04	NA	--	2.6E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			6.2E-03	NA	4.1E-03	1.0E-02
			BENZO(A)ANTHRACENE	2.2E-08	NA	1.9E-08	NA	4.0E-08	Kidney	1.4E-06	NA	1.2E-06	2.6E-06
			BENZO(A)PYRENE	2.3E-07	NA	2.0E-07	NA	4.4E-07	Kidney	1.5E-06	NA	1.3E-06	2.8E-06
			BENZO(B)FLUORANTHENE	3.0E-08	NA	2.5E-08	NA	5.5E-08	Kidney	1.9E-06	NA	1.6E-06	3.5E-06
			Biphenyl	NC	NA	NC	NA		Kidney	8.8E-04	NA	5.8E-04	1.5E-03
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	2.9E-05	NA	2.5E-05	5.4E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.9E-03	NA	--	5.9E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	2.5E-03	NA	--	2.5E-03
			ARSENIC	1.3E-06	NA	4.3E-07	NA	1.7E-06	Skin	8.0E-03	NA	2.7E-03	1.1E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.6E-05	NA	--	1.6E-05
			COBALT	NC	NA	NC	NA		Endocrine	8.2E-03	NA	--	8.2E-03
			COPPER	NC	NA	NC	NA		Undetermined	1.7E-03	NA	--	1.7E-03
			MERCURY	NC	NA	NC	NA		Immune system	1.7E-03	NA	--	1.7E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	1.0E-01	NA	--	1.0E-01
			VANADIUM	NC	NA	NC	NA		Kidney	7.1E-03	NA	--	7.1E-03
			CHEMICAL TOTAL	1.8E-06	--	6.8E-07	--	2E-06		2.9E-01	--	2.4E-02	3E-01
		EXPOSURE POINT TOTAL						2E-06					3E-01
	EXPOSURE MEDIUM TOTAL							2E-06					3E-01

TABLE H-3
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	AIR	DUST AT SITE	1,1,2,2-TETRACHLOROETHANE	NA	2.4E-12	NA	NA	2.4E-12		NA	--	NA	
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	2.0E-05	NA	2.0E-05
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	1.4E-07	NA	1.4E-07
			1,2-DICHLOROETHANE	NA	1.3E-12	NA	NA	1.3E-12	Nervous System	NA	2.0E-08	NA	2.0E-08
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	6.8E-08	NA	6.8E-08
			1,3-DICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,4-DICHLOROBENZENE	NA	3.8E-12	NA	NA	3.8E-12	Developmental	NA	1.2E-09	NA	1.2E-09
			BENZENE	NA	1.1E-12	NA	NA	1.1E-12	Immune system	NA	1.4E-08	NA	1.4E-08
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	1.9E-08	NA	1.9E-08
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA			NA	1.1E-08	NA	1.1E-08
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	1.6E-09	NA	1.6E-09
			METHYLENE CHLORIDE	NA	3.4E-15	NA	NA	3.4E-15	Liver	NA	1.6E-09	NA	1.6E-09
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	2.3E-08	NA	2.3E-08
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA			NA	--	NA	
			TETRACHLOROETHYLENE	NA	1.0E-14	NA	NA	1.0E-14	Nervous System	NA	2.8E-09	NA	2.8E-09
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	6.0E-09	NA	6.0E-09
			TRICHLOROETHYLENE	NA	3.6E-13	NA	NA	3.6E-13	Nervous System	NA	1.2E-07	NA	1.2E-07
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	8.8E-08	NA	8.8E-08
			1,2,4,5-TETRACHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)ANTHRACENE	NA	5.6E-13	NA	NA	5.6E-13		NA	--	NA	
			BENZO(A)PYRENE	NA	6.1E-12	NA	NA	6.1E-12		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	7.7E-13	NA	NA	7.7E-13		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	3.3E-08	NA	3.3E-08
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	2.0E-04	NA	2.0E-04
			ANTIMONY	NA	NC	NA	NA			NA	--	NA	
			ARSENIC	NA	1.1E-09	NA	NA	1.1E-09	Developmental / Cardiovascular / Nervous system	NA	4.6E-05	NA	4.6E-05
			CHROMIUM	NA	NC	NA	NA			NA	--	NA	
			COBALT	NA	1.4E-09	NA	NA	1.4E-09	Respiratory	NA	7.0E-05	NA	7.0E-05
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MERCURY	NA	NC	NA	NA			NA	2.9E-07	NA	2.9E-07
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	6.1E-05	NA	6.1E-05
			CHEMICAL TOTAL	--	2.4E-09	--	--	2E-09		--	4.0E-04	--	4E-04
		EXPOSURE POINT TOTAL						2E-09					4E-04
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
TOTAL CARDIOVASCULAR HI =	**4.6E-05**
TOTAL DEVELOPMENTAL HI =	**4.6E-05**
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.2E+01**
	--
TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**8.7E-03**

TABLE H-4
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01

TABLE H-4
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
SOIL	SOIL	AREA 1 (0-2 FT)	1,1,2,2-TETRACHLOROETHANE	2.7E-08	NA	--	NA	2.7E-08	Respiratory	1.9E-05	NA	--	1.9E-05
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			6.5E-02	NA	--	6.5E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.3E-02	NA	5.9E-03	1.9E-02
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.8E-04	NA	--	7.8E-04
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	9.8E-04	NA	4.5E-04	1.4E-03
			1,2-DICHLOROETHANE	1.5E-08	NA	--	NA	1.5E-08		7.6E-05	NA	--	7.6E-05
			1,2-DICHLOROPROPANE	1.1E-08	NA	--	NA	1.1E-08	Liver	9.8E-06	NA	--	9.8E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-04	NA	4.9E-05	1.6E-04
			1,4-DICHLOROBENZENE	6.0E-09	NA	2.8E-09	NA	8.8E-09	Endocrine	4.5E-05	NA	2.1E-05	6.5E-05
			BENZENE	2.6E-08	NA	--	NA	2.6E-08	Immune system /	3.3E-04	NA	--	3.3E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	1.6E-04	NA	--	1.6E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	5.2E-05	NA	--	5.2E-05
			METHYLENE CHLORIDE	2.2E-09	NA	--	NA	2.2E-09	Liver	5.2E-04	NA	--	5.2E-04
			O-XYLENE	NC	NA	NC	NA		General Toxicity	3.7E-05	NA	--	3.7E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	2.7E-10	NA	--	NA	2.7E-10	Liver	6.1E-05	NA	--	6.1E-05
			TOLUENE	NC	NA	NC	NA		Kidney	1.2E-03	NA	--	1.2E-03
			TRICHLOROETHYLENE	1.3E-08	NA	--	NA	1.3E-08	Liver / Kidney	1.6E-03	NA	--	1.6E-03
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.4E-04	NA	--	1.4E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			3.4E-03	NA	1.6E-03	5.0E-03
			BENZO(A)ANTHRACENE	1.2E-08	NA	7.2E-09	NA	1.9E-08	Kidney	7.7E-07	NA	4.6E-07	1.2E-06
			BENZO(A)PYRENE	1.3E-07	NA	7.8E-08	NA	2.1E-07	Kidney	8.3E-07	NA	5.0E-07	1.3E-06
			BENZO(B)FLUORANTHENE	1.6E-08	NA	9.9E-09	NA	2.6E-08	Kidney	1.1E-06	NA	6.3E-07	1.7E-06
			Biphenyl	NC	NA	NC	NA		Kidney	4.9E-04	NA	2.3E-04	7.2E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.6E-05	NA	9.8E-06	2.6E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.3E-03	NA	--	3.3E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	1.4E-03	NA	--	1.4E-03
			ARSENIC	7.2E-07	NA	1.7E-07	NA	8.8E-07	Skin	4.5E-03	NA	1.0E-03	5.5E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.8E-06	NA	--	8.8E-06
			COBALT	NC	NA	NC	NA		Endocrine	4.6E-03	NA	--	4.6E-03
			COPPER	NC	NA	NC	NA		Undetermined	9.5E-04	NA	--	9.5E-04
			MERCURY	NC	NA	NC	NA		Immune system	9.5E-04	NA	--	9.5E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	5.6E-02	NA	--	5.6E-02
			VANADIUM	NC	NA	NC	NA		Kidney	3.9E-03	NA	--	3.9E-03
			CHEMICAL TOTAL	9.8E-07	--	2.6E-07	--	1E-06		1.6E-01	--	9.3E-03	2E-01
		EXPOSURE POINT TOTAL						1E-06					2E-01
	EXPOSURE MEDIUM TOTAL							1E-06					2E-01
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

TABLE H-4
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
												TOTAL GENERAL TOXICITY HI =	3.6E-01
													--
													--
												TOTAL ENDOCRINE HI =	3.0E+00
												TOTAL EYE HI =	5.1E-03
												TOTAL GI SYSTEM HI =	1.8E-02
												TOTAL HEMATOLOGICAL HI =	1.1E+00
												TOTAL IMMUNE SYSTEM HI =	9.2E-01
												TOTAL KIDNEY HI =	2.2E+00
												TOTAL LIVER HI =	9.2E+00
													--
												TOTAL NERVOUS SYSTEM HI =	6.0E-01
												TOTAL NOAEL HI =	3.1E+01
													--
												TOTAL SKIN HI =	8.4E-01
												TOTAL RESPIRATORY HI =	8.6E-03

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TABLE H-5
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	2.9E-06	NA	3.5E-07	NA	3.2E-06	Respiratory	8.4E-03	NA	1.0E-03	9.4E-03
			1,1,2-TRICHLOROETHANE	1.9E-07	NA	1.7E-08	NA	2.0E-07	Hematological	9.5E-03	NA	8.6E-04	1.0E-02
			1,1-DICHLOROETHANE	6.8E-08	NA	5.3E-09	NA	7.3E-08	Undetermined	7.0E-04	NA	5.5E-05	7.5E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.5E+01	NA	--	2.5E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.3E+00	NA	4.1E+00	7.4E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.1E+00	NA	--	7.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-01	NA	2.3E-01	5.8E-01
			1,2-DICHLOROETHANE	1.2E-05	NA	5.6E-07	NA	1.2E-05		2.5E-01	NA	1.2E-02	2.6E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	5.1E-01	NA	4.5E-02	5.5E-01
			1,2-DICHLOROPROPANE	4.0E-06	NA	3.9E-07	NA	4.4E-06	Liver	1.5E-02	NA	1.4E-03	1.6E-02
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	8.5E-02	NA	--	8.5E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	6.1E-02	NA	--	6.1E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.9E-01	NA	6.2E-01	1.3E+00
			1,4-DICHLOROBENZENE	7.8E-06	NA	5.0E-06	NA	1.3E-05	Endocrine	2.4E-01	NA	1.6E-01	4.0E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			4.7E-01	NA	--	4.7E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			3.4E-01	NA	--	3.4E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.1E-04	NA	1.7E-05	NA	1.3E-04	Immune system /	5.8E+00	NA	8.9E-01	6.7E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.8E+00	NA	1.7E+00	6.5E+00
			CHLOROFORM	9.9E-08	NA	8.7E-09	NA	1.1E-07	Liver	3.7E-03	NA	3.3E-04	4.1E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.7E-01	NA	1.6E-01	4.2E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	5.6E-03	NA	--	5.6E-03
			METHYLENE CHLORIDE	2.0E-05	NA	7.6E-07	NA	2.1E-05	Liver	3.6E+00	NA	1.4E-01	3.8E+00
			METHYL-T-BUTYL ETHER	1.4E-07	NA	--	NA	1.4E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	3.3E-02	NA	2.1E-02	5.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.0E-01	NA	--	1.0E-01
			P-CHLOROTOLUENE	NC	NA	NC	NA			5.7E-01	NA	--	5.7E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.6E-09	NA	9.8E-07	NA	9.9E-07	Liver	6.1E-03	NA	3.5E-03	9.6E-03
			TOLUENE	NC	NA	NC	NA		Kidney	2.9E+00	NA	1.0E+00	3.9E+00
			TRICHLOROETHYLENE	1.7E-06	NA	--	NA	1.7E-06		--	NA	--	
			TRICHLOROETHYLENE	1.3E-06	NA	--	NA	1.3E-06	Liver / Kidney	8.2E-01	NA	--	8.2E-01
			VINYL CHLORIDE	3.6E-04	NA	1.9E-05	NA	3.8E-04	Liver	9.9E-01	NA	5.4E-02	1.0E+00
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.1E-01	NA	--	1.1E-01
			1,4-DIOXANE	5.4E-06	NA	2.0E-08	NA	5.4E-06	Liver	2.1E-02	NA	7.7E-05	2.1E-02
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	5.2E-02	NA	7.4E-03	6.0E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.4E-02	NA	--	1.4E-02
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	1.5E-05	NA	--	NA	1.5E-05		4.3E+00	NA	--	4.3E+00
			Biphenyl	NC	NA	NC	NA		Kidney	6.9E-04	NA	--	6.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	3.9E-07	NA	5.8E-07	NA	9.8E-07	Liver	1.6E-02	NA	2.4E-02	4.1E-02
			ALDRIN	7.4E-07	NA	6.5E-08	NA	8.0E-07	Liver	1.7E-02	NA	1.5E-03	1.8E-02
			HEPTACHLOR EPOXIDE	5.0E-07	NA	--	NA	5.0E-07	Liver	4.9E-02	NA	--	4.9E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.5E+00	NA	--	3.5E+00
			ARSENIC	2.1E-04	NA	1.4E-06	NA	2.1E-04	Skin	5.3E+00	NA	3.5E-02	5.4E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	1.3E+00	NA	5.9E-02	1.4E+00
			BARIUM	NC	NA	NC	NA		Kidney	1.2E-01	NA	1.1E-02	1.3E-01
			BERYLLIUM	NC	NA	NC	NA		GI system	1.2E-01	NA	1.1E-01	2.3E-01
			CADMIUM	NC	NA	NC	NA		Kidney	5.2E+00	NA	1.4E+00	6.5E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.0E-02	NA	2.0E-02	4.0E-02
			COBALT	NC	NA	NC	NA		Endocrine	1.6E+01	NA	--	1.6E+01
			COPPER	NC	NA	NC	NA		Undetermined	8.5E+01	NA	5.6E-01	8.5E+01
			IRON	NC	NA	NC	NA			3.1E+01	NA	--	3.1E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	3.5E-01	NA	5.7E-02	4.1E-01
			MERCURY	NC	NA	NC	NA		Immune system	1.9E-01	NA	1.7E-02	2.0E-01
			NICKEL	NC	NA	NC	NA		General Toxicity	7.7E-01	NA	2.5E-02	7.9E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	9.5E-02	NA	6.3E-04	9.6E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	3.3E-02	NA	3.3E-03	3.7E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	5.0E+01	NA	3.3E-01	5.1E+01
			VANADIUM	NC	NA	NC	NA		Kidney	5.1E+00	NA	1.3E+00	6.4E+00
			ZINC	NC	NA	NC	NA		Liver	4.8E+01	NA	1.9E-01	4.8E+01
			CHEMICAL TOTAL	7.4E-04	--	4.6E-05	--	8E-04		3.1E+02	--	1.3E+01	3E+02
		EXPOSURE POINT TOTAL						8E-04					3E+02
	EXPOSURE MEDIUM TOTAL							8E-04					3E+02

TABLE H-5
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.7E-05	NA	NA	2.7E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.8E-06	NA	NA	1.8E-06		NA	6.7E+00	NA	6.7E+00
			1,1-DICHLOROETHANE	NA	7.2E-07	NA	NA	7.2E-07	Kidney	NA	1.1E-02	NA	1.1E-02
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	5.2E+02	NA	5.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	8.6E+00	NA	8.6E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	5.4E+00	NA	5.4E+00
			1,2-DICHLOROETHANE	NA	1.3E-04	NA	NA	1.3E-04	Nervous System	NA	8.1E+00	NA	8.1E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	1.2E+01	NA	1.2E+01
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	1.1E+00	NA	1.1E+00
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	5.2E-04	NA	NA	5.2E-04	Developmental	NA	6.9E-01	NA	6.9E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.8E-04	NA	NA	5.8E-04	Immune system	NA	2.9E+01	NA	2.9E+01
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	6.7E+01	NA	6.7E+01
			CHLOROFORM	NA	2.8E-06	NA	NA	2.8E-06	Liver	NA	1.5E-02	NA	1.5E-02
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	8.7E-01	NA	8.7E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	4.2E-06	NA	NA	4.2E-06	Liver	NA	1.5E+00	NA	1.5E+00
			METHYL-T-BUTYL ETHER	NA	6.2E-07	NA	NA	6.2E-07	Liver / Kidney	NA	9.3E-03	NA	9.3E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	6.7E+00	NA	6.7E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	6.7E+00	NA	6.7E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.9E-08	NA	NA	2.9E-08	Nervous System	NA	3.2E-02	NA	3.2E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	1.6E+00	NA	1.6E+00
			TRICHLOROETHYLENE	NA	6.9E-06	NA	NA	6.9E-06		NA	--	NA	
			TRICHLOROETHYLENE	NA	4.0E-06	NA	NA	4.0E-06	Nervous System	NA	7.6E+00	NA	7.6E+00
			VINYL CHLORIDE	NA	9.3E-05	NA	NA	9.3E-05	Liver	NA	1.2E+00	NA	1.2E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	8.2E+00	NA	8.2E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system /				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	5.0E+00	NA	5.0E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.4E-03	--	--	1E-03		--	6.9E+02	--	7E+02

TABLE H-5
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
		EXPOSURE POINT TOTAL						1E-03					7E+02
SOIL	SOIL	AREA 1 (0-2 FT)	1,1,2,2-TETRACHLOROETHANE	1.7E-07	NA	--	NA	1.7E-07	Respiratory	4.9E-04	NA	--	4.9E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.7E+00	NA	--	1.7E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.3E-01	NA	9.3E-02	4.3E-01
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	2.0E-02	NA	--	2.0E-02
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.6E-02	NA	7.1E-03	3.3E-02
			1,2-DICHLOROETHANE	9.3E-08	NA	--	NA	9.3E-08		2.0E-03	NA	--	2.0E-03
			1,2-DICHLOROPROPANE	7.1E-08	NA	--	NA	7.1E-08	Liver	2.6E-04	NA	--	2.6E-04
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.8E-03	NA	7.8E-04	3.6E-03
			1,4-DICHLOROBENZENE	3.8E-08	NA	1.1E-08	NA	4.8E-08	Endocrine	1.2E-03	NA	3.3E-04	1.5E-03
			BENZENE	1.6E-07	NA	--	NA	1.6E-07	Immune system /	8.7E-03	NA	--	8.7E-03
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.1E-03	NA	--	4.1E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.4E-03	NA	--	1.4E-03
			METHYLENE CHLORIDE	7.4E-08	NA	--	NA	7.4E-08	Liver	1.4E-02	NA	--	1.4E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	9.7E-04	NA	--	9.7E-04
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.7E-09	NA	--	NA	1.7E-09	Liver	1.6E-03	NA	--	1.6E-03
			TOLUENE	NC	NA	NC	NA		Kidney	3.2E-02	NA	--	3.2E-02
			TRICHLOROETHYLENE	8.8E-08	NA	--	NA	8.8E-08		--	NA	--	
			TRICHLOROETHYLENE	6.6E-08	NA	--	NA	6.6E-08	Liver / Kidney	4.2E-02	NA	--	4.2E-02
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	3.7E-03	NA	--	3.7E-03
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			8.9E-02	NA	2.5E-02	1.1E-01
			BENZO(A)ANTHRACENE	4.0E-07	NA	1.5E-07	NA	5.4E-07	Kidney	2.0E-05	NA	7.3E-06	2.7E-05
			BENZO(A)PYRENE	4.3E-06	NA	1.6E-06	NA	5.9E-06	Kidney	2.2E-05	NA	7.9E-06	3.0E-05
			BENZO(B)FLUORANTHENE	5.5E-07	NA	2.0E-07	NA	7.5E-07	Kidney	2.7E-05	NA	1.0E-05	3.7E-05
			Biphenyl	NC	NA	NC	NA		Kidney	1.3E-02	NA	3.6E-03	1.6E-02
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	4.3E-04	NA	1.5E-04	5.8E-04
			ALUMINUM	NC	NA	NC	NA		Nervous System	8.6E-02	NA	--	8.6E-02
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	3.6E-02	NA	--	3.6E-02
			ARSENIC	4.5E-06	NA	6.3E-07	NA	5.1E-06	Skin	1.2E-01	NA	1.6E-02	1.3E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.3E-04	NA	--	2.3E-04
			COBALT	NC	NA	NC	NA		Endocrine	1.2E-01	NA	--	1.2E-01
			COPPER	NC	NA	NC	NA		Undetermined	2.5E-02	NA	--	2.5E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.5E-02	NA	--	2.5E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	1.5E+00	NA	--	1.5E+00
			VANADIUM	NC	NA	NC	NA		Kidney	1.0E-01	NA	--	1.0E-01
			CHEMICAL TOTAL	1.1E-05	--	2.6E-06	--	1E-05		4.3E+00	--	1.5E-01	4E+00
		EXPOSURE POINT TOTAL						1E-05					4E+00
	EXPOSURE MEDIUM TOTAL							1E-05					4E+00

RECEPTOR TOTAL	**2E-03**		**1E+03**
TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**	**1E+03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**7.9E+00**
	--
TOTAL DEVELOPMENTAL HI =	**1.6E+00**
TOTAL ENDOCRINE HI =	**2.4E+01**
TOTAL EYE HI =	**3.7E-02**
TOTAL GI SYSTEM HI =	**2.3E-01**
TOTAL HEMATOLOGICAL HI =	**8.2E+00**
TOTAL IMMUNE SYSTEM HI =	**3.6E+01**
TOTAL KIDNEY HI =	**1.8E+01**
TOTAL LIVER HI =	**6.6E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**3.6E+01**
TOTAL NOAEL HI =	**8.1E+02**
	--
TOTAL SKIN HI =	**5.6E+00**
TOTAL RESPIRATORY HI =	**1.8E+01**

TABLE H-6
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	4.9E-06	NA	6.3E-07	NA	5.6E-06	Respiratory	3.6E-03	NA	4.6E-04	4.1E-03
			1,1,2-TRICHLOROETHANE	3.2E-07	NA	3.0E-08	NA	3.5E-07	Hematological	4.1E-03	NA	3.8E-04	4.4E-03
			1,1-DICHLOROETHANE	1.2E-07	NA	9.2E-09	NA	1.3E-07	Undetermined	3.0E-04	NA	2.4E-05	3.2E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.1E+01	NA	--	1.1E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.4E+00	NA	1.8E+00	3.2E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	3.0E+00	NA	--	3.0E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.5E-01	NA	1.0E-01	2.5E-01
			1,2-DICHLOROETHANE	2.0E-05	NA	9.7E-07	NA	2.1E-05		1.1E-01	NA	5.2E-03	1.1E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.2E-01	NA	1.9E-02	2.4E-01
			1,2-DICHLOROPROPANE	6.9E-06	NA	6.9E-07	NA	7.6E-06	Liver	6.2E-03	NA	6.2E-04	6.9E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	3.6E-02	NA	--	3.6E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	2.6E-02	NA	--	2.6E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.0E-01	NA	2.7E-01	5.7E-01
			1,4-DICHLOROBENZENE	1.3E-05	NA	9.0E-06	NA	2.2E-05	Endocrine	1.0E-01	NA	6.9E-02	1.7E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			2.0E-01	NA	--	2.0E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			1.5E-01	NA	--	1.5E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.9E-04	NA	2.9E-05	NA	2.2E-04	Immune system /	2.5E+00	NA	3.8E-01	2.9E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	2.1E+00	NA	7.4E-01	2.8E+00
			CHLOROFORM	1.7E-07	NA	1.5E-08	NA	1.9E-07	Liver	1.6E-03	NA	1.5E-04	1.7E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.1E-01	NA	6.9E-02	1.8E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	2.4E-03	NA	--	2.4E-03
			METHYLENE CHLORIDE	6.4E-06	NA	2.4E-07	NA	6.6E-06	Liver	1.6E+00	NA	5.9E-02	1.6E+00
			METHYL-T-BUTYL ETHER	2.3E-07	NA	--	NA	2.3E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.4E-02	NA	9.2E-03	2.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.4E-02	NA	--	4.4E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			2.4E-01	NA	--	2.4E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.1E-08	NA	1.7E-06	NA	1.8E-06	Liver	2.6E-03	NA	1.6E-03	4.2E-03
			TOLUENE	NC	NA	NC	NA		Kidney	1.3E+00	NA	4.4E-01	1.7E+00
			TRICHLOROETHYLENE	2.8E-06	NA	--	NA	2.8E-06	Liver / Kidney	3.5E-01	NA	5.9E-02	4.1E-01
			VINYL CHLORIDE	3.2E-04	NA	--	NA	3.2E-04	Liver	4.3E-01	NA	--	4.3E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.8E-02	NA	--	4.8E-02
			1,4-DIOXANE	9.3E-06	NA	3.4E-08	NA	9.3E-06	Liver	9.1E-03	NA	3.3E-05	9.1E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	2.2E-02	NA	3.3E-03	2.6E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.2E-03	NA	--	6.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	2.5E-05	NA	--	NA	2.5E-05		1.8E+00	NA	--	1.8E+00
			Biphenyl	NC	NA	NC	NA		Kidney	2.9E-04	NA	--	2.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.7E-07	NA	1.0E-06	NA	1.7E-06	Liver	7.0E-03	NA	1.1E-02	1.8E-02
			ALDRIN	1.3E-06	NA	1.2E-07	NA	1.4E-06	Liver	7.2E-03	NA	6.6E-04	7.9E-03
			HEPTACHLOR EPOXIDE	8.5E-07	NA	--	NA	8.5E-07	Liver	2.1E-02	NA	--	2.1E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E+00	NA	--	1.5E+00
			ARSENIC	3.5E-04	NA	1.8E-06	NA	3.6E-04	Skin	2.3E+00	NA	1.2E-02	2.3E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	5.7E-01	NA	2.0E-02	5.9E-01
			BARIUM	NC	NA	NC	NA		Kidney	5.0E-02	NA	3.7E-03	5.3E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	5.1E-02	NA	3.8E-02	8.9E-02
			CADMIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.6E-01	2.7E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.5E-03	NA	6.8E-03	1.5E-02
			COBALT	NC	NA	NC	NA		Endocrine	6.8E+00	NA	--	6.8E+00
			COPPER	NC	NA	NC	NA		Undetermined	3.6E+01	NA	1.9E-01	3.6E+01
			IRON	NC	NA	NC	NA			1.3E+01	NA	--	1.3E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	1.5E-01	NA	1.9E-02	1.7E-01
			MERCURY	NC	NA	NC	NA		Immune system	7.9E-02	NA	5.9E-03	8.5E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	3.3E-01	NA	8.6E-03	3.4E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	4.1E-02	NA	2.1E-04	4.1E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	1.4E-02	NA	1.1E-03	1.5E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	2.2E+01	NA	1.1E-01	2.2E+01
			VANADIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.4E-01	2.6E+00
			ZINC	NC	NA	NC	NA		Liver	2.0E+01	NA	6.4E-02	2.0E+01
			CHEMICAL TOTAL	9.5E-04	--	4.5E-05	--	1E-03		1.3E+02	--	5.5E+00	1E+02
		EXPOSURE POINT TOTAL						1E-03					1E+02
	EXPOSURE MEDIUM TOTAL							1E-03					1E+02

TABLE H-6
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.5E-05	NA	NA	2.5E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	1.6E+00	NA	1.6E+00
			1,1-DICHLOROETHANE	NA	6.7E-07	NA	NA	6.7E-07	Kidney	NA	2.4E-03	NA	2.4E-03
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.2E+02	NA	1.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	2.0E+00	NA	2.0E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	1.2E+00	NA	1.2E+00
			1,2-DICHLOROETHANE	NA	1.2E-04	NA	NA	1.2E-04	Nervous System	NA	1.9E+00	NA	1.9E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	2.7E+00	NA	2.7E+00
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	2.6E-01	NA	2.6E-01
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.8E-04	NA	NA	4.8E-04	Developmental	NA	1.6E-01	NA	1.6E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.3E-04	NA	NA	5.3E-04	Immune system	NA	6.6E+00	NA	6.6E+00
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	1.6E+01	NA	1.6E+01
			CHLOROFORM	NA	2.6E-06	NA	NA	2.6E-06	Liver	NA	3.4E-03	NA	3.4E-03
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	2.0E-01	NA	2.0E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	7.3E-07	NA	NA	7.3E-07	Liver	NA	3.5E-01	NA	3.5E-01
			METHYL-T-BUTYL ETHER	NA	5.7E-07	NA	NA	5.7E-07	Liver / Kidney	NA	2.1E-03	NA	2.1E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	1.5E+00	NA	1.5E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	1.5E+00	NA	1.5E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.6E-08	NA	NA	2.6E-08	Nervous System	NA	7.4E-03	NA	7.4E-03
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	3.7E-01	NA	3.7E-01
			TRICHLOROETHYLENE	NA	4.9E-06	NA	NA	4.9E-06	Nervous System	NA	1.8E+00	NA	1.8E+00
			VINYL CHLORIDE	NA	4.3E-05	NA	NA	4.3E-05	Liver	NA	2.8E-01	NA	2.8E-01
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.9E+00	NA	1.9E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	1.1E+00	NA	1.1E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.2E-03	--	--	1E-03		--	1.6E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02

TABLE H-6
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-2 FT)	1,1,2,2-TETRACHLOROETHANE	7.3E-08	NA	--	NA	7.3E-08	Respiratory	5.3E-05	NA	--	5.3E-05
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.8E-01	NA	--	1.8E-01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.6E-02	NA	1.4E-02	5.0E-02
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	2.2E-03	NA	--	2.2E-03
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.7E-03	NA	1.1E-03	3.8E-03
			1,2-DICHLOROETHANE	4.0E-08	NA	--	NA	4.0E-08		2.1E-04	NA	--	2.1E-04
			1,2-DICHLOROPROPANE	3.0E-08	NA	--	NA	3.0E-08	Liver	2.7E-05	NA	--	2.7E-05
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.0E-04	NA	1.2E-04	4.2E-04
			1,4-DICHLOROBENZENE	1.6E-08	NA	6.5E-09	NA	2.3E-08	Endocrine	1.3E-04	NA	5.0E-05	1.7E-04
			BENZENE	7.0E-08	NA	--	NA	7.0E-08	Immune system /	9.3E-04	NA	--	9.3E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.3E-04	NA	--	4.3E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.5E-04	NA	--	1.5E-04
			METHYLENE CHLORIDE	6.0E-09	NA	--	NA	6.0E-09	Liver	1.5E-03	NA	--	1.5E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.0E-04	NA	--	1.0E-04
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	7.3E-10	NA	--	NA	7.3E-10	Liver	1.7E-04	NA	--	1.7E-04
			TOLUENE	NC	NA	NC	NA		Kidney	3.4E-03	NA	--	3.4E-03
			TRICHLOROETHYLENE	3.5E-08	NA	--	NA	3.5E-08	Liver / Kidney	4.5E-03	NA	--	4.5E-03
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.0E-04	NA	--	4.0E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			9.6E-03	NA	3.8E-03	1.3E-02
			BENZO(A)ANTHRACENE	3.2E-08	NA	1.7E-08	NA	4.9E-08	Kidney	2.2E-06	NA	1.1E-06	3.3E-06
			BENZO(A)PYRENE	3.5E-07	NA	1.8E-07	NA	5.3E-07	Kidney	2.3E-06	NA	1.2E-06	3.5E-06
			BENZO(B)FLUORANTHENE	4.4E-08	NA	2.3E-08	NA	6.7E-08	Kidney	2.9E-06	NA	1.5E-06	4.5E-06
			Biphenyl	NC	NA	NC	NA		Kidney	1.4E-03	NA	5.5E-04	1.9E-03
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	4.6E-05	NA	2.4E-05	6.9E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	9.2E-03	NA	--	9.2E-03
			ANTIMONY	NC	NA	NC	NA		Hematological	3.8E-03	NA	--	3.8E-03
			ARSENIC	1.9E-06	NA	3.8E-07	NA	2.3E-06	Skin	1.3E-02	NA	2.5E-03	1.5E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.5E-05	NA	--	2.5E-05
			COBALT	NC	NA	NC	NA		Endocrine	1.3E-02	NA	--	1.3E-02
			COPPER	NC	NA	NC	NA		Undetermined	2.7E-03	NA	--	2.7E-03
			MERCURY	NC	NA	NC	NA		Immune system	2.7E-03	NA	--	2.7E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	1.6E-01	NA	--	1.6E-01
			VANADIUM	NC	NA	NC	NA		Kidney	1.1E-02	NA	--	1.1E-02
			CHEMICAL TOTAL	2.6E-06	--	6.1E-07	--	3E-06		4.6E-01	--	2.2E-02	5E-01
		EXPOSURE POINT TOTAL						3E-06					5E-01
	EXPOSURE MEDIUM TOTAL							3E-06					5E-01
RECEPTOR TOTAL								**2E-03**					**3E+02**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**2.3E+00**
	--
TOTAL DEVELOPMENTAL HI =	**3.6E-01**
TOTAL ENDOCRINE HI =	**1.0E+01**
TOTAL EYE HI =	**1.5E-02**
TOTAL GI SYSTEM HI =	**8.9E-02**
TOTAL HEMATOLOGICAL HI =	**3.5E+00**
TOTAL IMMUNE SYSTEM HI =	**9.6E+00**
TOTAL KIDNEY HI =	**7.6E+00**
TOTAL LIVER HI =	**2.8E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**9.1E+00**
TOTAL NOAEL HI =	**2.3E+02**
	--
TOTAL SKIN HI =	**2.4E+00**
TOTAL RESPIRATORY HI =	**4.3E+00**

TABLE H-7
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-2 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney			--	
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	6.2E-07	NA	--	6.2E-07
			BENZO(A)ANTHRACENE	1.7E-08	NA	1.0E-08	NA	2.8E-08	Kidney	2.0E-06	NA	1.2E-06	3.2E-06
			BENZO(A)PYRENE	2.2E-07	NA	1.3E-07	NA	3.5E-07	Kidney	2.6E-06	NA	1.5E-06	4.1E-06
			BENZO(B)FLUORANTHENE	7.6E-08	NA	4.6E-08	NA	1.2E-07	Kidney	8.8E-06	NA	5.3E-06	1.4E-05
			Biphenyl	NC	NA	NC	NA		Kidney	1.3E-06	NA	6.1E-07	1.9E-06
			DIBENZO(A,H)ANTHRACENE	5.4E-08	NA	3.2E-08	NA	8.6E-08	Kidney	6.2E-07	NA	3.7E-07	1.0E-06
			INDENO(1,2,3-CD)PYRENE	1.8E-08	NA	1.1E-08	NA	2.8E-08	Kidney	2.0E-06	NA	1.2E-06	3.3E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.0E-03	NA	--	5.0E-03
			ARSENIC	1.4E-07	NA	3.3E-08	NA	1.8E-07	Skin	3.7E-03	NA	8.5E-04	4.5E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.1E-06	NA	--	6.1E-06
			COBALT	NC	NA	NC	NA		Endocrine	5.1E-03	NA	--	5.1E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.0E-03	NA	--	3.0E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	3.4E-04	NA	--	3.4E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	5.8E-02	NA	--	5.8E-02
			VANADIUM	NC	NA	NC	NA		Kidney	2.4E-03	NA	--	2.4E-03
			CHEMICAL TOTAL	5.3E-07	--	2.6E-07	--	8E-07		7.8E-02	--	8.6E-04	8E-02
		EXPOSURE POINT TOTAL						8E-07					8E-02
	EXPOSURE MEDIUM TOTAL							8E-07					8E-02
RECEPTOR TOTAL								**8E-07**					**8E-02**
							TOTAL RISK ACROSS ALL MEDIA	**8E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**8E-02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 05/09/2015
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**6.2E-07**
	--
	--
TOTAL ENDOCRINE HI =	**5.1E-03**
	--
	--
	--
	--
TOTAL KIDNEY HI =	**2.5E-03**
	--
	--
TOTAL NERVOUS SYSTEM HI =	**5.4E-03**
TOTAL NOAEL HI =	**6.1E-02**
	--
TOTAL SKIN HI =	**4.5E-03**
	--

TABLE H-8
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-2 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney			--	
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	2.5E-07	NA	--	2.5E-07
			BENZO(A)ANTHRACENE	6.0E-09	NA	3.1E-09	NA	9.1E-09	Kidney	8.0E-07	NA	4.2E-07	1.2E-06
			BENZO(A)PYRENE	7.6E-08	NA	4.0E-08	NA	1.2E-07	Kidney	1.0E-06	NA	5.4E-07	1.6E-06
			BENZO(B)FLUORANTHENE	2.6E-08	NA	1.4E-08	NA	4.0E-08	Kidney	3.5E-06	NA	1.8E-06	5.3E-06
			Biphenyl	NC	NA	NC	NA		Kidney	5.2E-07	NA	2.1E-07	7.3E-07
			DIBENZO(A,H)ANTHRACENE	1.9E-08	NA	9.7E-09	NA	2.8E-08	Kidney	2.5E-07	NA	1.3E-07	3.8E-07
			INDENO(1,2,3-CD)PYRENE	6.1E-09	NA	3.2E-09	NA	9.3E-09	Kidney	8.1E-07	NA	4.3E-07	1.2E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.0E-03	NA	--	2.0E-03
			ARSENIC	1.1E-07	NA	2.3E-08	NA	1.4E-07	Skin	1.5E-03	NA	3.0E-04	1.8E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.4E-06	NA	--	2.4E-06
			COBALT	NC	NA	NC	NA		Endocrine	2.0E-03	NA	--	2.0E-03
			COPPER	NC	NA	NC	NA		Undetermined	1.2E-03	NA	--	1.2E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	1.4E-04	NA	--	1.4E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	2.3E-02	NA	--	2.3E-02
			VANADIUM	NC	NA	NC	NA		Kidney	9.6E-04	NA	--	9.6E-04
			CHEMICAL TOTAL	2.5E-07	--	9.3E-08	--	3E-07		3.1E-02	--	3.0E-04	3E-02
		EXPOSURE POINT TOTAL						3E-07					3E-02
	EXPOSURE MEDIUM TOTAL							3E-07					3E-02
RECEPTOR TOTAL								**3E-07**					**3E-02**
							TOTAL RISK ACROSS ALL MEDIA	**3E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E-02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**2.5E-07**
	--
	--
TOTAL ENDOCRINE HI =	**2.0E-03**
	--
	--
	--
	--
TOTAL KIDNEY HI =	**9.7E-04**
	--
	--
TOTAL NERVOUS SYSTEM HI =	**2.1E-03**
TOTAL NOAEL HI =	**2.4E-02**
	--
TOTAL SKIN HI =	**1.8E-03**
	--

TABLE H-9
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01

TABLE H-9
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-2 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney			--	
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.2E-06	NA	--	1.2E-06
			BENZO(A)ANTHRACENE	6.0E-08	NA	5.1E-08	NA	1.1E-07	Kidney	3.8E-06	NA	3.3E-06	7.1E-06
			BENZO(A)PYRENE	7.7E-07	NA	6.6E-07	NA	1.4E-06	Kidney	4.9E-06	NA	4.2E-06	9.1E-06
			BENZO(B)FLUORANTHENE	2.6E-07	NA	2.3E-07	NA	4.9E-07	Kidney	1.7E-05	NA	1.4E-05	3.1E-05
			Biphenyl	NC	NA	NC	NA		Kidney	2.5E-06	NA	1.7E-06	4.2E-06
			DIBENZO(A,H)ANTHRACENE	1.9E-07	NA	1.6E-07	NA	3.5E-07	Kidney	1.2E-06	NA	1.0E-06	2.2E-06
			INDENO(1,2,3-CD)PYRENE	6.1E-08	NA	5.2E-08	NA	1.1E-07	Kidney	3.9E-06	NA	3.3E-06	7.3E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	9.6E-03	NA	--	9.6E-03
			ARSENIC	1.1E-06	NA	3.7E-07	NA	1.5E-06	Skin	7.0E-03	NA	2.3E-03	9.4E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.2E-05	NA	--	1.2E-05
			COBALT	NC	NA	NC	NA		Endocrine	9.7E-03	NA	--	9.7E-03
			COPPER	NC	NA	NC	NA		Undetermined	5.7E-03	NA	--	5.7E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	6.5E-04	NA	--	6.5E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	1.1E-01	NA	--	1.1E-01
			VANADIUM	NC	NA	NC	NA		Kidney	4.6E-03	NA	--	4.6E-03
			CHEMICAL TOTAL	2.5E-06	--	1.5E-06	--	4E-06		1.5E-01	--	2.4E-03	2E-01
		EXPOSURE POINT TOTAL						4E-06					2E-01
	EXPOSURE MEDIUM TOTAL							4E-06					2E-01
SOIL	AIR	DUST AT SITE	ETHYLBENZENE	NA	NC	NA	NA		Developmental				
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	4.1E-10	NA	4.1E-10
			BENZO(A)ANTHRACENE	NA	1.5E-12	NA	NA	1.5E-12		NA	--	NA	
			BENZO(A)PYRENE	NA	2.0E-11	NA	NA	2.0E-11		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	6.8E-12	NA	NA	6.8E-12		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			DIBENZO(A,H)ANTHRACENE	NA	5.2E-12	NA	NA	5.2E-12		NA	--	NA	
			INDENO(1,2,3-CD)PYRENE	NA	1.6E-12	NA	NA	1.6E-12		NA	--	NA	
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	3.3E-04	NA	3.3E-04
			ARSENIC	NA	9.3E-10	NA	NA	9.3E-10	Developmental / Cardiovascular / Nervous system	NA	4.0E-05	NA	4.0E-05
			CHROMIUM	NA	NC	NA	NA			NA	--	NA	
			COBALT	NA	1.6E-09	NA	NA	1.6E-09	Respiratory	NA	8.3E-05	NA	8.3E-05
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MANGANESE	NA	NC	NA	NA		Nervous System	NA	3.1E-04	NA	3.1E-04
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	4.0E-05	NA	4.0E-05
			CHEMICAL TOTAL	--	2.6E-09	--	--	3E-09		--	8.0E-04	--	8E-04
		EXPOSURE POINT TOTAL						3E-09					8E-04
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
TOTAL CARDIOVASCULAR HI =	**4.0E-05**
TOTAL DEVELOPMENTAL HI =	**4.0E-05**
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.1E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**8.7E-03**

TABLE H-10
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-10
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-2 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney			--	
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	6.6E-07	NA	--	6.6E-07
			BENZO(A)ANTHRACENE	3.3E-08	NA	2.0E-08	NA	5.3E-08	Kidney	2.1E-06	NA	1.3E-06	3.4E-06
			BENZO(A)PYRENE	4.3E-07	NA	2.6E-07	NA	6.8E-07	Kidney	2.7E-06	NA	1.6E-06	4.4E-06
			BENZO(B)FLUORANTHENE	1.5E-07	NA	8.8E-08	NA	2.3E-07	Kidney	9.4E-06	NA	5.6E-06	1.5E-05
			Biphenyl	NC	NA	NC	NA		Kidney	1.4E-06	NA	6.5E-07	2.0E-06
			DIBENZO(A,H)ANTHRACENE	1.0E-07	NA	6.2E-08	NA	1.7E-07	Kidney	6.6E-07	NA	4.0E-07	1.1E-06
			INDENO(1,2,3-CD)PYRENE	3.4E-08	NA	2.0E-08	NA	5.4E-08	Kidney	2.2E-06	NA	1.3E-06	3.5E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.3E-03	NA	--	5.3E-03
			ARSENIC	6.3E-07	NA	1.5E-07	NA	7.7E-07	Skin	3.9E-03	NA	9.0E-04	4.8E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.5E-06	NA	--	6.5E-06
			COBALT	NC	NA	NC	NA		Endocrine	5.4E-03	NA	--	5.4E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.2E-03	NA	--	3.2E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	3.6E-04	NA	--	3.6E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	6.2E-02	NA	--	6.2E-02
			VANADIUM	NC	NA	NC	NA		Kidney	2.6E-03	NA	--	2.6E-03
			CHEMICAL TOTAL	1.4E-06	--	5.9E-07	--	2E-06		8.2E-02	--	9.1E-04	8E-02
		EXPOSURE POINT TOTAL						2E-06					8E-02
	EXPOSURE MEDIUM TOTAL							2E-06					8E-02
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
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	--
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.4E-01**
TOTAL RESPIRATORY HI =	**8.6E-03**

TABLE H-11
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	2.9E-06	NA	3.5E-07	NA	3.2E-06	Respiratory	8.4E-03	NA	1.0E-03	9.4E-03
			1,1,2-TRICHLOROETHANE	1.9E-07	NA	1.7E-08	NA	2.0E-07	Hematological	9.5E-03	NA	8.6E-04	1.0E-02
			1,1-DICHLOROETHANE	6.8E-08	NA	5.3E-09	NA	7.3E-08	Undetermined	7.0E-04	NA	5.5E-05	7.5E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.5E+01	NA	--	2.5E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.3E+00	NA	4.1E+00	7.4E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.1E+00	NA	--	7.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-01	NA	2.3E-01	5.8E-01
			1,2-DICHLOROETHANE	1.2E-05	NA	5.6E-07	NA	1.2E-05		2.5E-01	NA	1.2E-02	2.6E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	5.1E-01	NA	4.5E-02	5.5E-01
			1,2-DICHLOROPROPANE	4.0E-06	NA	3.9E-07	NA	4.4E-06	Liver	1.5E-02	NA	1.4E-03	1.6E-02
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	8.5E-02	NA	--	8.5E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	6.1E-02	NA	--	6.1E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.9E-01	NA	6.2E-01	1.3E+00
			1,4-DICHLOROBENZENE	7.8E-06	NA	5.0E-06	NA	1.3E-05	Endocrine	2.4E-01	NA	1.6E-01	4.0E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			4.7E-01	NA	--	4.7E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			3.4E-01	NA	--	3.4E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.1E-04	NA	1.7E-05	NA	1.3E-04	Immune system /	5.8E+00	NA	8.9E-01	6.7E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.8E+00	NA	1.7E+00	6.5E+00
			CHLOROFORM	9.9E-08	NA	8.7E-09	NA	1.1E-07	Liver	3.7E-03	NA	3.3E-04	4.1E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.7E-01	NA	1.6E-01	4.2E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	5.6E-03	NA	--	5.6E-03
			METHYLENE CHLORIDE	2.0E-05	NA	7.6E-07	NA	2.1E-05	Liver	3.6E+00	NA	1.4E-01	3.8E+00
			METHYL-T-BUTYL ETHER	1.4E-07	NA	--	NA	1.4E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	3.3E-02	NA	2.1E-02	5.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.0E-01	NA	--	1.0E-01
			P-CHLOROTOLUENE	NC	NA	NC	NA			5.7E-01	NA	--	5.7E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.6E-09	NA	9.8E-07	NA	9.9E-07	Liver	6.1E-03	NA	3.5E-03	9.6E-03
			TOLUENE	NC	NA	NC	NA		Kidney	2.9E+00	NA	1.0E+00	3.9E+00
			TRICHLOROETHYLENE	1.7E-06	NA	--	NA	1.7E-06		--	NA	--	
			TRICHLOROETHYLENE	1.3E-06	NA	--	NA	1.3E-06	Liver / Kidney	8.2E-01	NA	--	8.2E-01
			VINYL CHLORIDE	3.6E-04	NA	1.9E-05	NA	3.8E-04	Liver	9.9E-01	NA	5.4E-02	1.0E+00
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.1E-01	NA	--	1.1E-01
			1,4-DIOXANE	5.4E-06	NA	2.0E-08	NA	5.4E-06	Liver	2.1E-02	NA	7.7E-05	2.1E-02
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	5.2E-02	NA	7.4E-03	6.0E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.4E-02	NA	--	1.4E-02
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	1.5E-05	NA	--	NA	1.5E-05		4.3E+00	NA	--	4.3E+00
			Biphenyl	NC	NA	NC	NA		Kidney	6.9E-04	NA	--	6.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	3.9E-07	NA	5.8E-07	NA	9.8E-07	Liver	1.6E-02	NA	2.4E-02	4.1E-02
			ALDRIN	7.4E-07	NA	6.5E-08	NA	8.0E-07	Liver	1.7E-02	NA	1.5E-03	1.8E-02
			HEPTACHLOR EPOXIDE	5.0E-07	NA	--	NA	5.0E-07	Liver	4.9E-02	NA	--	4.9E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.5E+00	NA	--	3.5E+00
			ARSENIC	2.1E-04	NA	1.4E-06	NA	2.1E-04	Skin	5.3E+00	NA	3.5E-02	5.4E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	1.3E+00	NA	5.9E-02	1.4E+00
			BARIUM	NC	NA	NC	NA		Kidney	1.2E-01	NA	1.1E-02	1.3E-01
			BERYLLIUM	NC	NA	NC	NA		GI system	1.2E-01	NA	1.1E-01	2.3E-01
			CADMIUM	NC	NA	NC	NA		Kidney	5.2E+00	NA	1.4E+00	6.5E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.0E-02	NA	2.0E-02	4.0E-02
			COBALT	NC	NA	NC	NA		Endocrine	1.6E+01	NA	--	1.6E+01
			COPPER	NC	NA	NC	NA		Undetermined	8.5E+01	NA	5.6E-01	8.5E+01
			IRON	NC	NA	NC	NA			3.1E+01	NA	--	3.1E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	3.5E-01	NA	5.7E-02	4.1E-01
			MERCURY	NC	NA	NC	NA		Immune system	1.9E-01	NA	1.7E-02	2.0E-01
			NICKEL	NC	NA	NC	NA		General Toxicity	7.7E-01	NA	2.5E-02	7.9E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	9.5E-02	NA	6.3E-04	9.6E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	3.3E-02	NA	3.3E-03	3.7E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	5.0E+01	NA	3.3E-01	5.1E+01
			VANADIUM	NC	NA	NC	NA		Kidney	5.1E+00	NA	1.3E+00	6.4E+00
			ZINC	NC	NA	NC	NA		Liver	4.8E+01	NA	1.9E-01	4.8E+01
			CHEMICAL TOTAL	7.4E-04	--	4.6E-05	--	8E-04		3.1E+02	--	1.3E+01	3E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						8E-04					3E+02
	EXPOSURE MEDIUM TOTAL							8E-04					3E+02

TABLE H-11
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.7E-05	NA	NA	2.7E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.8E-06	NA	NA	1.8E-06		NA	6.7E+00	NA	6.7E+00
			1,1-DICHLOROETHANE	NA	7.2E-07	NA	NA	7.2E-07	Kidney	NA	1.1E-02	NA	1.1E-02
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	5.2E+02	NA	5.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	8.6E+00	NA	8.6E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	5.4E+00	NA	5.4E+00
			1,2-DICHLOROETHANE	NA	1.3E-04	NA	NA	1.3E-04	Nervous System	NA	8.1E+00	NA	8.1E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	1.2E+01	NA	1.2E+01
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	1.1E+00	NA	1.1E+00
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	5.2E-04	NA	NA	5.2E-04	Developmental	NA	6.9E-01	NA	6.9E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.8E-04	NA	NA	5.8E-04	Immune system	NA	2.9E+01	NA	2.9E+01
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	6.7E+01	NA	6.7E+01
			CHLOROFORM	NA	2.8E-06	NA	NA	2.8E-06	Liver	NA	1.5E-02	NA	1.5E-02
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	8.7E-01	NA	8.7E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	4.2E-06	NA	NA	4.2E-06	Liver	NA	1.5E+00	NA	1.5E+00
			METHYL-T-BUTYL ETHER	NA	6.2E-07	NA	NA	6.2E-07	Liver / Kidney	NA	9.3E-03	NA	9.3E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	6.7E+00	NA	6.7E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	6.7E+00	NA	6.7E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.9E-08	NA	NA	2.9E-08	Nervous System	NA	3.2E-02	NA	3.2E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	1.6E+00	NA	1.6E+00
			TRICHLOROETHYLENE	NA	6.9E-06	NA	NA	6.9E-06		NA	--	NA	
			TRICHLOROETHYLENE	NA	4.0E-06	NA	NA	4.0E-06	Nervous System	NA	7.6E+00	NA	7.6E+00
			VINYL CHLORIDE	NA	9.3E-05	NA	NA	9.3E-05	Liver	NA	1.2E+00	NA	1.2E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	8.2E+00	NA	8.2E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	5.0E+00	NA	5.0E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.4E-03	--	--	1E-03		--	6.9E+02	--	7E+02
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						1E-03					7E+02

TABLE H-11
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-2 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney			--	
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-05	NA	--	1.7E-05
			BENZO(A)ANTHRACENE	1.1E-06	NA	4.0E-07	NA	1.5E-06	Kidney	5.6E-05	NA	2.0E-05	7.6E-05
			BENZO(A)PYRENE	1.4E-05	NA	5.2E-06	NA	1.9E-05	Kidney	7.1E-05	NA	2.6E-05	9.7E-05
			BENZO(B)FLUORANTHENE	4.9E-06	NA	1.8E-06	NA	6.6E-06	Kidney	2.4E-04	NA	8.9E-05	3.3E-04
			Biphenyl	NC	NA	NC	NA		Kidney	3.6E-05	NA	1.0E-05	4.7E-05
			DIBENZO(A,H)ANTHRACENE	3.4E-06	NA	1.3E-06	NA	4.7E-06	Kidney	1.7E-05	NA	6.3E-06	2.4E-05
			INDENO(1,2,3-CD)PYRENE	1.1E-06	NA	4.1E-07	NA	1.5E-06	Kidney	5.7E-05	NA	2.1E-05	7.7E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.4E-01	NA	--	1.4E-01
			ARSENIC	3.9E-06	NA	5.5E-07	NA	4.5E-06	Skin	1.0E-01	NA	1.4E-02	1.2E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.7E-04	NA	--	1.7E-04
			COBALT	NC	NA	NC	NA		Endocrine	1.4E-01	NA	--	1.4E-01
			COPPER	NC	NA	NC	NA		Undetermined	8.3E-02	NA	--	8.3E-02
			MANGANESE	NC	NA	NC	NA		Nervous System	9.4E-03	NA	--	9.4E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	1.6E+00	NA	--	1.6E+00
			VANADIUM	NC	NA	NC	NA		Kidney	6.7E-02	NA	--	6.7E-02
			CHEMICAL TOTAL	2.9E-05	--	9.5E-06	--	4E-05		2.2E+00	--	1.4E-02	2E+00
		EXPOSURE POINT TOTAL						4E-05					2E+00
	EXPOSURE MEDIUM TOTAL							4E-05					2E+00
RECEPTOR TOTAL								**2E-03**					**1E+03**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1E+03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**7.8E+00**
	--
TOTAL DEVELOPMENTAL HI =	**1.6E+00**
TOTAL ENDOCRINE HI =	**2.4E+01**
TOTAL EYE HI =	**3.7E-02**
TOTAL GI SYSTEM HI =	**2.3E-01**
TOTAL HEMATOLOGICAL HI =	**8.2E+00**
TOTAL IMMUNE SYSTEM HI =	**3.6E+01**
TOTAL KIDNEY HI =	**1.8E+01**
TOTAL LIVER HI =	**6.6E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**3.6E+01**
TOTAL NOAEL HI =	**8.1E+02**
	--
TOTAL SKIN HI =	**5.6E+00**
TOTAL RESPIRATORY HI =	**1.8E+01**

TABLE H-12
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	4.9E-06	NA	6.3E-07	NA	5.6E-06	Respiratory	3.6E-03	NA	4.6E-04	4.1E-03
			1,1,2-TRICHLOROETHANE	3.2E-07	NA	3.0E-08	NA	3.5E-07	Hematological	4.1E-03	NA	3.8E-04	4.4E-03
			1,1-DICHLOROETHANE	1.2E-07	NA	9.2E-09	NA	1.3E-07	Undetermined	3.0E-04	NA	2.4E-05	3.2E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.1E+01	NA	--	1.1E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.4E+00	NA	1.8E+00	3.2E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	3.0E+00	NA	--	3.0E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.5E-01	NA	1.0E-01	2.5E-01
			1,2-DICHLOROETHANE	2.0E-05	NA	9.7E-07	NA	2.1E-05		1.1E-01	NA	5.2E-03	1.1E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.2E-01	NA	1.9E-02	2.4E-01
			1,2-DICHLOROPROPANE	6.9E-06	NA	6.9E-07	NA	7.6E-06	Liver	6.2E-03	NA	6.2E-04	6.9E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	3.6E-02	NA	--	3.6E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	2.6E-02	NA	--	2.6E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.0E-01	NA	2.7E-01	5.7E-01
			1,4-DICHLOROBENZENE	1.3E-05	NA	9.0E-06	NA	2.2E-05	Endocrine	1.0E-01	NA	6.9E-02	1.7E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			2.0E-01	NA	--	2.0E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			1.5E-01	NA	--	1.5E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.9E-04	NA	2.9E-05	NA	2.2E-04	Immune system /	2.5E+00	NA	3.8E-01	2.9E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	2.1E+00	NA	7.4E-01	2.8E+00
			CHLOROFORM	1.7E-07	NA	1.5E-08	NA	1.9E-07	Liver	1.6E-03	NA	1.5E-04	1.7E-03
			CYCLOHEXANE, METHYL-	--	NA	--	NA		Kidney	--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.1E-01	NA	6.9E-02	1.8E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	2.4E-03	NA	--	2.4E-03
			METHYLENE CHLORIDE	6.4E-06	NA	2.4E-07	NA	6.6E-06	Liver	1.6E+00	NA	5.9E-02	1.6E+00
			METHYL-T-BUTYL ETHER	2.3E-07	NA	--	NA	2.3E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.4E-02	NA	9.2E-03	2.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.4E-02	NA	--	4.4E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			2.4E-01	NA	--	2.4E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.1E-08	NA	1.7E-06	NA	1.8E-06	Liver	2.6E-03	NA	1.6E-03	4.2E-03
			TOLUENE	NC	NA	NC	NA		Kidney	1.3E+00	NA	4.4E-01	1.7E+00
			TRICHLOROETHYLENE	2.8E-06	NA	--	NA	2.8E-06	Liver / Kidney	3.5E-01	NA	5.9E-02	4.1E-01
			VINYL CHLORIDE	3.2E-04	NA	--	NA	3.2E-04	Liver	4.3E-01	NA	--	4.3E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.8E-02	NA	--	4.8E-02
			1,4-DIOXANE	9.3E-06	NA	3.4E-08	NA	9.3E-06	Liver	9.1E-03	NA	3.3E-05	9.1E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	2.2E-02	NA	3.3E-03	2.6E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.2E-03	NA	--	6.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	2.5E-05	NA	--	NA	2.5E-05	NOAEL	1.8E+00	NA	--	1.8E+00
			Biphenyl	NC	NA	NC	NA		Kidney	2.9E-04	NA	--	2.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.7E-07	NA	1.0E-06	NA	1.7E-06	Liver	7.0E-03	NA	1.1E-02	1.8E-02
			ALDRIN	1.3E-06	NA	1.2E-07	NA	1.4E-06	Liver	7.2E-03	NA	6.6E-04	7.9E-03
			HEPTACHLOR EPOXIDE	8.5E-07	NA	--	NA	8.5E-07	Liver	2.1E-02	NA	--	2.1E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E+00	NA	--	1.5E+00
			ARSENIC	3.5E-04	NA	1.8E-06	NA	3.6E-04	Skin	2.3E+00	NA	1.2E-02	2.3E+00
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	5.7E-01	NA	2.0E-02	5.9E-01
			BARIUM	NC	NA	NC	NA		Kidney	5.0E-02	NA	3.7E-03	5.3E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	5.1E-02	NA	3.8E-02	8.9E-02
			CADMIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.6E-01	2.7E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.5E-03	NA	6.8E-03	1.5E-02
			COBALT	NC	NA	NC	NA		NOAEL	1.4E-03	NA	--	1.4E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.6E+01	NA	1.9E-01	3.6E+01
			IRON	NC	NA	NC	NA			1.3E+01	NA	--	1.3E+01
			LEAD	--	NA	--	NA		Undetermined	--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	1.5E-01	NA	1.9E-02	1.7E-01
			MERCURY	NC	NA	NC	NA		Immune system	7.9E-02	NA	5.9E-03	8.5E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	3.3E-01	NA	8.6E-03	3.4E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	4.1E-02	NA	2.1E-04	4.1E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	1.4E-02	NA	1.1E-03	1.5E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	2.2E+01	NA	1.1E-01	2.2E+01
			VANADIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.4E-01	2.6E+00
			ZINC	NC	NA	NC	NA		Liver	2.0E+01	NA	6.4E-02	2.0E+01
			CHEMICAL TOTAL	9.5E-04	--	4.5E-05	--	1E-03		1.3E+02	--	5.5E+00	1E+02
		EXPOSURE POINT TOTAL						1E-03					1E+02
	EXPOSURE MEDIUM TOTAL							1E-03					1E+02

TABLE H-12
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.5E-05	NA	NA	2.5E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	1.6E+00	NA	1.6E+00
			1,1-DICHLOROETHANE	NA	6.7E-07	NA	NA	6.7E-07	Kidney	NA	2.4E-03	NA	2.4E-03
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.2E+02	NA	1.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	2.0E+00	NA	2.0E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	1.2E+00	NA	1.2E+00
			1,2-DICHLOROETHANE	NA	1.2E-04	NA	NA	1.2E-04	Nervous System	NA	1.9E+00	NA	1.9E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	2.7E+00	NA	2.7E+00
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	2.6E-01	NA	2.6E-01
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.8E-04	NA	NA	4.8E-04	Developmental	NA	1.6E-01	NA	1.6E-01
			1-CHLOROBUTANE	NA	--	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.3E-04	NA	NA	5.3E-04	Immune system	NA	6.6E+00	NA	6.6E+00
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	1.6E+01	NA	1.6E+01
			CHLOROFORM	NA	2.6E-06	NA	NA	2.6E-06	Liver	NA	3.4E-03	NA	3.4E-03
			CYCLOHEXANE, METHYL-	NA	--	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	2.0E-01	NA	2.0E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	7.3E-07	NA	NA	7.3E-07	Liver	NA	3.5E-01	NA	3.5E-01
			METHYL-T-BUTYL ETHER	NA	5.7E-07	NA	NA	5.7E-07	Liver / Kidney	NA	2.1E-03	NA	2.1E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	1.5E+00	NA	1.5E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	1.5E+00	NA	1.5E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.6E-08	NA	NA	2.6E-08	Nervous System	NA	7.4E-03	NA	7.4E-03
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	3.7E-01	NA	3.7E-01
			TRICHLOROETHYLENE	NA	4.9E-06	NA	NA	4.9E-06	Nervous System	NA	1.8E+00	NA	1.8E+00
			VINYL CHLORIDE	NA	4.3E-05	NA	NA	4.3E-05	Liver	NA	2.8E-01	NA	2.8E-01
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.9E+00	NA	1.9E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA		Nervous System	NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY (5)	NA	NC	NA	NA		Developmental /				
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA		Respiratory				
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA		Nervous System	NA	1.1E+00	NA	1.1E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA		Liver / Nervous System /				
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.2E-03	--	--	1E-03		--	1.6E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02

TABLE H-12
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-2 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney			--	
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.8E-06	NA	--	1.8E-06
			BENZO(A)ANTHRACENE	8.9E-08	NA	4.6E-08	NA	1.4E-07	Kidney	6.0E-06	NA	3.1E-06	9.0E-06
			BENZO(A)PYRENE	1.1E-06	NA	5.9E-07	NA	1.7E-06	Kidney	7.6E-06	NA	4.0E-06	1.2E-05
			BENZO(B)FLUORANTHENE	3.9E-07	NA	2.0E-07	NA	6.0E-07	Kidney	2.6E-05	NA	1.4E-05	4.0E-05
			Biphenyl	NC	NA	NC	NA		Kidney	3.9E-06	NA	1.6E-06	5.5E-06
			DIBENZO(A,H)ANTHRACENE	2.8E-07	NA	1.4E-07	NA	4.2E-07	Kidney	1.8E-06	NA	9.6E-07	2.8E-06
			INDENO(1,2,3-CD)PYRENE	9.1E-08	NA	4.7E-08	NA	1.4E-07	Kidney	6.1E-06	NA	3.2E-06	9.2E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E-02	NA	--	1.5E-02
			ARSENIC	1.7E-06	NA	3.4E-07	NA	2.0E-06	Skin	1.1E-02	NA	2.2E-03	1.3E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.8E-05	NA	--	1.8E-05
			COBALT	NC	NA	NC	NA		NOAEL	3.0E-06	NA	--	3.0E-06
			COPPER	NC	NA	NC	NA		Undetermined	8.9E-03	NA	--	8.9E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	1.0E-03	NA	--	1.0E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	1.7E-01	NA	--	1.7E-01
			VANADIUM	NC	NA	NC	NA		Kidney	7.2E-03	NA	--	7.2E-03
			CHEMICAL TOTAL	3.7E-06	--	1.4E-06	--	5E-06		2.2E-01	--	2.2E-03	2E-01
		EXPOSURE POINT TOTAL						5E-06					2E-01
	EXPOSURE MEDIUM TOTAL							5E-06					2E-01
RECEPTOR TOTAL								**2E-03**					**3E+02**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/19/15

TOTAL GENERAL TOXICITY HI =	**2.3E+00**
	--
TOTAL DEVELOPMENTAL HI =	**3.6E-01**
TOTAL ENDOCRINE HI =	**3.4E+00**
TOTAL EYE HI =	**1.5E-02**
TOTAL GI SYSTEM HI =	**8.9E-02**
TOTAL HEMATOLOGICAL HI =	**3.5E+00**
TOTAL IMMUNE SYSTEM HI =	**9.6E+00**
TOTAL KIDNEY HI =	**7.6E+00**
TOTAL LIVER HI =	**2.8E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**1.0E+01**
TOTAL NOAEL HI =	**2.3E+02**
	--
TOTAL SKIN HI =	**2.4E+00**
TOTAL RESPIRATORY HI =	**4.3E+00**

TABLE H-13
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-2 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.3E-06	NA	1.4E-06	3.6E-06
			BENZO(A)PYRENE	3.0E-08	NA	1.8E-08	NA	4.8E-08	Kidney	3.5E-07	NA	2.1E-07	5.5E-07
			BENZO(B)FLUORANTHENE	3.9E-09	NA	2.3E-09	NA	6.2E-09	Kidney	4.5E-07	NA	2.7E-07	7.2E-07
			Biphenyl	NC	NA	NC	NA		Kidney	4.2E-06	NA	1.9E-06	6.1E-06
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.4E-03	NA	--	1.4E-03
			ARSENIC	1.4E-07	NA	3.2E-08	NA	1.7E-07	Skin	3.6E-03	NA	8.2E-04	4.4E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	4.5E-06	NA	--	4.5E-06
			VANADIUM	NC	NA	NC	NA		Kidney	1.6E-03	NA	--	1.6E-03
			CHEMICAL TOTAL	1.7E-07	--	5.2E-08	--	2E-07		6.7E-03	--	8.3E-04	7E-03
		EXPOSURE POINT TOTAL						2E-07					7E-03
	EXPOSURE MEDIUM TOTAL							2E-07					7E-03
RECEPTOR TOTAL								**2E-07**					**7E-03**
							TOTAL RISK ACROSS ALL MEDIA	**2E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**7E-03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 05/09/2015
Checked by: BJR 4/10/2015

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TOTAL KIDNEY HI =	**1.6E-03**
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	--
TOTAL NERVOUS SYSTEM HI =	**1.4E-03**
TOTAL NOAEL HI =	**4.5E-06**
	--
TOTAL SKIN HI =	**4.4E-03**
TOTAL RESPIRATORY HI =	**3.6E-06**

TABLE H-14
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-2 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	9.0E-07	NA	4.7E-07	1.4E-06
			BENZO(A)PYRENE	1.0E-08	NA	5.4E-09	NA	1.6E-08	Kidney	1.4E-07	NA	7.2E-08	2.1E-07
			BENZO(B)FLUORANTHENE	1.3E-09	NA	7.1E-10	NA	2.0E-09	Kidney	1.8E-07	NA	9.4E-08	2.7E-07
			Biphenyl	NC	NA	NC	NA		Kidney	1.6E-06	NA	6.7E-07	2.3E-06
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.7E-04	NA	--	5.7E-04
			ARSENIC	1.1E-07	NA	2.2E-08	NA	1.3E-07	Skin	1.4E-03	NA	2.9E-04	1.7E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.8E-06	NA	--	1.8E-06
			VANADIUM	NC	NA	NC	NA		Kidney	6.5E-04	NA	--	6.5E-04
			CHEMICAL TOTAL	1.2E-07	--	2.8E-08	--	1E-07		2.6E-03	--	2.9E-04	3E-03
		EXPOSURE POINT TOTAL						1E-07					3E-03
	EXPOSURE MEDIUM TOTAL							1E-07					3E-03
RECEPTOR TOTAL								**1E-07**					**3E-03**
							TOTAL RISK ACROSS ALL MEDIA	**1E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E-03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

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TOTAL KIDNEY HI =	**6.5E-04**
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	--
TOTAL NERVOUS SYSTEM HI =	**5.7E-04**
TOTAL NOAEL HI =	**1.8E-06**
	--
TOTAL SKIN HI =	**1.7E-03**
TOTAL RESPIRATORY HI =	**1.4E-06**

TABLE H-15
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-15
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-2 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	4.3E-06	NA	3.7E-06	8.1E-06
			BENZO(A)PYRENE	1.0E-07	NA	8.8E-08	NA	1.9E-07	Kidney	6.6E-07	NA	5.7E-07	1.2E-06
			BENZO(B)FLUORANTHENE	1.3E-08	NA	1.2E-08	NA	2.5E-08	Kidney	8.6E-07	NA	7.4E-07	1.6E-06
			Biphenyl	NC	NA	NC	NA		Kidney	7.9E-06	NA	5.2E-06	1.3E-05
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.8E-03	NA	--	2.8E-03
			ARSENIC	1.1E-06	NA	3.6E-07	NA	1.5E-06	Skin	6.8E-03	NA	2.2E-03	9.1E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.6E-06	NA	--	8.6E-06
			VANADIUM	NC	NA	NC	NA		Kidney	3.1E-03	NA	--	3.1E-03
			CHEMICAL TOTAL	1.2E-06	--	4.6E-07	--	2E-06		1.3E-02	--	2.3E-03	1E-02
		EXPOSURE POINT TOTAL						2E-06					1E-02
	EXPOSURE MEDIUM TOTAL							2E-06					1E-02
SOIL	AIR	DUST AT SITE	CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)PYRENE	NA	2.7E-12	NA	NA	2.7E-12		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	3.5E-13	NA	NA	3.5E-13		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	9.5E-05	NA	9.5E-05
			ARSENIC	NA	9.0E-10	NA	NA	9.0E-10	Developmental / Cardiovascular / Nervous system	NA	3.9E-05	NA	3.9E-05
			CHROMIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	2.7E-05	NA	2.7E-05
			CHEMICAL TOTAL	--	9.0E-10	--	--	9E-10		--	1.6E-04	--	2E-04
		EXPOSURE POINT TOTAL						9E-10					2E-04
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
TOTAL CARDIOVASCULAR HI =	**3.9E-05**
TOTAL DEVELOPMENTAL HI =	**3.9E-05**
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
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TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**8.6E-03**

TABLE H-16
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-16
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-2 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.4E-06	NA	1.4E-06	3.9E-06
			BENZO(A)PYRENE	5.7E-08	NA	3.4E-08	NA	9.2E-08	Kidney	3.7E-07	NA	2.2E-07	5.9E-07
			BENZO(B)FLUORANTHENE	7.5E-09	NA	4.5E-09	NA	1.2E-08	Kidney	4.8E-07	NA	2.9E-07	7.7E-07
			Biphenyl	NC	NA	NC	NA		Kidney	4.4E-06	NA	2.0E-06	6.4E-06
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E-03	NA	--	1.5E-03
			ARSENIC	6.1E-07	NA	1.4E-07	NA	7.5E-07	Skin	3.8E-03	NA	8.7E-04	4.7E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	4.8E-06	NA	--	4.8E-06
			VANADIUM	NC	NA	NC	NA		Kidney	1.7E-03	NA	--	1.7E-03
			CHEMICAL TOTAL	6.7E-07	--	1.8E-07	--	9E-07		7.1E-03	--	8.8E-04	8E-03
		EXPOSURE POINT TOTAL						9E-07					8E-03
	EXPOSURE MEDIUM TOTAL							9E-07					8E-03

RECEPTOR TOTAL	**4E-04**		**5E+01**
TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**	**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
	--
	--
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.4E-01**
TOTAL RESPIRATORY HI =	**8.6E-03**

TABLE H-17
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	2.9E-06	NA	3.5E-07	NA	3.2E-06	Respiratory	8.4E-03	NA	1.0E-03	9.4E-03
			1,1,2-TRICHLOROETHANE	1.9E-07	NA	1.7E-08	NA	2.0E-07	Hematological	9.5E-03	NA	8.6E-04	1.0E-02
			1,1-DICHLOROETHANE	6.8E-08	NA	5.3E-09	NA	7.3E-08	Undetermined	7.0E-04	NA	5.5E-05	7.5E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.5E+01	NA	--	2.5E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.3E+00	NA	4.1E+00	7.4E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.1E+00	NA	--	7.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-01	NA	2.3E-01	5.8E-01
			1,2-DICHLOROETHANE	1.2E-05	NA	5.6E-07	NA	1.2E-05		2.5E-01	NA	1.2E-02	2.6E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	5.1E-01	NA	4.5E-02	5.5E-01
			1,2-DICHLOROPROPANE	4.0E-06	NA	3.9E-07	NA	4.4E-06	Liver	1.5E-02	NA	1.4E-03	1.6E-02
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	8.5E-02	NA	--	8.5E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	6.1E-02	NA	--	6.1E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.9E-01	NA	6.2E-01	1.3E+00
			1,4-DICHLOROBENZENE	7.8E-06	NA	5.0E-06	NA	1.3E-05	Endocrine	2.4E-01	NA	1.6E-01	4.0E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			4.7E-01	NA	--	4.7E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			3.4E-01	NA	--	3.4E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.1E-04	NA	1.7E-05	NA	1.3E-04	Immune system /	5.8E+00	NA	8.9E-01	6.7E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.8E+00	NA	1.7E+00	6.5E+00
			CHLOROFORM	9.9E-08	NA	8.7E-09	NA	1.1E-07	Liver	3.7E-03	NA	3.3E-04	4.1E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.7E-01	NA	1.6E-01	4.2E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	5.6E-03	NA	--	5.6E-03
			METHYLENE CHLORIDE	2.0E-05	NA	7.6E-07	NA	2.1E-05	Liver	3.6E+00	NA	1.4E-01	3.8E+00
			METHYL-T-BUTYL ETHER	1.4E-07	NA	--	NA	1.4E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	3.3E-02	NA	2.1E-02	5.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.0E-01	NA	--	1.0E-01
			P-CHLOROTOLUENE	NC	NA	NC	NA			5.7E-01	NA	--	5.7E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.6E-09	NA	9.8E-07	NA	9.9E-07	Liver	6.1E-03	NA	3.5E-03	9.6E-03
			TOLUENE	NC	NA	NC	NA		Kidney	2.9E+00	NA	1.0E+00	3.9E+00
			TRICHLOROETHYLENE	1.7E-06	NA	--	NA	1.7E-06		--	NA	--	
			TRICHLOROETHYLENE	1.3E-06	NA	--	NA	1.3E-06	Liver / Kidney	8.2E-01	NA	--	8.2E-01
			VINYL CHLORIDE	3.6E-04	NA	1.9E-05	NA	3.8E-04	Liver	9.9E-01	NA	5.4E-02	1.0E+00
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.1E-01	NA	--	1.1E-01
			1,4-DIOXANE	5.4E-06	NA	2.0E-08	NA	5.4E-06	Liver	2.1E-02	NA	7.7E-05	2.1E-02
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	5.2E-02	NA	7.4E-03	6.0E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.4E-02	NA	--	1.4E-02
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	1.5E-05	NA	--	NA	1.5E-05		4.3E+00	NA	--	4.3E+00
			Biphenyl	NC	NA	NC	NA		Kidney	6.9E-04	NA	--	6.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	3.9E-07	NA	5.8E-07	NA	9.8E-07	Liver	1.6E-02	NA	2.4E-02	4.1E-02
			ALDRIN	7.4E-07	NA	6.5E-08	NA	8.0E-07	Liver	1.7E-02	NA	1.5E-03	1.8E-02
			HEPTACHLOR EPOXIDE	5.0E-07	NA	--	NA	5.0E-07	Liver	4.9E-02	NA	--	4.9E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.5E+00	NA	--	3.5E+00
			ARSENIC	2.1E-04	NA	1.4E-06	NA	2.1E-04	Skin	5.3E+00	NA	3.5E-02	5.4E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	1.3E+00	NA	5.9E-02	1.4E+00
			BARIUM	NC	NA	NC	NA		Kidney	1.2E-01	NA	1.1E-02	1.3E-01
			BERYLLIUM	NC	NA	NC	NA		GI system	1.2E-01	NA	1.1E-01	2.3E-01
			CADMIUM	NC	NA	NC	NA		Kidney	5.2E+00	NA	1.4E+00	6.5E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.0E-02	NA	2.0E-02	4.0E-02
			COBALT	NC	NA	NC	NA		Endocrine	1.6E+01	NA	--	1.6E+01
			COPPER	NC	NA	NC	NA		Undetermined	8.5E+01	NA	5.6E-01	8.5E+01
			IRON	NC	NA	NC	NA			3.1E+01	NA	--	3.1E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	3.5E-01	NA	5.7E-02	4.1E-01
			MERCURY	NC	NA	NC	NA		Immune system	1.9E-01	NA	1.7E-02	2.0E-01
			NICKEL	NC	NA	NC	NA		General Toxicity	7.7E-01	NA	2.5E-02	7.9E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	9.5E-02	NA	6.3E-04	9.6E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	3.3E-02	NA	3.3E-03	3.7E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	5.0E+01	NA	3.3E-01	5.1E+01
			VANADIUM	NC	NA	NC	NA		Kidney	5.1E+00	NA	1.3E+00	6.4E+00
			CHEMICAL TOTAL	7.4E-04	--	4.6E-05	--	8E-04		3.1E+02	--	1.3E+01	3E+02
		EXPOSURE POINT TOTAL						8E-04					3E+02
	EXPOSURE MEDIUM TOTAL							8E-04					3E+02

TABLE H-17
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.7E-05	NA	NA	2.7E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.8E-06	NA	NA	1.8E-06		NA	6.7E+00	NA	6.7E+00
			1,1-DICHLOROETHANE	NA	7.2E-07	NA	NA	7.2E-07	Kidney	NA	1.1E-02	NA	1.1E-02
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	5.2E+02	NA	5.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	8.6E+00	NA	8.6E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	5.4E+00	NA	5.4E+00
			1,2-DICHLOROETHANE	NA	1.3E-04	NA	NA	1.3E-04	Nervous System	NA	8.1E+00	NA	8.1E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	1.2E+01	NA	1.2E+01
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	1.1E+00	NA	1.1E+00
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	5.2E-04	NA	NA	5.2E-04	Developmental	NA	6.9E-01	NA	6.9E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.8E-04	NA	NA	5.8E-04	Immune system	NA	2.9E+01	NA	2.9E+01
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	6.7E+01	NA	6.7E+01
			CHLOROFORM	NA	2.8E-06	NA	NA	2.8E-06	Liver	NA	1.5E-02	NA	1.5E-02
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	8.7E-01	NA	8.7E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	4.2E-06	NA	NA	4.2E-06	Liver	NA	1.5E+00	NA	1.5E+00
			METHYL-T-BUTYL ETHER	NA	6.2E-07	NA	NA	6.2E-07	Liver / Kidney	NA	9.3E-03	NA	9.3E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	6.7E+00	NA	6.7E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	6.7E+00	NA	6.7E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.9E-08	NA	NA	2.9E-08	Nervous System	NA	3.2E-02	NA	3.2E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	1.6E+00	NA	1.6E+00
			TRICHLOROETHYLENE	NA	6.9E-06	NA	NA	6.9E-06		NA	--	NA	
			TRICHLOROETHYLENE	NA	4.0E-06	NA	NA	4.0E-06	Nervous System	NA	7.6E+00	NA	7.6E+00
			VINYL CHLORIDE	NA	9.3E-05	NA	NA	9.3E-05	Liver	NA	1.2E+00	NA	1.2E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	8.2E+00	NA	8.2E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	5.0E+00	NA	5.0E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.4E-03	--	--	1E-03		--	6.9E+02	--	7E+02
		EXPOSURE POINT TOTAL						1E-03					7E+02

TABLE H-17
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-2 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.3E-05	NA	2.3E-05	8.6E-05
			BENZO(A)PYRENE	1.9E-06	NA	6.9E-07	NA	2.6E-06	Kidney	9.6E-06	NA	3.5E-06	1.3E-05
			BENZO(B)FLUORANTHENE	2.5E-07	NA	9.1E-08	NA	3.4E-07	Kidney	1.3E-05	NA	4.6E-06	1.7E-05
			Biphenyl	NC	NA	NC	NA		Kidney	1.2E-04	NA	3.2E-05	1.5E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	4.0E-02	NA	--	4.0E-02
			ARSENIC	3.8E-06	NA	5.3E-07	NA	4.3E-06	Skin	9.9E-02	NA	1.4E-02	1.1E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.2E-04	NA	--	1.2E-04
			VANADIUM	NC	NA	NC	NA		Kidney	4.5E-02	NA	--	4.5E-02
			CHEMICAL TOTAL	6.0E-06	--	1.3E-06	--	7E-06		1.8E-01	--	1.4E-02	2E-01
		EXPOSURE POINT TOTAL						7E-06					2E-01
	EXPOSURE MEDIUM TOTAL							7E-06					2E-01
RECEPTOR TOTAL								**2E-03**					**1E+03**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1E+03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**7.8E+00**
	--
TOTAL DEVELOPMENTAL HI =	**1.6E+00**
TOTAL ENDOCRINE HI =	**2.4E+01**
TOTAL EYE HI =	**3.7E-02**
TOTAL GI SYSTEM HI =	**2.3E-01**
TOTAL HEMATOLOGICAL HI =	**8.2E+00**
TOTAL IMMUNE SYSTEM HI =	**3.6E+01**
TOTAL KIDNEY HI =	**1.8E+01**
TOTAL LIVER HI =	**6.6E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**3.6E+01**
TOTAL NOAEL HI =	**8.1E+02**
	--
TOTAL SKIN HI =	**5.6E+00**
TOTAL RESPIRATORY HI =	**1.8E+01**

TABLE H-18
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	4.9E-06	NA	6.3E-07	NA	5.6E-06	Respiratory	3.6E-03	NA	4.6E-04	4.1E-03
			1,1,2-TRICHLOROETHANE	3.2E-07	NA	3.0E-08	NA	3.5E-07	Hematological	4.1E-03	NA	3.8E-04	4.4E-03
			1,1-DICHLOROETHANE	1.2E-07	NA	9.2E-09	NA	1.3E-07	Undetermined	3.0E-04	NA	2.4E-05	3.2E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.1E+01	NA	--	1.1E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.4E+00	NA	1.8E+00	3.2E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	3.0E+00	NA	--	3.0E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.5E-01	NA	1.0E-01	2.5E-01
			1,2-DICHLOROETHANE	2.0E-05	NA	9.7E-07	NA	2.1E-05		1.1E-01	NA	5.2E-03	1.1E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.2E-01	NA	1.9E-02	2.4E-01
			1,2-DICHLOROPROPANE	6.9E-06	NA	6.9E-07	NA	7.6E-06	Liver	6.2E-03	NA	6.2E-04	6.9E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	3.6E-02	NA	--	3.6E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	2.6E-02	NA	--	2.6E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.0E-01	NA	2.7E-01	5.7E-01
			1,4-DICHLOROBENZENE	1.3E-05	NA	9.0E-06	NA	2.2E-05	Endocrine	1.0E-01	NA	6.9E-02	1.7E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			2.0E-01	NA	--	2.0E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			1.5E-01	NA	--	1.5E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.9E-04	NA	2.9E-05	NA	2.2E-04	Immune system /	2.5E+00	NA	3.8E-01	2.9E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	2.1E+00	NA	7.4E-01	2.8E+00
			CHLOROFORM	1.7E-07	NA	1.5E-08	NA	1.9E-07	Liver	1.6E-03	NA	1.5E-04	1.7E-03
			CYCLOHEXANE, METHYL-	--	NA	--	NA		Kidney	--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.1E-01	NA	6.9E-02	1.8E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	2.4E-03	NA	--	2.4E-03
			METHYLENE CHLORIDE	6.4E-06	NA	2.4E-07	NA	6.6E-06	Liver	1.6E+00	NA	5.9E-02	1.6E+00
			METHYL-T-BUTYL ETHER	2.3E-07	NA	--	NA	2.3E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.4E-02	NA	9.2E-03	2.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.4E-02	NA	--	4.4E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			2.4E-01	NA	--	2.4E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.1E-08	NA	1.7E-06	NA	1.8E-06	Liver	2.6E-03	NA	1.6E-03	4.2E-03
			TOLUENE	NC	NA	NC	NA		Kidney	1.3E+00	NA	4.4E-01	1.7E+00
			TRICHLOROETHYLENE	2.8E-06	NA	--	NA	2.8E-06	Liver / Kidney	3.5E-01	NA	5.9E-02	4.1E-01
			VINYL CHLORIDE	3.2E-04	NA	--	NA	3.2E-04	Liver	4.3E-01	NA	--	4.3E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.8E-02	NA	--	4.8E-02
			1,4-DIOXANE	9.3E-06	NA	3.4E-08	NA	9.3E-06	Liver	9.1E-03	NA	3.3E-05	9.1E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	2.2E-02	NA	3.3E-03	2.6E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.2E-03	NA	--	6.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	2.5E-05	NA	--	NA	2.5E-05	NOAEL	1.8E+00	NA	--	1.8E+00
			Biphenyl	NC	NA	NC	NA		Kidney	2.9E-04	NA	--	2.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.7E-07	NA	1.0E-06	NA	1.7E-06	Liver	7.0E-03	NA	1.1E-02	1.8E-02
			ALDRIN	1.3E-06	NA	1.2E-07	NA	1.4E-06	Liver	7.2E-03	NA	6.6E-04	7.9E-03
			HEPTACHLOR EPOXIDE	8.5E-07	NA	--	NA	8.5E-07	Liver	2.1E-02	NA	--	2.1E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E+00	NA	--	1.5E+00
			ARSENIC	3.5E-04	NA	1.8E-06	NA	3.6E-04	Skin	2.3E+00	NA	1.2E-02	2.3E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	5.7E-01	NA	2.0E-02	5.9E-01
			BARIUM	NC	NA	NC	NA		Kidney	5.0E-02	NA	3.7E-03	5.3E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	5.1E-02	NA	3.8E-02	8.9E-02
			CADMIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.6E-01	2.7E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.5E-03	NA	6.8E-03	1.5E-02
			COBALT	NC	NA	NC	NA		NOAEL	1.4E-03	NA	--	1.4E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.6E+01	NA	1.9E-01	3.6E+01
			IRON	NC	NA	NC	NA			1.3E+01	NA	--	1.3E+01
			LEAD	--	NA	--	NA		Undetermined	--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	1.5E-01	NA	1.9E-02	1.7E-01
			MERCURY	NC	NA	NC	NA		Immune system	7.9E-02	NA	5.9E-03	8.5E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	3.3E-01	NA	8.6E-03	3.4E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	4.1E-02	NA	2.1E-04	4.1E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	1.4E-02	NA	1.1E-03	1.5E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	2.2E+01	NA	1.1E-01	2.2E+01
			VANADIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.4E-01	2.6E+00
			ZINC	NC	NA	NC	NA		Liver	2.0E+01	NA	6.4E-02	2.0E+01
			CHEMICAL TOTAL	9.5E-04	--	4.5E-05	--	1E-03		1.3E+02	--	5.5E+00	1E+02
		EXPOSURE POINT TOTAL						1E-03					1E+02
	EXPOSURE MEDIUM TOTAL							1E-03					1E+02

TABLE H-18
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.5E-05	NA	NA	2.5E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	1.6E+00	NA	1.6E+00
			1,1-DICHLOROETHANE	NA	6.7E-07	NA	NA	6.7E-07	Kidney	NA	2.4E-03	NA	2.4E-03
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.2E+02	NA	1.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	2.0E+00	NA	2.0E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	1.2E+00	NA	1.2E+00
			1,2-DICHLOROETHANE	NA	1.2E-04	NA	NA	1.2E-04	Nervous System	NA	1.9E+00	NA	1.9E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	2.7E+00	NA	2.7E+00
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	2.6E-01	NA	2.6E-01
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.8E-04	NA	NA	4.8E-04	Developmental	NA	1.6E-01	NA	1.6E-01
			1-CHLOROBUTANE	NA	--	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.3E-04	NA	NA	5.3E-04	Immune system	NA	6.6E+00	NA	6.6E+00
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	1.6E+01	NA	1.6E+01
			CHLOROFORM	NA	2.6E-06	NA	NA	2.6E-06	Liver	NA	3.4E-03	NA	3.4E-03
			CYCLOHEXANE, METHYL-	NA	--	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	2.0E-01	NA	2.0E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	7.3E-07	NA	NA	7.3E-07	Liver	NA	3.5E-01	NA	3.5E-01
			METHYL-T-BUTYL ETHER	NA	5.7E-07	NA	NA	5.7E-07	Liver / Kidney	NA	2.1E-03	NA	2.1E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	1.5E+00	NA	1.5E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	1.5E+00	NA	1.5E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.6E-08	NA	NA	2.6E-08	Nervous System	NA	7.4E-03	NA	7.4E-03
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	3.7E-01	NA	3.7E-01
			TRICHLOROETHYLENE	NA	4.9E-06	NA	NA	4.9E-06	Nervous System	NA	1.8E+00	NA	1.8E+00
			VINYL CHLORIDE	NA	4.3E-05	NA	NA	4.3E-05	Liver	NA	2.8E-01	NA	2.8E-01
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.9E+00	NA	1.9E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA		Nervous System	NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA		Developmental /				
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA		Respiratory				
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA		Nervous System	NA	1.1E+00	NA	1.1E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA		Liver / Nervous System /				
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.2E-03	--	--	1E-03		--	1.6E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02

TABLE H-18
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-2 FT)	CYCLOHEXANE, METHYL-	--	NA	--	NA		Kidney			--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.7E-06	NA	3.5E-06	1.0E-05
			BENZO(A)PYRENE	1.5E-07	NA	8.0E-08	NA	2.3E-07	Kidney	1.0E-06	NA	5.3E-07	1.6E-06
			BENZO(B)FLUORANTHENE	2.0E-08	NA	1.0E-08	NA	3.1E-08	Kidney	1.3E-06	NA	7.0E-07	2.0E-06
			Biphenyl	NC	NA	NC	NA		Kidney	1.2E-05	NA	4.9E-06	1.7E-05
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	4.3E-03	NA	--	4.3E-03
			ARSENIC	1.6E-06	NA	3.3E-07	NA	2.0E-06	Skin	1.1E-02	NA	2.1E-03	1.3E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.3E-05	NA	--	1.3E-05
			VANADIUM	NC	NA	NC	NA		Kidney	4.9E-03	NA	--	4.9E-03
			CHEMICAL TOTAL	1.8E-06	--	4.2E-07	--	2E-06		2.0E-02	--	2.1E-03	2E-02
		EXPOSURE POINT TOTAL						2E-06					2E-02
	EXPOSURE MEDIUM TOTAL							2E-06					2E-02
RECEPTOR TOTAL								**2E-03**					**3E+02**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**2.3E+00**
	--
TOTAL DEVELOPMENTAL HI =	**3.6E-01**
TOTAL ENDOCRINE HI =	**3.4E+00**
TOTAL EYE HI =	**1.5E-02**
TOTAL GI SYSTEM HI =	**8.9E-02**
TOTAL HEMATOLOGICAL HI =	**3.5E+00**
TOTAL IMMUNE SYSTEM HI =	**9.6E+00**
TOTAL KIDNEY HI =	**7.6E+00**
TOTAL LIVER HI =	**2.8E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**1.0E+01**
TOTAL NOAEL HI =	**2.3E+02**
	--
TOTAL SKIN HI =	**2.4E+00**
TOTAL RESPIRATORY HI =	**4.3E+00**

TABLE H-19
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	5.6E-08	NA	--	NA	5.6E-08	Respiratory	1.6E-04	NA	--	1.6E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E-02	NA	--	3.8E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	6.7E-03	NA	3.1E-03	9.8E-03
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	2.0E-03	NA	--	2.0E-03
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.4E-03	NA	1.1E-03	3.5E-03
			1,2-DICHLOROETHANE	7.7E-09	NA	--	NA	7.7E-09		1.6E-04	NA	--	1.6E-04
			1,2-DICHLOROPROPANE	2.8E-10	NA	--	NA	2.8E-10	Liver	1.0E-06	NA	--	1.0E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.4E-04	NA	1.1E-04	3.5E-04
			1,4-DICHLOROBENZENE	3.0E-09	NA	1.4E-09	NA	4.4E-09	Endocrine	9.4E-05	NA	4.3E-05	1.4E-04
			BENZENE	1.2E-08	NA	--	NA	1.2E-08	Immune system /	6.6E-04	NA	--	6.6E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	3.4E-04	NA	--	3.4E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	5.1E-05	NA	--	5.1E-05
			METHYLENE CHLORIDE	4.1E-09	NA	--	NA	4.1E-09	Liver	1.7E-03	NA	--	1.7E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.7E-05	NA	--	4.7E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	5.9E-11	NA	--	NA	5.9E-11	Liver	5.5E-05	NA	--	5.5E-05
			TOLUENE	NC	NA	NC	NA		Kidney	1.1E-03	NA	--	1.1E-03
			TRICHLOROETHYLENE - Kidney	2.6E-08	NA	--	NA	2.6E-08		--	NA	--	
			TRICHLOROETHYLENE - Liver & NHL	1.0E-07	NA	--	NA	1.0E-07	Liver / Kidney	6.4E-02	NA	--	6.4E-02
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.2E-04	NA	--	1.2E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			3.2E-03	NA	1.5E-03	4.7E-03
			BENZO(A)ANTHRACENE	2.4E-09	NA	1.5E-09	NA	3.9E-09	Kidney	2.8E-07	NA	1.7E-07	4.5E-07
			BENZO(A)PYRENE	2.6E-08	NA	1.6E-08	NA	4.2E-08	Kidney	3.0E-07	NA	1.8E-07	4.8E-07
			BENZO(B)FLUORANTHENE	3.8E-09	NA	2.3E-09	NA	6.1E-09	Kidney	4.4E-07	NA	2.6E-07	7.1E-07
			Biphenyl	NC	NA	NC	NA		Kidney	1.8E-04	NA	8.2E-05	2.6E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.5E-05	NA	8.9E-06	2.4E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.9E-03	NA	--	2.9E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	9.9E-04	NA	--	9.9E-04
			ARSENIC	4.2E-07	NA	9.6E-08	NA	5.1E-07	Skin	1.1E-02	NA	2.5E-03	1.3E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.4E-05	NA	--	1.4E-05
			COBALT	NC	NA	NC	NA		Endocrine	1.5E-03	NA	--	1.5E-03
			COPPER	NC	NA	NC	NA		Undetermined	1.2E-03	NA	--	1.2E-03
			MERCURY	NC	NA	NC	NA		Immune system	4.6E-04	NA	--	4.6E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	3.1E-02	NA	--	3.1E-02
			VANADIUM	NC	NA	NC	NA		Kidney	6.0E-03	NA	--	6.0E-03
			CHEMICAL TOTAL	6.6E-07	--	1.2E-07	--	8E-07		1.8E-01	--	8.4E-03	2E-01
		EXPOSURE POINT TOTAL						8E-07					2E-01
	EXPOSURE MEDIUM TOTAL							8E-07					2E-01
RECEPTOR TOTAL								**8E-07**					**2E-01**
							TOTAL RISK ACROSS ALL MEDIA	**8E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**2E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/2015
Checked by: BJR 04/09/2015

TOTAL GENERAL TOXICITY HI =	**1.2E-03**
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	--
TOTAL ENDOCRINE HI =	**1.2E-02**
	--
	--
TOTAL HEMATOLOGICAL HI =	**1.7E-03**
TOTAL IMMUNE SYSTEM HI =	**1.1E-03**
TOTAL KIDNEY HI =	**7.1E-02**
TOTAL LIVER HI =	**7.0E-02**
	--
TOTAL NERVOUS SYSTEM HI =	**2.9E-03**
TOTAL NOAEL HI =	**7.7E-02**
	--
TOTAL SKIN HI =	**1.3E-02**
TOTAL RESPIRATORY HI =	**1.6E-04**

TABLE H-20
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	4.5E-08	NA	--	NA	4.5E-08	Respiratory	6.5E-05	NA	--	6.5E-05
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.5E-02	NA	--	1.5E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.7E-03	NA	1.1E-03	3.7E-03
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.9E-04	NA	--	7.9E-04
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	9.5E-04	NA	3.8E-04	1.3E-03
			1,2-DICHLOROETHANE	6.1E-09	NA	--	NA	6.1E-09		6.5E-05	NA	--	6.5E-05
			1,2-DICHLOROPROPANE	2.2E-10	NA	--	NA	2.2E-10	Liver	3.9E-07	NA	--	3.9E-07
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	9.4E-05	NA	3.8E-05	1.3E-04
			1,4-DICHLOROBENZENE	2.4E-09	NA	9.7E-10	NA	3.4E-09	Endocrine	3.7E-05	NA	1.5E-05	5.2E-05
			BENZENE	9.8E-09	NA	--	NA	9.8E-09	Immune system /	2.6E-04	NA	--	2.6E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	1.4E-04	NA	--	1.4E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.0E-05	NA	--	2.0E-05
			METHYLENE CHLORIDE	1.4E-09	NA	--	NA	1.4E-09	Liver	6.9E-04	NA	--	6.9E-04
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.8E-05	NA	--	1.8E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.7E-11	NA	--	NA	4.7E-11	Liver	2.2E-05	NA	--	2.2E-05
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-04	NA	--	4.5E-04
			TRICHLOROETHYLENE	1.0E-07	NA	--	NA	1.0E-07	Liver / Kidney	2.5E-02	NA	--	2.5E-02
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.8E-05	NA	--	4.8E-05
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			1.3E-03	NA	5.2E-04	1.8E-03
			BENZO(A)ANTHRACENE	8.4E-10	NA	4.4E-10	NA	1.3E-09	Kidney	1.1E-07	NA	5.9E-08	1.7E-07
			BENZO(A)PYRENE	9.0E-09	NA	4.7E-09	NA	1.4E-08	Kidney	1.2E-07	NA	6.3E-08	1.8E-07
			BENZO(B)FLUORANTHENE	1.3E-09	NA	6.9E-10	NA	2.0E-09	Kidney	1.7E-07	NA	9.2E-08	2.7E-07
			Biphenyl	NC	NA	NC	NA		Kidney	7.0E-05	NA	2.8E-05	9.9E-05
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.9E-06	NA	3.1E-06	9.0E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.2E-03	NA	--	1.2E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	3.9E-04	NA	--	3.9E-04
			ARSENIC	3.3E-07	NA	6.7E-08	NA	4.0E-07	Skin	4.3E-03	NA	8.7E-04	5.2E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	5.6E-06	NA	--	5.6E-06
			COBALT	NC	NA	NC	NA		Endocrine	6.1E-04	NA	--	6.1E-04
			COPPER	NC	NA	NC	NA		Undetermined	4.9E-04	NA	--	4.9E-04
			MERCURY	NC	NA	NC	NA		Immune system	1.8E-04	NA	--	1.8E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	1.2E-02	NA	--	1.2E-02
			VANADIUM	NC	NA	NC	NA		Kidney	2.4E-03	NA	--	2.4E-03
			CHEMICAL TOTAL	5.1E-07	--	7.4E-08	--	6E-07		7.0E-02	--	2.9E-03	7E-02
		EXPOSURE POINT TOTAL						6E-07					7E-02
	EXPOSURE MEDIUM TOTAL							6E-07					7E-02
RECEPTOR TOTAL								**6E-07**					**7E-02**
							TOTAL RISK ACROSS ALL MEDIA	**6E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**7E-02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**4.7E-04**
	--
	--
TOTAL ENDOCRINE HI =	**4.4E-03**
	--
	--
TOTAL HEMATOLOGICAL HI =	**6.5E-04**
TOTAL IMMUNE SYSTEM HI =	**4.4E-04**
TOTAL KIDNEY HI =	**2.8E-02**
TOTAL LIVER HI =	**2.8E-02**
	--
TOTAL NERVOUS SYSTEM HI =	**1.2E-03**
TOTAL NOAEL HI =	**3.0E-02**
	--
TOTAL SKIN HI =	**5.2E-03**
TOTAL RESPIRATORY HI =	**6.5E-05**

TABLE H-21
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01

TABLE H-21
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	4.5E-07	NA	--	NA	4.5E-07	Respiratory	3.1E-04	NA	--	3.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			7.2E-02	NA	--	7.2E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.3E-02	NA	8.5E-03	2.1E-02
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	3.8E-03	NA	--	3.8E-03
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	4.6E-03	NA	3.0E-03	7.6E-03
			1,2-DICHLOROETHANE	6.1E-08	NA	--	NA	6.1E-08		3.1E-04	NA	--	3.1E-04
			1,2-DICHLOROPROPANE	2.2E-09	NA	--	NA	2.2E-09	Liver	1.9E-06	NA	--	1.9E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	4.5E-04	NA	3.0E-04	7.5E-04
			1,4-DICHLOROBENZENE	2.4E-08	NA	1.6E-08	NA	4.0E-08	Endocrine	1.8E-04	NA	1.2E-04	3.0E-04
			BENZENE	9.9E-08	NA	--	NA	9.9E-08	Immune system /	1.3E-03	NA	--	1.3E-03
			CHLOROBENZENE	NC	NA	NC	NA		Liver	6.5E-04	NA	--	6.5E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	9.7E-05	NA	--	9.7E-05
			METHYLENE CHLORIDE	1.4E-08	NA	--	NA	1.4E-08	Liver	3.3E-03	NA	--	3.3E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	8.9E-05	NA	--	8.9E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.7E-10	NA	--	NA	4.7E-10	Liver	1.0E-04	NA	--	1.0E-04
			TOLUENE	NC	NA	NC	NA		Kidney	2.2E-03	NA	--	2.2E-03
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.2E-01	NA	--	1.2E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	2.3E-04	NA	--	2.3E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			6.2E-03	NA	4.1E-03	1.0E-02
			BENZO(A)ANTHRACENE	8.4E-09	NA	7.2E-09	NA	1.6E-08	Kidney	5.4E-07	NA	4.6E-07	1.0E-06
			BENZO(A)PYRENE	9.0E-08	NA	7.7E-08	NA	1.7E-07	Kidney	5.8E-07	NA	4.9E-07	1.1E-06
			BENZO(B)FLUORANTHENE	1.3E-08	NA	1.1E-08	NA	2.4E-08	Kidney	8.4E-07	NA	7.2E-07	1.6E-06
			Biphenyl	NC	NA	NC	NA		Kidney	3.4E-04	NA	2.2E-04	5.6E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	2.8E-05	NA	2.4E-05	5.3E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.6E-03	NA	--	5.6E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	1.9E-03	NA	--	1.9E-03
			ARSENIC	3.3E-06	NA	1.1E-06	NA	4.4E-06	Skin	2.1E-02	NA	6.8E-03	2.7E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.7E-05	NA	--	2.7E-05
			COBALT	NC	NA	NC	NA		Endocrine	2.9E-03	NA	--	2.9E-03
			COPPER	NC	NA	NC	NA		Undetermined	2.4E-03	NA	--	2.4E-03
			MERCURY	NC	NA	NC	NA		Immune system	8.7E-04	NA	--	8.7E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	5.8E-02	NA	--	5.8E-02
			VANADIUM	NC	NA	NC	NA		Kidney	1.1E-02	NA	--	1.1E-02
			CHEMICAL TOTAL	5.1E-06	--	1.2E-06	--	6E-06		3.4E-01	--	2.3E-02	4E-01
		EXPOSURE POINT TOTAL						6E-06					4E-01
	EXPOSURE MEDIUM TOTAL							6E-06					4E-01

TABLE H-21
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	AIR	DUST AT SITE	1,1,2,2-TETRACHLOROETHANE	NA	2.2E-11	NA	NA	2.2E-11		NA	--	NA	
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.1E-05	NA	1.1E-05
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	3.5E-07	NA	3.5E-07
			1,2-DICHLOROETHANE	NA	3.0E-12	NA	NA	3.0E-12	Nervous System	NA	4.6E-08	NA	4.6E-08
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	7.3E-09	NA	7.3E-09
			1,3-DICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,4-DICHLOROBENZENE	NA	8.4E-12	NA	NA	8.4E-12	Developmental	NA	2.7E-09	NA	2.7E-09
			BENZENE	NA	2.4E-12	NA	NA	2.4E-12	Immune system	NA	2.9E-08	NA	2.9E-08
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	4.5E-08	NA	4.5E-08
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA			NA	1.1E-08	NA	1.1E-08
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	1.7E-09	NA	1.7E-09
			METHYLENE CHLORIDE	NA	1.2E-14	NA	NA	1.2E-14	Liver	NA	5.7E-09	NA	5.7E-09
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	3.1E-08	NA	3.1E-08
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA			NA	--	NA	
			TETRACHLOROETHYLENE	NA	1.0E-14	NA	NA	1.0E-14	Nervous System	NA	2.7E-09	NA	2.7E-09
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	6.0E-09	NA	6.0E-09
			TRICHLOROETHYLENE	NA	1.5E-11	NA	NA	1.5E-11	Nervous System	NA	5.2E-06	NA	5.2E-06
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	7.9E-08	NA	7.9E-08
			1,2,4,5-TETRACHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)ANTHRACENE	NA	2.2E-13	NA	NA	2.2E-13		NA	--	NA	
			BENZO(A)PYRENE	NA	2.3E-12	NA	NA	2.3E-12		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	3.4E-13	NA	NA	3.4E-13		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	3.3E-08	NA	3.3E-08
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	1.9E-04	NA	1.9E-04
			ANTIMONY	NA	NC	NA	NA			NA	--	NA	
			ARSENIC	NA	2.7E-09	NA	NA	2.7E-09	Developmental / Cardiovascular / Nervous system	NA	1.2E-04	NA	1.2E-04
			CHROMIUM	NA	NC	NA	NA			NA	--	NA	
			COBALT	NA	4.9E-10	NA	NA	4.9E-10	Respiratory	NA	2.5E-05	NA	2.5E-05
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MERCURY	NA	NC	NA	NA			NA	1.5E-07	NA	1.5E-07
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	9.8E-05	NA	9.8E-05
			CHEMICAL TOTAL	--	3.3E-09	--	--	3E-09		--	4.5E-04	--	5E-04
		EXPOSURE POINT TOTAL						3E-09					5E-04
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
TOTAL CARDIOVASCULAR HI =	**1.2E-04**
TOTAL DEVELOPMENTAL HI =	**1.2E-04**
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.3E+00**
TOTAL LIVER HI =	**9.3E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.7E-01**
TOTAL RESPIRATORY HI =	**9.0E-03**

TABLE H-22
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-22
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	2.5E-07	NA	--	NA	2.5E-07	Respiratory	1.7E-04	NA	--	1.7E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			4.0E-02	NA	--	4.0E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	7.1E-03	NA	3.3E-03	1.0E-02
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	2.1E-03	NA	--	2.1E-03
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.5E-03	NA	1.2E-03	3.7E-03
			1,2-DICHLOROETHANE	3.4E-08	NA	--	NA	3.4E-08		1.7E-04	NA	--	1.7E-04
			1,2-DICHLOROPROPANE	1.2E-09	NA	--	NA	1.2E-09	Liver	1.1E-06	NA	--	1.1E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.5E-04	NA	1.2E-04	3.7E-04
			1,4-DICHLOROBENZENE	1.3E-08	NA	6.2E-09	NA	2.0E-08	Endocrine	9.9E-05	NA	4.6E-05	1.4E-04
			BENZENE	5.5E-08	NA	--	NA	5.5E-08	Immune system /	7.0E-04	NA	--	7.0E-04
			CHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-04	NA	--	3.6E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	5.4E-05	NA	--	5.4E-05
			METHYLENE CHLORIDE	7.9E-09	NA	--	NA	7.9E-09	Liver	1.8E-03	NA	--	1.8E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.9E-05	NA	--	4.9E-05
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	2.6E-10	NA	--	NA	2.6E-10	Liver	5.8E-05	NA	--	5.8E-05
			TOLUENE	NC	NA	NC	NA		Kidney	1.2E-03	NA	--	1.2E-03
			TRICHLOROETHYLENE	5.6E-07	NA	--	NA	5.6E-07	Liver / Kidney	6.8E-02	NA	--	6.8E-02
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.3E-04	NA	--	1.3E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			3.4E-03	NA	1.6E-03	5.0E-03
			BENZO(A)ANTHRACENE	4.7E-09	NA	2.8E-09	NA	7.5E-09	Kidney	3.0E-07	NA	1.8E-07	4.8E-07
			BENZO(A)PYRENE	5.0E-08	NA	3.0E-08	NA	8.0E-08	Kidney	3.2E-07	NA	1.9E-07	5.1E-07
			BENZO(B)FLUORANTHENE	7.3E-09	NA	4.4E-09	NA	1.2E-08	Kidney	4.7E-07	NA	2.8E-07	7.5E-07
			Biphenyl	NC	NA	NC	NA		Kidney	1.9E-04	NA	8.7E-05	2.7E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.6E-05	NA	9.5E-06	2.5E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.1E-03	NA	--	3.1E-03
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	1.1E-03	NA	--	1.1E-03
			ARSENIC	1.8E-06	NA	4.3E-07	NA	2.3E-06	Skin	1.1E-02	NA	2.7E-03	1.4E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.5E-05	NA	--	1.5E-05
			COBALT	NC	NA	NC	NA		Endocrine	1.6E-03	NA	--	1.6E-03
			COPPER	NC	NA	NC	NA		Undetermined	1.3E-03	NA	--	1.3E-03
			MERCURY	NC	NA	NC	NA		Immune system	4.8E-04	NA	--	4.8E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	3.2E-02	NA	--	3.2E-02
			VANADIUM	NC	NA	NC	NA		Kidney	6.3E-03	NA	--	6.3E-03
			CHEMICAL TOTAL	2.8E-06	--	4.7E-07	--	3E-06		1.9E-01	--	9.0E-03	2E-01
		EXPOSURE POINT TOTAL						3E-06					2E-01
	EXPOSURE MEDIUM TOTAL							3E-06					2E-01

TABLE H-22
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
	--
	--
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.3E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**8.8E-03**

TABLE H-23
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	2.9E-06	NA	3.5E-07	NA	3.2E-06	Respiratory	8.4E-03	NA	1.0E-03	9.4E-03
			1,1,2-TRICHLOROETHANE	1.9E-07	NA	1.7E-08	NA	2.0E-07	Hematological	9.5E-03	NA	8.6E-04	1.0E-02
			1,1-DICHLOROETHANE	6.8E-08	NA	5.3E-09	NA	7.3E-08	Undetermined	7.0E-04	NA	5.5E-05	7.5E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.5E+01	NA	--	2.5E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.3E+00	NA	4.1E+00	7.4E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.1E+00	NA	--	7.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-01	NA	2.3E-01	5.8E-01
			1,2-DICHLOROETHANE	1.2E-05	NA	5.6E-07	NA	1.2E-05		2.5E-01	NA	1.2E-02	2.6E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	5.1E-01	NA	4.5E-02	5.5E-01
			1,2-DICHLOROPROPANE	4.0E-06	NA	3.9E-07	NA	4.4E-06	Liver	1.5E-02	NA	1.4E-03	1.6E-02
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	8.5E-02	NA	--	8.5E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	6.1E-02	NA	--	6.1E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.9E-01	NA	6.2E-01	1.3E+00
			1,4-DICHLOROBENZENE	7.8E-06	NA	5.0E-06	NA	1.3E-05	Endocrine	2.4E-01	NA	1.6E-01	4.0E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			4.7E-01	NA	--	4.7E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			3.4E-01	NA	--	3.4E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.1E-04	NA	1.7E-05	NA	1.3E-04	Immune system /	5.8E+00	NA	8.9E-01	6.7E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.8E+00	NA	1.7E+00	6.5E+00
			CHLOROFORM	9.9E-08	NA	8.7E-09	NA	1.1E-07	Liver	3.7E-03	NA	3.3E-04	4.1E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.7E-01	NA	1.6E-01	4.2E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	5.6E-03	NA	--	5.6E-03
			METHYLENE CHLORIDE	2.0E-05	NA	7.6E-07	NA	2.1E-05	Liver	3.6E+00	NA	1.4E-01	3.8E+00
			METHYL-T-BUTYL ETHER	1.4E-07	NA	--	NA	1.4E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	3.3E-02	NA	2.1E-02	5.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.0E-01	NA	--	1.0E-01
			P-CHLOROTOLUENE	NC	NA	NC	NA			5.7E-01	NA	--	5.7E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.6E-09	NA	9.8E-07	NA	9.9E-07	Liver	6.1E-03	NA	3.5E-03	9.6E-03
			TOLUENE	NC	NA	NC	NA		Kidney	2.9E+00	NA	1.0E+00	3.9E+00
			TRICHLOROETHYLENE	1.7E-06	NA	--	NA	1.7E-06		--	NA	--	
			TRICHLOROETHYLENE	1.3E-06	NA	--	NA	1.3E-06	Liver / Kidney	8.2E-01	NA	--	8.2E-01
			VINYL CHLORIDE	3.6E-04	NA	1.9E-05	NA	3.8E-04	Liver	9.9E-01	NA	5.4E-02	1.0E+00
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.1E-01	NA	--	1.1E-01
			1,4-DIOXANE	5.4E-06	NA	2.0E-08	NA	5.4E-06	Liver	2.1E-02	NA	7.7E-05	2.1E-02
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	5.2E-02	NA	7.4E-03	6.0E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.4E-02	NA	--	1.4E-02
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	1.5E-05	NA	--	NA	1.5E-05		4.3E+00	NA	--	4.3E+00
			Biphenyl	NC	NA	NC	NA		Kidney	6.9E-04	NA	--	6.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	3.9E-07	NA	5.8E-07	NA	9.8E-07	Liver	1.6E-02	NA	2.4E-02	4.1E-02
			ALDRIN	7.4E-07	NA	6.5E-08	NA	8.0E-07	Liver	1.7E-02	NA	1.5E-03	1.8E-02
			HEPTACHLOR EPOXIDE	5.0E-07	NA	--	NA	5.0E-07	Liver	4.9E-02	NA	--	4.9E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.5E+00	NA	--	3.5E+00
			ARSENIC	2.1E-04	NA	1.4E-06	NA	2.1E-04	Skin	5.3E+00	NA	3.5E-02	5.4E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	1.3E+00	NA	5.9E-02	1.4E+00
			BARIUM	NC	NA	NC	NA		Kidney	1.2E-01	NA	1.1E-02	1.3E-01
			BERYLLIUM	NC	NA	NC	NA		GI system	1.2E-01	NA	1.1E-01	2.3E-01
			CADMIUM	NC	NA	NC	NA		Kidney	5.2E+00	NA	1.4E+00	6.5E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.0E-02	NA	2.0E-02	4.0E-02
			COBALT	NC	NA	NC	NA		Endocrine	1.6E+01	NA	--	1.6E+01
			COPPER	NC	NA	NC	NA		Undetermined	8.5E+01	NA	5.6E-01	8.5E+01
			IRON	NC	NA	NC	NA			3.1E+01	NA	--	3.1E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	3.5E-01	NA	5.7E-02	4.1E-01
			MERCURY	NC	NA	NC	NA		Immune system	1.9E-01	NA	1.7E-02	2.0E-01
			NICKEL	NC	NA	NC	NA		General Toxicity	7.7E-01	NA	2.5E-02	7.9E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	9.5E-02	NA	6.3E-04	9.6E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	3.3E-02	NA	3.3E-03	3.7E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	5.0E+01	NA	3.3E-01	5.1E+01
			VANADIUM	NC	NA	NC	NA		Kidney	5.1E+00	NA	1.3E+00	6.4E+00
			CHEMICAL TOTAL	7.4E-04	--	4.6E-05	--	8E-04		3.1E+02	--	1.3E+01	3E+02
		EXPOSURE POINT TOTAL						8E-04					3E+02
	EXPOSURE MEDIUM TOTAL							8E-04					3E+02

TABLE H-23
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.7E-05	NA	NA	2.7E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.8E-06	NA	NA	1.8E-06		NA	6.7E+00	NA	6.7E+00
			1,1-DICHLOROETHANE	NA	7.2E-07	NA	NA	7.2E-07	Kidney	NA	1.1E-02	NA	1.1E-02
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	5.2E+02	NA	5.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	8.6E+00	NA	8.6E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	5.4E+00	NA	5.4E+00
			1,2-DICHLOROETHANE	NA	1.3E-04	NA	NA	1.3E-04	Nervous System	NA	8.1E+00	NA	8.1E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	1.2E+01	NA	1.2E+01
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	1.1E+00	NA	1.1E+00
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	5.2E-04	NA	NA	5.2E-04	Developmental	NA	6.9E-01	NA	6.9E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.8E-04	NA	NA	5.8E-04	Immune system	NA	2.9E+01	NA	2.9E+01
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	6.7E+01	NA	6.7E+01
			CHLOROFORM	NA	2.8E-06	NA	NA	2.8E-06	Liver	NA	1.5E-02	NA	1.5E-02
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	8.7E-01	NA	8.7E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	4.2E-06	NA	NA	4.2E-06	Liver	NA	1.5E+00	NA	1.5E+00
			METHYL-T-BUTYL ETHER	NA	6.2E-07	NA	NA	6.2E-07	Liver / Kidney	NA	9.3E-03	NA	9.3E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	6.7E+00	NA	6.7E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	6.7E+00	NA	6.7E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.9E-08	NA	NA	2.9E-08	Nervous System	NA	3.2E-02	NA	3.2E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	1.6E+00	NA	1.6E+00
			TRICHLOROETHYLENE	NA	6.9E-06	NA	NA	6.9E-06		NA	--	NA	
			TRICHLOROETHYLENE	NA	4.0E-06	NA	NA	4.0E-06	Nervous System	NA	7.6E+00	NA	7.6E+00
			VINYL CHLORIDE	NA	9.3E-05	NA	NA	9.3E-05	Liver	NA	1.2E+00	NA	1.2E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	8.2E+00	NA	8.2E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system /				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	5.0E+00	NA	5.0E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.4E-03	--	--	1E-03		--	6.9E+02	--	7E+02

TABLE H-23
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
		EXPOSURE POINT TOTAL						1E-03					7E+02
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	1.6E-06	NA	--	NA	1.6E-06	Respiratory	4.5E-03	NA	--	4.5E-03
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.0E+00	NA	--	1.0E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.9E-01	NA	5.2E-02	2.4E-01
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	5.5E-02	NA	--	5.5E-02
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.6E-02	NA	1.9E-02	8.5E-02
			1,2-DICHLOROETHANE	2.1E-07	NA	--	NA	2.1E-07		4.6E-03	NA	--	4.6E-03
			1,2-DICHLOROPROPANE	7.7E-09	NA	--	NA	7.7E-09	Liver	2.8E-05	NA	--	2.8E-05
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.5E-03	NA	1.8E-03	8.4E-03
			1,4-DICHLOROBENZENE	8.4E-08	NA	2.3E-08	NA	1.1E-07	Endocrine	2.6E-03	NA	7.3E-04	3.3E-03
			BENZENE	3.4E-07	NA	--	NA	3.4E-07	Immune system /	1.8E-02	NA	--	1.8E-02
			CHLOROBENZENE	NC	NA	NC	NA		Liver	9.5E-03	NA	--	9.5E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.4E-03	NA	--	1.4E-03
			METHYLENE CHLORIDE	2.6E-07	NA	--	NA	2.6E-07	Liver	4.8E-02	NA	--	4.8E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.3E-03	NA	--	1.3E-03
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.6E-09	NA	--	NA	1.6E-09	Liver	1.5E-03	NA	--	1.5E-03
			TOLUENE	NC	NA	NC	NA		Kidney	3.1E-02	NA	--	3.1E-02
			TRICHLOROETHYLENE	3.5E-06	NA	--	NA	3.5E-06	Liver / Kidney	1.8E+00	NA	--	1.8E+00
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	3.3E-03	NA	--	3.3E-03
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			8.9E-02	NA	2.5E-02	1.1E-01
			BENZO(A)ANTHRACENE	1.6E-07	NA	5.6E-08	NA	2.1E-07	Kidney	7.8E-06	NA	2.8E-06	1.1E-05
			BENZO(A)PYRENE	1.7E-06	NA	6.1E-07	NA	2.3E-06	Kidney	8.4E-06	NA	3.0E-06	1.1E-05
			BENZO(B)FLUORANTHENE	2.4E-07	NA	8.8E-08	NA	3.3E-07	Kidney	1.2E-05	NA	4.4E-06	1.7E-05
			Biphenyl	NC	NA	NC	NA		Kidney	4.9E-03	NA	1.4E-03	6.3E-03
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	4.1E-04	NA	1.5E-04	5.6E-04
			ALUMINUM	NC	NA	NC	NA		Nervous System	8.2E-02	NA	--	8.2E-02
			ANTIMONY	NC	NA	NC	NA		Hematological	2.7E-02	NA	--	2.7E-02
			ARSENIC	1.2E-05	NA	1.6E-06	NA	1.3E-05	Skin	3.0E-01	NA	4.2E-02	3.4E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.9E-04	NA	--	3.9E-04
			COBALT	NC	NA	NC	NA		Endocrine	4.3E-02	NA	--	4.3E-02
			COPPER	NC	NA	NC	NA		Undetermined	3.4E-02	NA	--	3.4E-02
			MERCURY	NC	NA	NC	NA		Immune system	1.3E-02	NA	--	1.3E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	8.5E-01	NA	--	8.5E-01
			VANADIUM	NC	NA	NC	NA		Kidney	1.7E-01	NA	--	1.7E-01
			CHEMICAL TOTAL	2.0E-05	--	2.4E-06	--	2E-05		4.9E+00	--	1.4E-01	5E+00
		EXPOSURE POINT TOTAL						2E-05					5E+00
	EXPOSURE MEDIUM TOTAL							2E-05					5E+00
RECEPTOR TOTAL								**2E-03**					**1E+03**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1E+03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**7.8E+00**
	--
TOTAL DEVELOPMENTAL HI =	**1.6E+00**
TOTAL ENDOCRINE HI =	**2.4E+01**
TOTAL EYE HI =	**3.7E-02**
TOTAL GI SYSTEM HI =	**2.3E-01**
TOTAL HEMATOLOGICAL HI =	**8.2E+00**
TOTAL IMMUNE SYSTEM HI =	**3.6E+01**
TOTAL KIDNEY HI =	**2.0E+01**
TOTAL LIVER HI =	**6.8E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**3.6E+01**
TOTAL NOAEL HI =	**8.1E+02**
	--
TOTAL SKIN HI =	**5.9E+00**
TOTAL RESPIRATORY HI =	**1.8E+01**

TABLE H-24
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	4.9E-06	NA	6.3E-07	NA	5.6E-06	Respiratory	3.6E-03	NA	4.6E-04	4.1E-03
			1,1,2-TRICHLOROETHANE	3.2E-07	NA	3.0E-08	NA	3.5E-07	Hematological	4.1E-03	NA	3.8E-04	4.4E-03
			1,1-DICHLOROETHANE	1.2E-07	NA	9.2E-09	NA	1.3E-07	Undetermined	3.0E-04	NA	2.4E-05	3.2E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.1E+01	NA	--	1.1E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.4E+00	NA	1.8E+00	3.2E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	3.0E+00	NA	--	3.0E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.5E-01	NA	1.0E-01	2.5E-01
			1,2-DICHLOROETHANE	2.0E-05	NA	9.7E-07	NA	2.1E-05		1.1E-01	NA	5.2E-03	1.1E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.2E-01	NA	1.9E-02	2.4E-01
			1,2-DICHLOROPROPANE	6.9E-06	NA	6.9E-07	NA	7.6E-06	Liver	6.2E-03	NA	6.2E-04	6.9E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	3.6E-02	NA	--	3.6E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	2.6E-02	NA	--	2.6E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.0E-01	NA	2.7E-01	5.7E-01
			1,4-DICHLOROBENZENE	1.3E-05	NA	9.0E-06	NA	2.2E-05	Endocrine	1.0E-01	NA	6.9E-02	1.7E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			2.0E-01	NA	--	2.0E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			1.5E-01	NA	--	1.5E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.9E-04	NA	2.9E-05	NA	2.2E-04	Immune system /	2.5E+00	NA	3.8E-01	2.9E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	2.1E+00	NA	7.4E-01	2.8E+00
			CHLOROFORM	1.7E-07	NA	1.5E-08	NA	1.9E-07	Liver	1.6E-03	NA	1.5E-04	1.7E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.1E-01	NA	6.9E-02	1.8E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	2.4E-03	NA	--	2.4E-03
			METHYLENE CHLORIDE	6.4E-06	NA	2.4E-07	NA	6.6E-06	Liver	1.6E+00	NA	5.9E-02	1.6E+00
			METHYL-T-BUTYL ETHER	2.3E-07	NA	--	NA	2.3E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.4E-02	NA	9.2E-03	2.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.4E-02	NA	--	4.4E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			2.4E-01	NA	--	2.4E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.1E-08	NA	1.7E-06	NA	1.8E-06	Liver	2.6E-03	NA	1.6E-03	4.2E-03
			TOLUENE	NC	NA	NC	NA		Kidney	1.3E+00	NA	4.4E-01	1.7E+00
			TRICHLOROETHYLENE	2.8E-06	NA	--	NA	2.8E-06	Liver / Kidney	3.5E-01	NA	5.9E-02	4.1E-01
			VINYL CHLORIDE	3.2E-04	NA	--	NA	3.2E-04	Liver	4.3E-01	NA	--	4.3E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.8E-02	NA	--	4.8E-02
			1,4-DIOXANE	9.3E-06	NA	3.4E-08	NA	9.3E-06	Liver	9.1E-03	NA	3.3E-05	9.1E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	2.2E-02	NA	3.3E-03	2.6E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.2E-03	NA	--	6.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	2.5E-05	NA	--	NA	2.5E-05		1.8E+00	NA	--	1.8E+00
			Biphenyl	NC	NA	NC	NA		Kidney	2.9E-04	NA	--	2.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.7E-07	NA	1.0E-06	NA	1.7E-06	Liver	7.0E-03	NA	1.1E-02	1.8E-02
			ALDRIN	1.3E-06	NA	1.2E-07	NA	1.4E-06	Liver	7.2E-03	NA	6.6E-04	7.9E-03
			HEPTACHLOR EPOXIDE	8.5E-07	NA	--	NA	8.5E-07	Liver	2.1E-02	NA	--	2.1E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E+00	NA	--	1.5E+00
			ARSENIC	3.5E-04	NA	1.8E-06	NA	3.6E-04	Skin	2.3E+00	NA	1.2E-02	2.3E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	5.7E-01	NA	2.0E-02	5.9E-01
			BARIUM	NC	NA	NC	NA		Kidney	5.0E-02	NA	3.7E-03	5.3E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	5.1E-02	NA	3.8E-02	8.9E-02
			CADMIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.6E-01	2.7E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.5E-03	NA	6.8E-03	1.5E-02
			COBALT	NC	NA	NC	NA		Endocrine	6.8E+00	NA	--	6.8E+00
			COPPER	NC	NA	NC	NA		Undetermined	3.6E+01	NA	1.9E-01	3.6E+01
			IRON	NC	NA	NC	NA			1.3E+01	NA	--	1.3E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	1.5E-01	NA	1.9E-02	1.7E-01
			MERCURY	NC	NA	NC	NA		Immune system	7.9E-02	NA	5.9E-03	8.5E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	3.3E-01	NA	8.6E-03	3.4E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	4.1E-02	NA	2.1E-04	4.1E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	1.4E-02	NA	1.1E-03	1.5E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	2.2E+01	NA	1.1E-01	2.2E+01
			VANADIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.4E-01	2.6E+00
			ZINC	NC	NA	NC	NA		Liver	2.0E+01	NA	6.4E-02	2.0E+01
			CHEMICAL TOTAL	9.5E-04	--	4.5E-05	--	1E-03		1.3E+02	--	5.5E+00	1E+02
		EXPOSURE POINT TOTAL						1E-03					1E+02
	EXPOSURE MEDIUM TOTAL							1E-03					1E+02

TABLE H-24
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.5E-05	NA	NA	2.5E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	1.6E+00	NA	1.6E+00
			1,1-DICHLOROETHANE	NA	6.7E-07	NA	NA	6.7E-07	Kidney	NA	2.4E-03	NA	2.4E-03
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.2E+02	NA	1.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	2.0E+00	NA	2.0E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	1.2E+00	NA	1.2E+00
			1,2-DICHLOROETHANE	NA	1.2E-04	NA	NA	1.2E-04	Nervous System	NA	1.9E+00	NA	1.9E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	2.7E+00	NA	2.7E+00
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	2.6E-01	NA	2.6E-01
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.8E-04	NA	NA	4.8E-04	Developmental	NA	1.6E-01	NA	1.6E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.3E-04	NA	NA	5.3E-04	Immune system	NA	6.6E+00	NA	6.6E+00
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	1.6E+01	NA	1.6E+01
			CHLOROFORM	NA	2.6E-06	NA	NA	2.6E-06	Liver	NA	3.4E-03	NA	3.4E-03
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	2.0E-01	NA	2.0E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	7.3E-07	NA	NA	7.3E-07	Liver	NA	3.5E-01	NA	3.5E-01
			METHYL-T-BUTYL ETHER	NA	5.7E-07	NA	NA	5.7E-07	Liver / Kidney	NA	2.1E-03	NA	2.1E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	1.5E+00	NA	1.5E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	1.5E+00	NA	1.5E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.6E-08	NA	NA	2.6E-08	Nervous System	NA	7.4E-03	NA	7.4E-03
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	3.7E-01	NA	3.7E-01
			TRICHLOROETHYLENE	NA	4.9E-06	NA	NA	4.9E-06	Nervous System	NA	1.8E+00	NA	1.8E+00
			VINYL CHLORIDE	NA	4.3E-05	NA	NA	4.3E-05	Liver	NA	2.8E-01	NA	2.8E-01
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.9E+00	NA	1.9E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	1.1E+00	NA	1.1E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.2E-03	--	--	1E-03		--	1.6E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02

TABLE H-24
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	6.7E-07	NA	--	NA	6.7E-07	Respiratory	4.9E-04	NA	--	4.9E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.1E-01	NA	--	1.1E-01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.0E-02	NA	8.0E-03	2.8E-02
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	5.9E-03	NA	--	5.9E-03
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	7.1E-03	NA	2.8E-03	9.9E-03
			1,2-DICHLOROETHANE	9.1E-08	NA	--	NA	9.1E-08		4.9E-04	NA	--	4.9E-04
			1,2-DICHLOROPROPANE	3.3E-09	NA	--	NA	3.3E-09	Liver	3.0E-06	NA	--	3.0E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	7.0E-04	NA	2.8E-04	9.8E-04
			1,4-DICHLOROBENZENE	3.6E-08	NA	1.4E-08	NA	5.0E-08	Endocrine	2.8E-04	NA	1.1E-04	3.9E-04
			BENZENE	1.5E-07	NA	--	NA	1.5E-07	Immune system /	2.0E-03	NA	--	2.0E-03
			CHLOROBENZENE	NC	NA	NC	NA		Liver	1.0E-03	NA	--	1.0E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.5E-04	NA	--	1.5E-04
			METHYLENE CHLORIDE	2.1E-08	NA	--	NA	2.1E-08	Liver	5.2E-03	NA	--	5.2E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.4E-04	NA	--	1.4E-04
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	7.0E-10	NA	--	NA	7.0E-10	Liver	1.6E-04	NA	--	1.6E-04
			TOLUENE	NC	NA	NC	NA		Kidney	3.4E-03	NA	--	3.4E-03
			TRICHLOROETHYLENE	1.5E-06	NA	--	NA	1.5E-06	Liver / Kidney	1.9E-01	NA	--	1.9E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	3.6E-04	NA	--	3.6E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			9.6E-03	NA	3.8E-03	1.3E-02
			BENZO(A)ANTHRACENE	1.3E-08	NA	6.5E-09	NA	1.9E-08	Kidney	8.4E-07	NA	4.3E-07	1.3E-06
			BENZO(A)PYRENE	1.3E-07	NA	7.0E-08	NA	2.0E-07	Kidney	9.0E-07	NA	4.7E-07	1.4E-06
			BENZO(B)FLUORANTHENE	2.0E-08	NA	1.0E-08	NA	3.0E-08	Kidney	1.3E-06	NA	6.8E-07	2.0E-06
			Biphenyl	NC	NA	NC	NA		Kidney	5.3E-04	NA	2.1E-04	7.4E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	4.4E-05	NA	2.3E-05	6.7E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	8.7E-03	NA	--	8.7E-03
			ANTIMONY	NC	NA	NC	NA		Hematological	2.9E-03	NA	--	2.9E-03
			ARSENIC	5.0E-06	NA	9.9E-07	NA	5.9E-06	Skin	3.2E-02	NA	6.4E-03	3.9E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	4.2E-05	NA	--	4.2E-05
			COBALT	NC	NA	NC	NA		Endocrine	4.6E-03	NA	--	4.6E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.7E-03	NA	--	3.7E-03
			MERCURY	NC	NA	NC	NA		Immune system	1.4E-03	NA	--	1.4E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	9.1E-02	NA	--	9.1E-02
			VANADIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	--	1.8E-02
			CHEMICAL TOTAL	7.6E-06	--	1.1E-06	--	9E-06		5.2E-01	--	2.2E-02	5E-01
		EXPOSURE POINT TOTAL						9E-06					5E-01
	EXPOSURE MEDIUM TOTAL							9E-06					5E-01
RECEPTOR TOTAL								**2E-03**					**3E+02**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**2.3E+00**
	--
TOTAL DEVELOPMENTAL HI =	**3.6E-01**
TOTAL ENDOCRINE HI =	**1.0E+01**
TOTAL EYE HI =	**1.5E-02**
TOTAL GI SYSTEM HI =	**8.9E-02**
TOTAL HEMATOLOGICAL HI =	**3.5E+00**
TOTAL IMMUNE SYSTEM HI =	**9.6E+00**
TOTAL KIDNEY HI =	**7.8E+00**
TOTAL LIVER HI =	**2.8E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**9.1E+00**
TOTAL NOAEL HI =	**2.3E+02**
	--
TOTAL SKIN HI =	**2.4E+00**
TOTAL RESPIRATORY HI =	**4.3E+00**

TABLE H-25
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	1,1,2,2-TETRACHLOROETHANE	1.3E-10	NA	5.9E-09	NA	6.1E-09	General Toxicity	9.4E-08	NA	4.2E-06	4.2E-06
			1,1,2-TRICHLOROETHANE	--	NA	--	NA		Liver				
			1,1-DICHLOROETHANE	2.4E-13	NA	9.1E-12	NA	9.4E-12	NOAEL	1.5E-09	NA	5.6E-08	5.8E-08
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.0E-05	NA	7.6E-03	7.6E-03
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	2.2E-05	NA	--	2.2E-05
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.8E-06	NA	1.3E-03	1.3E-03
			1,2-DICHLOROETHANE	2.7E-10	NA	6.6E-09	NA	6.9E-09	Kidney	1.1E-05	NA	2.5E-04	2.6E-04
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver				
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.3E-07	NA	--	2.3E-07
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.9E-05	NA	5.9E-03	5.9E-03
			1,4-DICHLOROBENZENE	8.2E-11	NA	1.9E-08	NA	1.9E-08	Endocrine	1.5E-05	NA	3.5E-03	3.5E-03
			1-CHLOROBUTANE	NC	NA	NC	NA					--	
			2-CHLOROTOLUENE	NC	NA	NC	NA					--	
			3-METHYL HEXANE	NC	NA	NC	NA					--	
			BENZENE	8.3E-09	NA	6.7E-07	NA	6.8E-07	Immune system /	1.1E-03	NA	8.5E-02	8.6E-02
			CHLOROBENZENE	NC	NA	NC	NA		Liver	6.8E-04	NA	1.0E-01	1.0E-01
			CHLOROFORM	5.2E-12	NA	2.1E-10	NA	2.1E-10	Liver	1.2E-07	NA	4.7E-06	4.8E-06
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			DIMETHYLSULFIDE	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver	3.3E-05	NA	8.2E-03	8.3E-03
			M+P-XYLENE	NC	NA	NC	NA		Nervous System			--	
			METHYLENE CHLORIDE	5.0E-13	NA	1.0E-11	NA	1.1E-11	Liver	2.9E-07	NA	5.9E-06	6.2E-06
			METHYL-T-BUTYL ETHER	2.1E-13	NA	--	NA	2.1E-13	Liver	2.7E-08	NA	--	2.7E-08
			NAPHTHALENE	NC	NA	NC	NA		Nervous System	3.5E-07	NA	8.7E-05	8.7E-05
			O-XYLENE	NC	NA	NC	NA		Nervous System			--	
			P-CHLOROTOLUENE	NC	NA	NC	NA					--	
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			SULFUR DIOXIDE	NC	NA	NC	NA					--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	5.3E-13	NA	2.7E-08	NA	2.7E-08	Liver	1.8E-07	NA	3.5E-05	3.5E-05
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	2.9E-05	NA	4.8E-03	4.8E-03
			TRICHLOROETHYLENE	2.7E-11	NA	--	NA	2.7E-11	Liver / Kidney	1.4E-04	NA	9.3E-03	9.4E-03
			VINYL CHLORIDE	9.1E-10	NA	--	NA	9.1E-10	Liver	2.9E-05	NA	--	2.9E-05
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System	1.8E-05	NA	--	1.8E-05
			1,4-DIOXANE	1.2E-09	NA	2.2E-09	NA	3.4E-09	Liver	1.6E-06	NA	3.1E-06	4.8E-06
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	1.2E-05	NA	7.4E-04	7.5E-04
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	7.3E-06	NA	--	7.3E-06
			3-NITROANILINE	NC	NA	NC	NA					--	
			ANILINE	--	NA	--	NA						
			Biphenyl	NC	NA	NC	NA		Kidney	1.4E-06	NA	--	1.4E-06
			BIS(2-ETHYLHEXYL)PHTHALATE	--	NA	--	NA		Reproductive				
			ALDRIN	--	NA	--	NA		Liver				
			HEPTACHLOR EPOXIDE	--	NA	--	NA		Liver			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System			--	
			ARSENIC	--	NA	--	NA		Skin				
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /				
			BARIUM	NC	NA	NC	NA		Kidney				
			BERYLLIUM	NC	NA	NC	NA		GI system				
			CADMIUM	NC	NA	NC	NA						
			CHROMIUM	NC	NA	NC	NA		NOAEL				
			COBALT	NC	NA	NC	NA		Endocrine			--	
			COPPER	NC	NA	NC	NA		Undetermined				
			IRON	NC	NA	NC	NA					--	
			LEAD	--	NA	--	NA					--	
			MANGANESE	NC	NA	NC	NA		Nervous System				
			MERCURY	NC	NA	NC	NA		Kidney				
			NICKEL	NC	NA	NC	NA		General Toxicity				
			SELENIUM	NC	NA	NC	NA		Skin / Liver				
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory				
			THALLIUM	NC	NA	NC	NA		NOAEL				
			VANADIUM	NC	NA	NC	NA		Kidney				
			ZINC	NC	NA	NC	NA		Hematological				
			CHEMICAL TOTAL	1.1E-08	--	7.3E-07	--	7E-07		2.1E-03	--	2.3E-01	2E-01
		EXPOSURE POINT TOTAL						7E-07					2E-01
	EXPOSURE MEDIUM TOTAL							7E-07					2E-01

TABLE H-25
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - TRENCH AIR	1,1,2,2-TETRACHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	--	NA	NA						
			1,1-DICHLOROETHANE	NA	6.6E-08	NA	NA	6.6E-08	Kidney	NA	5.8E-04	NA	5.8E-04
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.1E+01	NA	1.1E+01
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	4.0E-01	NA	4.0E-01
			1,2-DICHLOROETHANE	NA	1.7E-05	NA	NA	1.7E-05	Nervous System	NA	6.5E-01	NA	6.5E-01
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Liver	NA	4.4E-02	NA	4.4E-02
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.7E-05	NA	NA	4.7E-05	Developmental	NA	1.5E+00	NA	1.5E+00
			1-CHLOROBUTANE	NA	NC	NA	NA						
			2-CHLOROTOLUENE	NA	NC	NA	NA						
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	1.2E-03	NA	NA	1.2E-03	Immune system	NA	1.4E+02	NA	1.4E+02
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	4.5E+01	NA	4.5E+01
			CHLOROFORM	NA	2.3E-06	NA	NA	2.3E-06	Liver	NA	2.9E-02	NA	2.9E-02
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear	NA	2.1E-01	NA	2.1E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	1.7E-09	NA	NA	1.7E-09	Liver	NA	1.2E-02	NA	1.2E-02
			METHYL-T-BUTYL ETHER	NA	3.0E-09	NA	NA	3.0E-09	Liver / Kidney	NA	3.2E-04	NA	3.2E-04
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	4.2E+00	NA	4.2E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System				
			P-CHLOROTOLUENE	NA	NC	NA	NA						
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	1.2E-07	NA	NA	1.2E-07	Nervous System	NA	8.2E-01	NA	8.2E-01
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	5.1E+00	NA	5.1E+00
			TRICHLOROETHYLENE	NA	3.4E-06	NA	NA	3.4E-06	Nervous System	NA	1.1E-01	NA	1.1E-01
			VINYL CHLORIDE	NA	3.4E-05	NA	NA	3.4E-05	Liver	NA	7.1E+00	NA	7.1E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.6E+01	NA	1.6E+01
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA						
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA						
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY (5)	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA		Respiratory				
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA						
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.3E-03	--	--	1E-03		--	2.3E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02
	EXPOSURE MEDIUM TOTAL							1E-03					2E+02
GROUNDWATER TOTAL								**1E-03**					**2E+02**

TABLE H-25
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	6.6E-08	NA	--	NA	6.6E-08	General Toxicity	4.6E-05	NA	--	4.6E-05
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.7E-02	NA	--	2.7E-02
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.2E-03	NA	1.6E-03	6.8E-03
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	1.4E-03	NA	--	1.4E-03
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.5E-03	NA	7.5E-04	3.3E-03
			1,2-DICHLOROETHANE	9.0E-09	NA	--	NA	9.0E-09	Kidney	3.4E-04	NA	--	3.4E-04
			1,2-DICHLOROPROPANE	3.2E-10	NA	--	NA	3.2E-10	Liver	7.0E-06	NA	--	7.0E-06
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	2.5E-04	NA	7.4E-05	3.2E-04
			1,4-DICHLOROBENZENE	3.5E-09	NA	1.1E-09	NA	4.6E-09	Endocrine	6.5E-04	NA	2.0E-04	8.5E-04
			BENZENE	1.4E-08	NA	--	NA	1.4E-08	Immune system /	1.8E-03	NA	--	1.8E-03
			CHLOROBENZENE	NC	NA	NC	NA		Liver	6.9E-04	NA	--	6.9E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver	7.1E-04	NA	--	7.1E-04
			METHYLENE CHLORIDE	2.1E-09	NA	--	NA	2.1E-09	Liver	1.2E-03	NA	--	1.2E-03
			O-XYLENE	NC	NA	NC	NA		Nervous System	1.6E-04	NA	--	1.6E-04
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.9E-11	NA	--	NA	6.9E-11	Liver	2.3E-05	NA	--	2.3E-05
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	8.0E-04	NA	--	8.0E-04
			TRICHLOROETHYLENE	1.5E-07	NA	--	NA	1.5E-07	Liver / Kidney	7.5E-01	NA	--	7.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System	4.2E-04	NA	--	4.2E-04
			1,2,4,5-TETRACHLOROBENZENE	NC	NA	NC	NA			2.3E-02	NA	6.8E-03	2.9E-02
			BENZO(A)ANTHRACENE	1.2E-09	NA	4.8E-10	NA	1.7E-09	Kidney	5.9E-07	NA	2.3E-07	8.2E-07
			BENZO(A)PYRENE	1.3E-08	NA	5.2E-09	NA	1.8E-08	Kidney	6.3E-07	NA	2.5E-07	8.8E-07
			BENZO(B)FLUORANTHENE	1.9E-09	NA	7.5E-10	NA	2.7E-09	Kidney	9.3E-07	NA	3.6E-07	1.3E-06
			Biphenyl	NC	NA	NC	NA		Kidney	6.2E-03	NA	1.9E-03	8.1E-03
			NAPHTHALENE	NC	NA	NC	NA		Nervous System	3.5E-06	NA	1.4E-06	4.8E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.1E-02	NA	--	2.1E-02
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological	6.9E-03	NA	--	6.9E-03
			ARSENIC	4.9E-07	NA	7.3E-08	NA	5.6E-07	Skin	7.6E-02	NA	1.1E-02	8.7E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.5E-04	NA	--	1.5E-04
			COBALT	NC	NA	NC	NA		Endocrine	1.1E-03	NA	--	1.1E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.5E-02	NA	--	3.5E-02
			MERCURY	NC	NA	NC	NA		Kidney	4.8E-04	NA	--	4.8E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	2.7E-03	NA	--	2.7E-03
			VANADIUM	NC	NA	NC	NA		Kidney	3.0E-01	NA	--	3.0E-01
			CHEMICAL TOTAL	7.5E-07	--	8.0E-08	--	8E-07		1.3E+00	--	2.3E-02	1E+00
		EXPOSURE POINT TOTAL						8E-07					1E+00
	EXPOSURE MEDIUM TOTAL							8E-07					1E+00
SOIL	AIR	DUST AT SITE	1,1,2,2-TETRACHLOROETHANE	NA	9.9E-12	NA	NA	9.9E-12		NA	--	NA	
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.2E-05	NA	1.2E-05
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	3.9E-07	NA	3.9E-07
			1,2-DICHLOROETHANE	NA	1.3E-12	NA	NA	1.3E-12	Nervous System	NA	5.1E-08	NA	5.1E-08
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	9.9E-09	NA	9.9E-09
			1,3-DICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,4-DICHLOROBENZENE	NA	3.7E-12	NA	NA	3.7E-12	Developmental	NA	1.2E-07	NA	1.2E-07
			BENZENE	NA	1.1E-12	NA	NA	1.1E-12	Immune system	NA	1.2E-07	NA	1.2E-07
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	5.0E-08	NA	5.0E-08
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA			NA	1.2E-07	NA	1.2E-07
			ETHYLBENZENE	NA	NC	NA	NA		ear	NA	2.1E-09	NA	2.1E-09
			METHYLENE CHLORIDE	NA	5.4E-15	NA	NA	5.4E-15	Liver	NA	3.8E-08	NA	3.8E-08
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	8.5E-08	NA	8.5E-08
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA			NA	--	NA	
			TETRACHLOROETHYLENE	NA	4.4E-15	NA	NA	4.4E-15	Nervous System	NA	3.0E-08	NA	3.0E-08
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	6.6E-08	NA	6.6E-08
			TRICHLOROETHYLENE	NA	6.8E-12	NA	NA	6.8E-12	Nervous System	NA	2.2E-07	NA	2.2E-07
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	2.2E-07	NA	2.2E-07
			1,2,4,5-TETRACHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)ANTHRACENE	NA	9.7E-14	NA	NA	9.7E-14		NA	--	NA	
			BENZO(A)PYRENE	NA	1.0E-12	NA	NA	1.0E-12		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	1.5E-13	NA	NA	1.5E-13		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	

TABLE H-25
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	3.6E-07	NA	3.6E-07
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	2.1E-03	NA	2.1E-03
			ANTIMONY	NA	NC	NA	NA			NA	--	NA	
			ARSENIC	NA	1.2E-09	NA	NA	1.2E-09	Developmental / Cardiovascular / Nervous system	NA	1.3E-03	NA	1.3E-03
			CHROMIUM	NA	NC	NA	NA		Respiratory	NA	1.5E-05	NA	1.5E-05
			COBALT	NA	2.2E-10	NA	NA	2.2E-10	Respiratory	NA	8.4E-05	NA	8.4E-05
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MERCURY	NA	NC	NA	NA			NA	1.7E-05	NA	1.7E-05
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	1.1E-03	NA	1.1E-03
			CHEMICAL TOTAL	--	1.5E-09	--	--	1E-09		--	4.7E-03	--	5E-03
		EXPOSURE POINT TOTAL						1E-09					5E-03

RECEPTOR TOTAL	**1E-03**		**2E+02**
TOTAL RISK ACROSS ALL MEDIA	**1E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**	**2E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**4.0E-01**
TOTAL CARDIOVASCULAR HI =	**1.3E-03**
TOTAL DEVELOPMENTAL HI =	**1.5E+00**
TOTAL ENDOCRINE HI =	**2.0E-02**
	--
	--
TOTAL HEMATOLOGICAL HI =	**9.7E-02**
TOTAL IMMUNE SYSTEM HI =	**1.4E+02**
TOTAL KIDNEY HI =	**1.1E+00**
TOTAL LIVER HI =	**8.1E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**2.3E+01**
TOTAL NOAEL HI =	**5.6E+01**
	--
TOTAL SKIN HI =	**8.7E-02**
TOTAL RESPIRATORY HI =	**4.2E+00**

TABLE H-26
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.2E-05	NA	--	1.2E-05
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	5.4E-05	NA	--	5.4E-05
			BENZO(A)ANTHRACENE	1.0E-08	NA	6.2E-09	NA	1.6E-08	Kidney	1.2E-06	NA	7.1E-07	1.9E-06
			BENZO(A)PYRENE	1.4E-07	NA	8.2E-08	NA	2.2E-07	Kidney	1.6E-06	NA	9.5E-07	2.5E-06
			BENZO(B)FLUORANTHENE	3.9E-08	NA	2.3E-08	NA	6.3E-08	Kidney	4.5E-06	NA	2.7E-06	7.3E-06
			Biphenyl	NC	NA	NC	NA		Kidney	7.8E-07	NA	3.6E-07	1.1E-06
			DIBENZO(A,H)ANTHRACENE	3.4E-08	NA	2.0E-08	NA	5.5E-08	Kidney	4.0E-07	NA	2.4E-07	6.3E-07
			INDENO(1,2,3-CD)PYRENE	1.1E-08	NA	6.4E-09	NA	1.7E-08	Kidney	1.2E-06	NA	7.4E-07	2.0E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.2E-03	NA	--	5.2E-03
			ARSENIC	2.2E-07	NA	5.0E-08	NA	2.6E-07	Skin	5.6E-03	NA	1.3E-03	6.9E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.7E-06	NA	--	8.7E-06
			COBALT	NC	NA	NC	NA		Endocrine	5.0E-03	NA	--	5.0E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.9E-03	NA	--	3.9E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	2.9E-04	NA	--	2.9E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	4.5E-02	NA	--	4.5E-02
			VANADIUM	NC	NA	NC	NA		Kidney	4.4E-03	NA	--	4.4E-03
			CHEMICAL TOTAL	4.5E-07	--	1.9E-07	--	6E-07		7.0E-02	--	1.3E-03	7E-02
		EXPOSURE POINT TOTAL						6E-07					7E-02
	EXPOSURE MEDIUM TOTAL							6E-07					7E-02
RECEPTOR TOTAL								**6E-07**					**7E-02**
							TOTAL RISK ACROSS ALL MEDIA	**6E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**7E-02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/2015
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**5.4E-05**
	--
	--
TOTAL ENDOCRINE HI =	**5.0E-03**
	--
	--
	--
	--
TOTAL KIDNEY HI =	**4.4E-03**
TOTAL LIVER HI =	**1.2E-05**
	--
TOTAL NERVOUS SYSTEM HI =	**5.5E-03**
TOTAL NOAEL HI =	**4.9E-02**
	--
TOTAL SKIN HI =	**6.9E-03**
	--

TABLE H-27
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.8E-06	NA	--	4.8E-06
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	2.1E-05	NA	--	2.1E-05
			BENZO(A)ANTHRACENE	3.5E-09	NA	1.9E-09	NA	5.4E-09	Kidney	4.7E-07	NA	2.5E-07	7.2E-07
			BENZO(A)PYRENE	4.7E-08	NA	2.5E-08	NA	7.2E-08	Kidney	6.3E-07	NA	3.3E-07	9.6E-07
			BENZO(B)FLUORANTHENE	1.4E-08	NA	7.1E-09	NA	2.1E-08	Kidney	1.8E-06	NA	9.5E-07	2.7E-06
			Biphenyl	NC	NA	NC	NA		Kidney	3.1E-07	NA	1.3E-07	4.3E-07
			DIBENZO(A,H)ANTHRACENE	1.2E-08	NA	6.2E-09	NA	1.8E-08	Kidney	1.6E-07	NA	8.2E-08	2.4E-07
			INDENO(1,2,3-CD)PYRENE	3.7E-09	NA	1.9E-09	NA	5.6E-09	Kidney	4.9E-07	NA	2.6E-07	7.4E-07
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.1E-03	NA	--	2.1E-03
			ARSENIC	1.7E-07	NA	3.4E-08	NA	2.0E-07	Skin	2.2E-03	NA	4.5E-04	2.7E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.5E-06	NA	--	3.5E-06
			COBALT	NC	NA	NC	NA		Endocrine	2.0E-03	NA	--	2.0E-03
			COPPER	NC	NA	NC	NA		Undetermined	1.6E-03	NA	--	1.6E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	1.2E-04	NA	--	1.2E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	1.8E-02	NA	--	1.8E-02
			VANADIUM	NC	NA	NC	NA		Kidney	1.7E-03	NA	--	1.7E-03
			CHEMICAL TOTAL	2.5E-07	--	7.6E-08	--	3E-07		2.8E-02	--	4.5E-04	3E-02
		EXPOSURE POINT TOTAL						3E-07					3E-02
	EXPOSURE MEDIUM TOTAL							3E-07					3E-02
RECEPTOR TOTAL								**3E-07**					**3E-02**
							TOTAL RISK ACROSS ALL MEDIA	**3E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E-02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**2.1E-05**
	--
	--
TOTAL ENDOCRINE HI =	**2.0E-03**
	--
	--
	--
	--
TOTAL KIDNEY HI =	**1.8E-03**
TOTAL LIVER HI =	**4.8E-06**
	--
TOTAL NERVOUS SYSTEM HI =	**2.2E-03**
TOTAL NOAEL HI =	**2.0E-02**
	--
TOTAL SKIN HI =	**2.7E-03**
	--

TABLE H-28
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-28
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.3E-05	NA	--	2.3E-05
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.0E-04	NA	--	1.0E-04
			BENZO(A)ANTHRACENE	3.6E-08	NA	3.1E-08	NA	6.6E-08	Kidney	2.3E-06	NA	2.0E-06	4.2E-06
			BENZO(A)PYRENE	4.7E-07	NA	4.1E-07	NA	8.8E-07	Kidney	3.0E-06	NA	2.6E-06	5.6E-06
			BENZO(B)FLUORANTHENE	1.4E-07	NA	1.2E-07	NA	2.5E-07	Kidney	8.7E-06	NA	7.4E-06	1.6E-05
			Biphenyl	NC	NA	NC	NA		Kidney	1.5E-06	NA	9.8E-07	2.5E-06
			DIBENZO(A,H)ANTHRACENE	1.2E-07	NA	1.0E-07	NA	2.2E-07	Kidney	7.5E-07	NA	6.5E-07	1.4E-06
			INDENO(1,2,3-CD)PYRENE	3.7E-08	NA	3.2E-08	NA	6.8E-08	Kidney	2.3E-06	NA	2.0E-06	4.4E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	9.9E-03	NA	--	9.9E-03
			ARSENIC	1.7E-06	NA	5.6E-07	NA	2.3E-06	Skin	1.1E-02	NA	3.5E-03	1.4E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.7E-05	NA	--	1.7E-05
			COBALT	NC	NA	NC	NA		Endocrine	9.5E-03	NA	--	9.5E-03
			COPPER	NC	NA	NC	NA		Undetermined	7.5E-03	NA	--	7.5E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	5.6E-04	NA	--	5.6E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	8.6E-02	NA	--	8.6E-02
			VANADIUM	NC	NA	NC	NA		Kidney	8.4E-03	NA	--	8.4E-03
			CHEMICAL TOTAL	2.5E-06	--	1.2E-06	--	4E-06		1.3E-01	--	3.5E-03	1E-01
		EXPOSURE POINT TOTAL						4E-06					1E-01
	EXPOSURE MEDIUM TOTAL							4E-06					1E-01
SOIL	AIR	DUST AT SITE	ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	3.9E-10	NA	3.9E-10
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	3.5E-08	NA	3.5E-08
			BENZO(A)ANTHRACENE	NA	9.2E-13	NA	NA	9.2E-13		NA	--	NA	
			BENZO(A)PYRENE	NA	1.2E-11	NA	NA	1.2E-11		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	3.5E-12	NA	NA	3.5E-12		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			DIBENZO(A,H)ANTHRACENE	NA	3.3E-12	NA	NA	3.3E-12		NA	--	NA	
			INDENO(1,2,3-CD)PYRENE	NA	9.5E-13	NA	NA	9.5E-13		NA	--	NA	
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	3.4E-04	NA	3.4E-04
			ARSENIC	NA	1.4E-09	NA	NA	1.4E-09	Cardiovascular / Nervous	NA	6.1E-05	NA	6.1E-05
			CHROMIUM	NA	NC	NA	NA			NA	--	NA	
			COBALT	NA	1.6E-09	NA	NA	1.6E-09	Respiratory	NA	8.2E-05	NA	8.2E-05
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MANGANESE	NA	NC	NA	NA		Nervous System	NA	2.7E-04	NA	2.7E-04
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	7.2E-05	NA	7.2E-05
			CHEMICAL TOTAL	--	3.0E-09	--	--	3E-09		--	8.2E-04	--	8E-04
		EXPOSURE POINT TOTAL						3E-09					8E-04
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
TOTAL CARDIOVASCULAR HI =	**6.1E-05**
TOTAL DEVELOPMENTAL HI =	**6.1E-05**
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.1E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**8.7E-03**

TABLE H-29
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01

TABLE H-29
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.3E-05	NA	--	1.3E-05
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	5.7E-05	NA	--	5.7E-05
			BENZO(A)ANTHRACENE	2.0E-08	NA	1.2E-08	NA	3.2E-08	Kidney	1.3E-06	NA	7.6E-07	2.0E-06
			BENZO(A)PYRENE	2.6E-07	NA	1.6E-07	NA	4.2E-07	Kidney	1.7E-06	NA	1.0E-06	2.7E-06
			BENZO(B)FLUORANTHENE	7.5E-08	NA	4.5E-08	NA	1.2E-07	Kidney	4.8E-06	NA	2.9E-06	7.7E-06
			Biphenyl	NC	NA	NC	NA		Kidney	8.3E-07	NA	3.8E-07	1.2E-06
			DIBENZO(A,H)ANTHRACENE	6.6E-08	NA	3.9E-08	NA	1.0E-07	Kidney	4.2E-07	NA	2.5E-07	6.7E-07
			INDENO(1,2,3-CD)PYRENE	2.0E-08	NA	1.2E-08	NA	3.3E-08	Kidney	1.3E-06	NA	7.8E-07	2.1E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.5E-03	NA	--	5.5E-03
			ARSENIC	9.5E-07	NA	2.2E-07	NA	1.2E-06	Skin	5.9E-03	NA	1.4E-03	7.3E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	9.3E-06	NA	--	9.3E-06
			COBALT	NC	NA	NC	NA		Endocrine	5.3E-03	NA	--	5.3E-03
			COPPER	NC	NA	NC	NA		Undetermined	4.2E-03	NA	--	4.2E-03
			MANGANESE	NC	NA	NC	NA		Nervous System	3.1E-04	NA	--	3.1E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	4.8E-02	NA	--	4.8E-02
			VANADIUM	NC	NA	NC	NA		Kidney	4.7E-03	NA	--	4.7E-03
			CHEMICAL TOTAL	1.4E-06	--	4.9E-07	--	2E-06		7.4E-02	--	1.4E-03	8E-02
		EXPOSURE POINT TOTAL						2E-06					8E-02
	EXPOSURE MEDIUM TOTAL							2E-06					8E-02
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
	--
	--
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**8.6E-03**

TABLE H-30
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	2.9E-06	NA	3.5E-07	NA	3.2E-06	Respiratory	8.4E-03	NA	1.0E-03	9.4E-03
			1,1,2-TRICHLOROETHANE	1.9E-07	NA	1.7E-08	NA	2.0E-07	Hematological	9.5E-03	NA	8.6E-04	1.0E-02
			1,1-DICHLOROETHANE	6.8E-08	NA	5.3E-09	NA	7.3E-08	Undetermined	7.0E-04	NA	5.5E-05	7.5E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.5E+01	NA	--	2.5E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.3E+00	NA	4.1E+00	7.4E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.1E+00	NA	--	7.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-01	NA	2.3E-01	5.8E-01
			1,2-DICHLOROETHANE	1.2E-05	NA	5.6E-07	NA	1.2E-05		2.5E-01	NA	1.2E-02	2.6E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	5.1E-01	NA	4.5E-02	5.5E-01
			1,2-DICHLOROPROPANE	4.0E-06	NA	3.9E-07	NA	4.4E-06	Liver	1.5E-02	NA	1.4E-03	1.6E-02
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	8.5E-02	NA	--	8.5E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	6.1E-02	NA	--	6.1E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.9E-01	NA	6.2E-01	1.3E+00
			1,4-DICHLOROBENZENE	7.8E-06	NA	5.0E-06	NA	1.3E-05	Endocrine	2.4E-01	NA	1.6E-01	4.0E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			4.7E-01	NA	--	4.7E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			3.4E-01	NA	--	3.4E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.1E-04	NA	1.7E-05	NA	1.3E-04	Immune system /	5.8E+00	NA	8.9E-01	6.7E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.8E+00	NA	1.7E+00	6.5E+00
			CHLOROFORM	9.9E-08	NA	8.7E-09	NA	1.1E-07	Liver	3.7E-03	NA	3.3E-04	4.1E-03
			CYCLOHEXANE, METHYL-	--	NA	--	NA		Kidney	--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.7E-01	NA	1.6E-01	4.2E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	5.6E-03	NA	--	5.6E-03
			METHYLENE CHLORIDE	2.0E-05	NA	7.6E-07	NA	2.1E-05	Liver	3.6E+00	NA	1.4E-01	3.8E+00
			METHYL-T-BUTYL ETHER	1.4E-07	NA	--	NA	1.4E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	3.3E-02	NA	2.1E-02	5.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.0E-01	NA	--	1.0E-01
			P-CHLOROTOLUENE	NC	NA	NC	NA			5.7E-01	NA	--	5.7E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.6E-09	NA	9.8E-07	NA	9.9E-07	Liver	6.1E-03	NA	3.5E-03	9.6E-03
			TOLUENE	NC	NA	NC	NA		Kidney	2.9E+00	NA	1.0E+00	3.9E+00
			TRICHLOROETHYLENE	1.7E-06	NA	--	NA	1.7E-06	Liver / Kidney	--	NA	--	
			TRICHLOROETHYLENE	1.3E-06	NA	--	NA	1.3E-06	Liver / Kidney	8.2E-01	NA	--	8.2E-01
			VINYL CHLORIDE	3.6E-04	NA	1.9E-05	NA	3.8E-04	Liver	9.9E-01	NA	5.4E-02	1.0E+00
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.1E-01	NA	--	1.1E-01
			1,4-DIOXANE	5.4E-06	NA	2.0E-08	NA	5.4E-06	Liver	2.1E-02	NA	7.7E-05	2.1E-02
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	5.2E-02	NA	7.4E-03	6.0E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.4E-02	NA	--	1.4E-02
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	1.5E-05	NA	--	NA	1.5E-05	NOAEL	4.3E+00	NA	--	4.3E+00
			Biphenyl	NC	NA	NC	NA		Kidney	6.9E-04	NA	--	6.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	3.9E-07	NA	5.8E-07	NA	9.8E-07	Liver	1.6E-02	NA	2.4E-02	4.1E-02
			ALDRIN	7.4E-07	NA	6.5E-08	NA	8.0E-07	Liver	1.7E-02	NA	1.5E-03	1.8E-02
			HEPTACHLOR EPOXIDE	5.0E-07	NA	--	NA	5.0E-07	Liver	4.9E-02	NA	--	4.9E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.5E+00	NA	--	3.5E+00
			ARSENIC	2.1E-04	NA	1.4E-06	NA	2.1E-04	Skin	5.3E+00	NA	3.5E-02	5.4E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	1.3E+00	NA	5.9E-02	1.4E+00
			BARIUM	NC	NA	NC	NA		Kidney	1.2E-01	NA	1.1E-02	1.3E-01
			BERYLLIUM	NC	NA	NC	NA		GI system	1.2E-01	NA	1.1E-01	2.3E-01
			CADMIUM	NC	NA	NC	NA		Kidney	5.2E+00	NA	1.4E+00	6.5E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.0E-02	NA	2.0E-02	4.0E-02
			COBALT	NC	NA	NC	NA		NOAEL	3.2E-03	NA	--	3.2E-03
			COPPER	NC	NA	NC	NA		Undetermined	8.5E+01	NA	5.6E-01	8.5E+01
			IRON	NC	NA	NC	NA			3.1E+01	NA	--	3.1E+01
			LEAD	--	NA	--	NA		Undetermined	--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	3.5E-01	NA	5.7E-02	4.1E-01
			MERCURY	NC	NA	NC	NA		Immune system	1.9E-01	NA	1.7E-02	2.0E-01
			NICKEL	NC	NA	NC	NA		General Toxicity	7.7E-01	NA	2.5E-02	7.9E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	9.5E-02	NA	6.3E-04	9.6E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	3.3E-02	NA	3.3E-03	3.7E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	5.0E+01	NA	3.3E-01	5.1E+01
			VANADIUM	NC	NA	NC	NA		Kidney	5.1E+00	NA	1.3E+00	6.4E+00
			CHEMICAL TOTAL	7.4E-04	--	4.6E-05	--	8E-04		3.0E+02	--	1.3E+01	3E+02
		EXPOSURE POINT TOTAL						8E-04					3E+02
	EXPOSURE MEDIUM TOTAL							8E-04					3E+02

TABLE H-30
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.7E-05	NA	NA	2.7E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.8E-06	NA	NA	1.8E-06		NA	6.7E+00	NA	6.7E+00
			1,1-DICHLOROETHANE	NA	7.2E-07	NA	NA	7.2E-07	Kidney	NA	1.1E-02	NA	1.1E-02
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	5.2E+02	NA	5.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	8.6E+00	NA	8.6E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	5.4E+00	NA	5.4E+00
			1,2-DICHLOROETHANE	NA	1.3E-04	NA	NA	1.3E-04	Nervous System	NA	8.1E+00	NA	8.1E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	1.2E+01	NA	1.2E+01
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	1.1E+00	NA	1.1E+00
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	5.2E-04	NA	NA	5.2E-04	Developmental	NA	6.9E-01	NA	6.9E-01
			1-CHLOROBUTANE	NA	--	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.8E-04	NA	NA	5.8E-04	Immune system	NA	2.9E+01	NA	2.9E+01
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	6.7E+01	NA	6.7E+01
			CHLOROFORM	NA	2.8E-06	NA	NA	2.8E-06	Liver	NA	1.5E-02	NA	1.5E-02
			CYCLOHEXANE, METHYL-	NA	--	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	8.7E-01	NA	8.7E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	4.2E-06	NA	NA	4.2E-06	Liver	NA	1.5E+00	NA	1.5E+00
			METHYL-T-BUTYL ETHER	NA	6.2E-07	NA	NA	6.2E-07	Liver / Kidney	NA	9.3E-03	NA	9.3E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	6.7E+00	NA	6.7E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	6.7E+00	NA	6.7E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.9E-08	NA	NA	2.9E-08	Nervous System	NA	3.2E-02	NA	3.2E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	1.6E+00	NA	1.6E+00
			TRICHLOROETHYLENE	NA	6.9E-06	NA	NA	6.9E-06	Nervous System	NA	--	NA	
			TRICHLOROETHYLENE	NA	4.0E-06	NA	NA	4.0E-06	Nervous System	NA	7.6E+00	NA	7.6E+00
			VINYL CHLORIDE	NA	9.3E-05	NA	NA	9.3E-05	Liver	NA	1.2E+00	NA	1.2E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	8.2E+00	NA	8.2E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA		Nervous System	NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA		Developmental /				
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA		Respiratory				
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA		Nervous System	NA	5.0E+00	NA	5.0E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA		Liver / Nervous System /				
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.4E-03	--	--	1E-03		--	6.9E+02	--	7E+02
		EXPOSURE POINT TOTAL						1E-03					7E+02

TABLE H-30
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	3.3E-04	NA	--	3.3E-04
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.5E-03	NA	--	1.5E-03
			BENZO(A)ANTHRACENE	6.6E-07	NA	2.4E-07	NA	9.0E-07	Kidney	3.3E-05	NA	1.2E-05	4.5E-05
			BENZO(A)PYRENE	8.7E-06	NA	3.2E-06	NA	1.2E-05	Kidney	4.4E-05	NA	1.6E-05	6.0E-05
			BENZO(B)FLUORANTHENE	2.5E-06	NA	9.1E-07	NA	3.4E-06	Kidney	1.3E-04	NA	4.6E-05	1.7E-04
			Biphenyl	NC	NA	NC	NA		Kidney	2.2E-05	NA	6.1E-06	2.8E-05
			DIBENZO(A,H)ANTHRACENE	2.2E-06	NA	7.9E-07	NA	3.0E-06	Kidney	1.1E-05	NA	4.0E-06	1.5E-05
			INDENO(1,2,3-CD)PYRENE	6.8E-07	NA	2.5E-07	NA	9.3E-07	Kidney	3.4E-05	NA	1.2E-05	4.7E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.4E-01	NA	--	1.4E-01
			ARSENIC	6.0E-06	NA	8.3E-07	NA	6.8E-06	Skin	1.5E-01	NA	2.2E-02	1.8E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.4E-04	NA	--	2.4E-04
			COBALT	NC	NA	NC	NA		NOAEL	2.8E-05	NA	--	2.8E-05
			COPPER	NC	NA	NC	NA		Undetermined	1.1E-01	NA	--	1.1E-01
			MANGANESE	NC	NA	NC	NA		Nervous System	8.1E-03	NA	--	8.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	1.3E+00	NA	--	1.3E+00
			VANADIUM	NC	NA	NC	NA		Kidney	1.2E-01	NA	--	1.2E-01
			CHEMICAL TOTAL	2.1E-05	--	6.2E-06	--	3E-05		1.8E+00	--	2.2E-02	2E+00
		EXPOSURE POINT TOTAL						3E-05					2E+00
	EXPOSURE MEDIUM TOTAL							3E-05					2E+00

RECEPTOR TOTAL	**2E-03**		**1E+03**
TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**	**1E+03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**7.8E+00**
	--
TOTAL DEVELOPMENTAL HI =	**1.6E+00**
TOTAL ENDOCRINE HI =	**7.8E+00**
TOTAL EYE HI =	**3.7E-02**
TOTAL GI SYSTEM HI =	**2.3E-01**
TOTAL HEMATOLOGICAL HI =	**8.2E+00**
TOTAL IMMUNE SYSTEM HI =	**3.6E+01**
TOTAL KIDNEY HI =	**1.8E+01**
TOTAL LIVER HI =	**6.6E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**4.1E+01**
TOTAL NOAEL HI =	**8.1E+02**
	--
TOTAL SKIN HI =	**5.7E+00**
TOTAL RESPIRATORY HI =	**1.8E+01**

TABLE H-31
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	4.9E-06	NA	6.3E-07	NA	5.6E-06	Respiratory	3.6E-03	NA	4.6E-04	4.1E-03
			1,1,2-TRICHLOROETHANE	3.2E-07	NA	3.0E-08	NA	3.5E-07	Hematological	4.1E-03	NA	3.8E-04	4.4E-03
			1,1-DICHLOROETHANE	1.2E-07	NA	9.2E-09	NA	1.3E-07	Undetermined	3.0E-04	NA	2.4E-05	3.2E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.1E+01	NA	--	1.1E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.4E+00	NA	1.8E+00	3.2E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	3.0E+00	NA	--	3.0E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.5E-01	NA	1.0E-01	2.5E-01
			1,2-DICHLOROETHANE	2.0E-05	NA	9.7E-07	NA	2.1E-05		1.1E-01	NA	5.2E-03	1.1E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.2E-01	NA	1.9E-02	2.4E-01
			1,2-DICHLOROPROPANE	6.9E-06	NA	6.9E-07	NA	7.6E-06	Liver	6.2E-03	NA	6.2E-04	6.9E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	3.6E-02	NA	--	3.6E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	2.6E-02	NA	--	2.6E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.0E-01	NA	2.7E-01	5.7E-01
			1,4-DICHLOROBENZENE	1.3E-05	NA	9.0E-06	NA	2.2E-05	Endocrine	1.0E-01	NA	6.9E-02	1.7E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			2.0E-01	NA	--	2.0E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			1.5E-01	NA	--	1.5E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.9E-04	NA	2.9E-05	NA	2.2E-04	Immune system /	2.5E+00	NA	3.8E-01	2.9E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	2.1E+00	NA	7.4E-01	2.8E+00
			CHLOROFORM	1.7E-07	NA	1.5E-08	NA	1.9E-07	Liver	1.6E-03	NA	1.5E-04	1.7E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.1E-01	NA	6.9E-02	1.8E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	2.4E-03	NA	--	2.4E-03
			METHYLENE CHLORIDE	6.4E-06	NA	2.4E-07	NA	6.6E-06	Liver	1.6E+00	NA	5.9E-02	1.6E+00
			METHYL-T-BUTYL ETHER	2.3E-07	NA	--	NA	2.3E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.4E-02	NA	9.2E-03	2.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.4E-02	NA	--	4.4E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			2.4E-01	NA	--	2.4E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.1E-08	NA	1.7E-06	NA	1.8E-06	Liver	2.6E-03	NA	1.6E-03	4.2E-03
			TOLUENE	NC	NA	NC	NA		Kidney	1.3E+00	NA	4.4E-01	1.7E+00
			TRICHLOROETHYLENE	2.8E-06	NA	--	NA	2.8E-06	Liver / Kidney	3.5E-01	NA	5.9E-02	4.1E-01
			VINYL CHLORIDE	3.2E-04	NA	--	NA	3.2E-04	Liver	4.3E-01	NA	--	4.3E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.8E-02	NA	--	4.8E-02
			1,4-DIOXANE	9.3E-06	NA	3.4E-08	NA	9.3E-06	Liver	9.1E-03	NA	3.3E-05	9.1E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	2.2E-02	NA	3.3E-03	2.6E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.2E-03	NA	--	6.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	2.5E-05	NA	--	NA	2.5E-05		1.8E+00	NA	--	1.8E+00
			Biphenyl	NC	NA	NC	NA		Kidney	2.9E-04	NA	--	2.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.7E-07	NA	1.0E-06	NA	1.7E-06	Liver	7.0E-03	NA	1.1E-02	1.8E-02
			ALDRIN	1.3E-06	NA	1.2E-07	NA	1.4E-06	Liver	7.2E-03	NA	6.6E-04	7.9E-03
			HEPTACHLOR EPOXIDE	8.5E-07	NA	--	NA	8.5E-07	Liver	2.1E-02	NA	--	2.1E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E+00	NA	--	1.5E+00
			ARSENIC	3.5E-04	NA	1.8E-06	NA	3.6E-04	Skin	2.3E+00	NA	1.2E-02	2.3E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	5.7E-01	NA	2.0E-02	5.9E-01
			BARIUM	NC	NA	NC	NA		Kidney	5.0E-02	NA	3.7E-03	5.3E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	5.1E-02	NA	3.8E-02	8.9E-02
			CADMIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.6E-01	2.7E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.5E-03	NA	6.8E-03	1.5E-02
			COBALT	NC	NA	NC	NA		Endocrine	6.8E+00	NA	--	6.8E+00
			COPPER	NC	NA	NC	NA		Undetermined	3.6E+01	NA	1.9E-01	3.6E+01
			IRON	NC	NA	NC	NA			1.3E+01	NA	--	1.3E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	1.5E-01	NA	1.9E-02	1.7E-01
			MERCURY	NC	NA	NC	NA		Immune system	7.9E-02	NA	5.9E-03	8.5E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	3.3E-01	NA	8.6E-03	3.4E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	4.1E-02	NA	2.1E-04	4.1E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	1.4E-02	NA	1.1E-03	1.5E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	2.2E+01	NA	1.1E-01	2.2E+01
			VANADIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.4E-01	2.6E+00
			ZINC	NC	NA	NC	NA		Liver	2.0E+01	NA	6.4E-02	2.0E+01
			CHEMICAL TOTAL	9.5E-04	--	4.5E-05	--	1E-03		1.3E+02	--	5.5E+00	1E+02
		EXPOSURE POINT TOTAL						1E-03					1E+02
	EXPOSURE MEDIUM TOTAL							1E-03					1E+02

TABLE H-31
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.5E-05	NA	NA	2.5E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	1.6E+00	NA	1.6E+00
			1,1-DICHLOROETHANE	NA	6.7E-07	NA	NA	6.7E-07	Kidney	NA	2.4E-03	NA	2.4E-03
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.2E+02	NA	1.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	2.0E+00	NA	2.0E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	1.2E+00	NA	1.2E+00
			1,2-DICHLOROETHANE	NA	1.2E-04	NA	NA	1.2E-04	Nervous System	NA	1.9E+00	NA	1.9E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	2.7E+00	NA	2.7E+00
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	2.6E-01	NA	2.6E-01
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.8E-04	NA	NA	4.8E-04	Developmental	NA	1.6E-01	NA	1.6E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.3E-04	NA	NA	5.3E-04	Immune system	NA	6.6E+00	NA	6.6E+00
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	1.6E+01	NA	1.6E+01
			CHLOROFORM	NA	2.6E-06	NA	NA	2.6E-06	Liver	NA	3.4E-03	NA	3.4E-03
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	2.0E-01	NA	2.0E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	7.3E-07	NA	NA	7.3E-07	Liver	NA	3.5E-01	NA	3.5E-01
			METHYL-T-BUTYL ETHER	NA	5.7E-07	NA	NA	5.7E-07	Liver / Kidney	NA	2.1E-03	NA	2.1E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	1.5E+00	NA	1.5E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	1.5E+00	NA	1.5E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.6E-08	NA	NA	2.6E-08	Nervous System	NA	7.4E-03	NA	7.4E-03
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	3.7E-01	NA	3.7E-01
			TRICHLOROETHYLENE	NA	4.9E-06	NA	NA	4.9E-06	Nervous System	NA	1.8E+00	NA	1.8E+00
			VINYL CHLORIDE	NA	4.3E-05	NA	NA	4.3E-05	Liver	NA	2.8E-01	NA	2.8E-01
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.9E+00	NA	1.9E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	1.1E+00	NA	1.1E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.2E-03	--	--	1E-03		--	1.6E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02

TABLE H-31
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	3.6E-05	NA	--	3.6E-05
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.6E-04	NA	--	1.6E-04
			BENZO(A)ANTHRACENE	5.3E-08	NA	2.8E-08	NA	8.1E-08	Kidney	3.5E-06	NA	1.8E-06	5.4E-06
			BENZO(A)PYRENE	7.1E-07	NA	3.7E-07	NA	1.1E-06	Kidney	4.7E-06	NA	2.4E-06	7.1E-06
			BENZO(B)FLUORANTHENE	2.0E-07	NA	1.0E-07	NA	3.1E-07	Kidney	1.3E-05	NA	7.0E-06	2.0E-05
			Biphenyl	NC	NA	NC	NA		Kidney	2.3E-06	NA	9.2E-07	3.2E-06
			DIBENZO(A,H)ANTHRACENE	1.8E-07	NA	9.1E-08	NA	2.7E-07	Kidney	1.2E-06	NA	6.1E-07	1.8E-06
			INDENO(1,2,3-CD)PYRENE	5.5E-08	NA	2.8E-08	NA	8.3E-08	Kidney	3.7E-06	NA	1.9E-06	5.5E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E-02	NA	--	1.5E-02
			ARSENIC	2.6E-06	NA	5.1E-07	NA	3.1E-06	Skin	1.7E-02	NA	3.3E-03	2.0E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.6E-05	NA	--	2.6E-05
			COBALT	NC	NA	NC	NA		Endocrine	1.5E-02	NA	--	1.5E-02
			COPPER	NC	NA	NC	NA		Undetermined	1.2E-02	NA	--	1.2E-02
			MANGANESE	NC	NA	NC	NA		Nervous System	8.7E-04	NA	--	8.7E-04
			THALLIUM	NC	NA	NC	NA		NOAEL	1.3E-01	NA	--	1.3E-01
			VANADIUM	NC	NA	NC	NA		Kidney	1.3E-02	NA	--	1.3E-02
			CHEMICAL TOTAL	3.7E-06	--	1.1E-06	--	5E-06		2.1E-01	--	3.3E-03	2E-01
		EXPOSURE POINT TOTAL						5E-06					2E-01
	EXPOSURE MEDIUM TOTAL							5E-06					2E-01

RECEPTOR TOTAL	**2E-03**		**3E+02**
	TOTAL RISK ACROSS ALL MEDIA **2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**	**3E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/10/15

TOTAL GENERAL TOXICITY HI =	**2.3E+00**
	--
TOTAL DEVELOPMENTAL HI =	**3.6E-01**
TOTAL ENDOCRINE HI =	**1.0E+01**
TOTAL EYE HI =	**1.5E-02**
TOTAL GI SYSTEM HI =	**8.9E-02**
TOTAL HEMATOLOGICAL HI =	**3.5E+00**
TOTAL IMMUNE SYSTEM HI =	**9.6E+00**
TOTAL KIDNEY HI =	**7.6E+00**
TOTAL LIVER HI =	**2.8E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**9.1E+00**
TOTAL NOAEL HI =	**2.3E+02**
	--
TOTAL SKIN HI =	**2.4E+00**
TOTAL RESPIRATORY HI =	**4.3E+00**

TABLE H-32
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	1,1,2,2-TETRACHLOROETHANE	--	NA	--	NA		General Toxicity				
			1,1,2-TRICHLOROETHANE	--	NA	--	NA		Liver				
			1,1-DICHLOROETHANE	--	NA	--	NA		NOAEL				
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.3E-08	NA	5.1E-06	5.1E-06
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	2.9E-07	NA	--	2.9E-07
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.9E-09	NA	9.0E-07	9.0E-07
			1,2-DICHLOROETHANE	3.1E-12	NA	7.3E-11	NA	7.6E-11	Kidney	1.2E-07	NA	2.8E-06	2.9E-06
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver				
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver			--	
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver				
			1,4-DICHLOROBENZENE	--	NA	--	NA		Endocrine				
			1-CHLOROBUTANE	NC	NA	NC	NA					--	
			2-CHLOROTOLUENE	NC	NA	NC	NA					--	
			3-METHYL HEXANE	NC	NA	NC	NA					--	
			BENZENE	--	NA	--	NA		Immune system /				
			CHLOROBENZENE	NC	NA	NC	NA		Liver	3.4E-08	NA	5.1E-06	5.1E-06
			CHLOROFORM	5.2E-13	NA	2.1E-11	NA	2.1E-11	Liver	1.2E-08	NA	4.7E-07	4.8E-07
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			DIMETHYLSULFIDE	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver				
			M+P-XYLENE	NC	NA	NC	NA		Nervous System			--	
			METHYLENE CHLORIDE	--	NA	--	NA		Liver				
			METHYL-T-BUTYL ETHER	1.4E-13	NA	--	NA	1.4E-13	Liver	1.8E-08	NA	--	1.8E-08
			NAPHTHALENE	NC	NA	NC	NA		Nervous System				
			O-XYLENE	NC	NA	NC	NA		Nervous System			--	
			P-CHLOROTOLUENE	NC	NA	NC	NA					--	
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			SULFUR DIOXIDE	NC	NA	NC	NA					--	
			t-Butyl Alcohol	NC	NA	NC	NA					--	
			TETRACHLOROETHYLENE	3.5E-14	NA	1.8E-09	NA	1.8E-09	Liver	1.2E-08	NA	2.3E-06	2.3E-06
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	1.5E-09	NA	2.4E-07	2.4E-07
			TRICHLOROETHYLENE	1.2E-12	NA	--	NA	1.2E-12	Liver / Kidney	5.9E-06	NA	4.0E-04	4.0E-04
			VINYL CHLORIDE	--	NA	--	NA		Liver			--	
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System			--	
			1,4-DIOXANE	--	NA	--	NA		Liver				
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological				
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory			--	
			3-NITROANILINE	NC	NA	NC	NA					--	
			ANILINE	--	NA	--	NA						
			Biphenyl	NC	NA	NC	NA		Kidney			--	
			BIS(2-ETHYLHEXYL)PHTHALATE	--	NA	--	NA		Reproductive				
			ALDRIN	--	NA	--	NA		Liver				
			HEPTACHLOR EPOXIDE	--	NA	--	NA		Liver			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System			--	
			ARSENIC	--	NA	--	NA		Skin				
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /				
			BARIUM	NC	NA	NC	NA		Kidney				
			BERYLLIUM	NC	NA	NC	NA		GI system				
			CADMIUM	NC	NA	NC	NA						
			CHROMIUM	NC	NA	NC	NA		NOAEL				
			COBALT	NC	NA	NC	NA		Endocrine			--	
			COPPER	NC	NA	NC	NA		Undetermined				
			IRON	NC	NA	NC	NA					--	
			LEAD	--	NA	--	NA					--	
			MANGANESE	NC	NA	NC	NA		Nervous System				
			MERCURY	NC	NA	NC	NA		Kidney				
			NICKEL	NC	NA	NC	NA		General Toxicity				
			SELENIUM	NC	NA	NC	NA		Skin / Liver				
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory				
			THALLIUM	NC	NA	NC	NA		NOAEL				
			VANADIUM	NC	NA	NC	NA		Kidney				
			ZINC	NC	NA	NC	NA		Hematological				
			CHEMICAL TOTAL	4.9E-12	--	1.9E-09	--	2E-09		6.4E-06	--	4.2E-04	4E-04
		EXPOSURE POINT TOTAL						2E-09					4E-04
	EXPOSURE MEDIUM TOTAL							2E-09					4E-04

TABLE H-32
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - TRENCH AIR	1,1,2,2-TETRACHLOROETHANE	NA	--	NA	NA						
			1,1,2-TRICHLOROETHANE	NA	--	NA	NA						
			1,1-DICHLOROETHANE	NA	--	NA	NA		Kidney				
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	7.2E-03	NA	7.2E-03
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	2.7E-04	NA	2.7E-04
			1,2-DICHLOROETHANE	NA	1.9E-07	NA	NA	1.9E-07	Nervous System	NA	7.3E-03	NA	7.3E-03
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Liver				
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	--	NA	NA		Developmental				
			1-CHLOROBUTANE	NA	NC	NA	NA						
			2-CHLOROTOLUENE	NA	NC	NA	NA						
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	--	NA	NA		Immune system				
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	2.2E-03	NA	2.2E-03
			CHLOROFORM	NA	2.3E-07	NA	NA	2.3E-07	Liver	NA	2.9E-03	NA	2.9E-03
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear				
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	--	NA	NA		Liver				
			METHYL-T-BUTYL ETHER	NA	1.9E-09	NA	NA	1.9E-09	Liver / Kidney	NA	2.0E-04	NA	2.0E-04
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			O-XYLENE	NA	NC	NA	NA		Nervous System				
			P-CHLOROTOLUENE	NA	NC	NA	NA						
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	8.1E-09	NA	NA	8.1E-09	Nervous System	NA	5.5E-02	NA	5.5E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	2.5E-04	NA	2.5E-04
			TRICHLOROETHYLENE	NA	1.5E-07	NA	NA	1.5E-07	Nervous System	NA	4.6E-03	NA	4.6E-03
			VINYL CHLORIDE	NA	--	NA	NA		Liver				
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System				
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA						
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA						
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY (5)	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA		Respiratory				
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA						
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	5.7E-07	--	--	6E-07		--	8.0E-02	--	8E-02
		EXPOSURE POINT TOTAL						6E-07					8E-02
	EXPOSURE MEDIUM TOTAL							6E-07					8E-02
GROUNDWATER TOTAL								**6E-07**					**8E-02**

TABLE H-32
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	ETHYLBENZENE	NC	NA	NC	NA		Liver	1.7E-04	NA	--	1.7E-04
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System	1.9E-04	NA	--	1.9E-04
			BENZO(A)ANTHRACENE	5.2E-09	NA	2.0E-09	NA	7.3E-09	Kidney	2.5E-06	NA	9.8E-07	3.5E-06
			BENZO(A)PYRENE	6.9E-08	NA	2.7E-08	NA	9.6E-08	Kidney	3.3E-06	NA	1.3E-06	4.6E-06
			BENZO(B)FLUORANTHENE	2.0E-08	NA	7.7E-09	NA	2.8E-08	Kidney	9.5E-06	NA	3.7E-06	1.3E-05
			Biphenyl	NC	NA	NC	NA		Kidney	2.7E-05	NA	8.2E-06	3.5E-05
			DIBENZO(A,H)ANTHRACENE	1.7E-08	NA	6.8E-09	NA	2.4E-08	Kidney	8.3E-07	NA	3.2E-07	1.2E-06
			INDENO(1,2,3-CD)PYRENE	5.4E-09	NA	2.1E-09	NA	7.5E-09	Kidney	2.6E-06	NA	1.0E-06	3.6E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.6E-02	NA	--	3.6E-02
			ARSENIC	2.5E-07	NA	3.8E-08	NA	2.9E-07	Skin	3.9E-02	NA	5.9E-03	4.5E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	9.2E-05	NA	--	9.2E-05
			COBALT	NC	NA	NC	NA		Endocrine	3.5E-03	NA	--	3.5E-03
			COPPER	NC	NA	NC	NA		Undetermined	1.1E-01	NA	--	1.1E-01
			MANGANESE	NC	NA	NC	NA		Nervous System	2.1E-03	NA	--	2.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	4.0E-03	NA	--	4.0E-03
			VANADIUM	NC	NA	NC	NA		Kidney	2.2E-01	NA	--	2.2E-01
			CHEMICAL TOTAL	3.7E-07	--	8.3E-08	--	5E-07		4.2E-01	--	5.9E-03	4E-01
		EXPOSURE POINT TOTAL						5E-07					4E-01
	EXPOSURE MEDIUM TOTAL							5E-07					4E-01
SOIL	AIR	DUST AT SITE	ETHYLBENZENE	NA	NC	NA	NA		ear	NA	4.9E-10	NA	4.9E-10
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	9.8E-08	NA	9.8E-08
			BENZO(A)ANTHRACENE	NA	4.1E-13	NA	NA	4.1E-13		NA	--	NA	
			BENZO(A)PYRENE	NA	5.4E-12	NA	NA	5.4E-12		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	1.6E-12	NA	NA	1.6E-12		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			DIBENZO(A,H)ANTHRACENE	NA	1.5E-12	NA	NA	1.5E-12		NA	--	NA	
			INDENO(1,2,3-CD)PYRENE	NA	4.2E-13	NA	NA	4.2E-13		NA	--	NA	
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	3.8E-03	NA	3.8E-03
			ARSENIC	NA	6.2E-10	NA	NA	6.2E-10	Cardiovascular / Nervous	NA	6.8E-04	NA	6.8E-04
			CHROMIUM	NA	NC	NA	NA		Respiratory	NA	9.5E-06	NA	9.5E-06
			COBALT	NA	7.0E-10	NA	NA	7.0E-10	Respiratory	NA	2.7E-04	NA	2.7E-04
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MANGANESE	NA	NC	NA	NA		Nervous System	NA	3.0E-03	NA	3.0E-03
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	8.0E-04	NA	8.0E-04
			CHEMICAL TOTAL	--	1.3E-09	--	--	1E-09		--	8.5E-03	--	9E-03
		EXPOSURE POINT TOTAL						1E-09					9E-03
RECEPTOR TOTAL								**1E-06**					**5E-01**
							TOTAL RISK ACROSS ALL MEDIA	**1E-06**				**TOTAL HAZARD ACROSS ALL MEDIA**	**5E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**2.7E-04**
TOTAL CARDIOVASCULAR HI =	**6.8E-04**
TOTAL DEVELOPMENTAL HI =	**6.8E-04**
TOTAL ENDOCRINE HI =	**3.5E-03**
	--
	--
TOTAL HEMATOLOGICAL HI =	**2.9E-07**
	--
TOTAL KIDNEY HI =	**2.2E-01**
TOTAL LIVER HI =	**3.7E-03**
	--
TOTAL NERVOUS SYSTEM HI =	**1.1E-01**
TOTAL NOAEL HI =	**1.2E-01**
	--
TOTAL SKIN HI =	**4.5E-02**
TOTAL RESPIRATORY HI =	**2.8E-04**

TABLE H-33
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADOLESCENT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADOLESCENT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	7.0E-04	NA	4.2E-04	1.1E-03
			BENZO(A)PYRENE	1.9E-08	NA	1.2E-08	NA	3.1E-08	Kidney	2.3E-07	NA	1.4E-07	3.6E-07
			BENZO(B)FLUORANTHENE	2.3E-09	NA	1.4E-09	NA	3.7E-09	Kidney	2.7E-07	NA	1.6E-07	4.3E-07
			Biphenyl	NC	NA	NC	NA		Kidney	3.1E-06	NA	1.4E-06	4.5E-06
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	2.4E-05	NA	1.5E-05	3.9E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.1E-03	NA	--	2.1E-03
			ARSENIC	2.3E-07	NA	5.3E-08	NA	2.8E-07	Skin	6.0E-03	NA	1.4E-03	7.3E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.1E-06	NA	--	6.1E-06
			VANADIUM	NC	NA	NC	NA		Kidney	5.0E-03	NA	--	5.0E-03
			CHEMICAL TOTAL	2.5E-07	--	6.6E-08	--	3E-07		1.4E-02	--	1.8E-03	2E-02
		EXPOSURE POINT TOTAL						3E-07					2E-02
	EXPOSURE MEDIUM TOTAL							3E-07					2E-02
RECEPTOR TOTAL								**3E-07**					**2E-02**
							TOTAL RISK ACROSS ALL MEDIA	**3E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**2E-02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.9E-05**
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	--
	--
	--
	--
	--
TOTAL KIDNEY HI =	**5.0E-03**
	--
	--
TOTAL NERVOUS SYSTEM HI =	**2.1E-03**
TOTAL NOAEL HI =	**6.1E-06**
	--
TOTAL SKIN HI =	**7.3E-03**
TOTAL RESPIRATORY HI =	**1.1E-03**

TABLE H-34
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - TRESPASSER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: TRESPASSER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.8E-04	NA	1.5E-04	4.2E-04
			BENZO(A)PYRENE	6.7E-09	NA	3.5E-09	NA	1.0E-08	Kidney	8.9E-08	NA	4.7E-08	1.4E-07
			BENZO(B)FLUORANTHENE	7.9E-10	NA	4.2E-10	NA	1.2E-09	Kidney	1.1E-07	NA	5.6E-08	1.6E-07
			Biphenyl	NC	NA	NC	NA		Kidney	1.2E-06	NA	4.9E-07	1.7E-06
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	9.6E-06	NA	5.1E-06	1.5E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	8.3E-04	NA	--	8.3E-04
			ARSENIC	1.8E-07	NA	3.7E-08	NA	2.2E-07	Skin	2.4E-03	NA	4.8E-04	2.8E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.4E-06	NA	--	2.4E-06
			VANADIUM	NC	NA	NC	NA		Kidney	2.0E-03	NA	--	2.0E-03
			CHEMICAL TOTAL	1.9E-07	--	4.1E-08	--	2E-07		5.4E-03	--	6.3E-04	6E-03
		EXPOSURE POINT TOTAL						2E-07					6E-03
	EXPOSURE MEDIUM TOTAL							2E-07					6E-03
RECEPTOR TOTAL								**2E-07**					**6E-03**
							TOTAL RISK ACROSS ALL MEDIA	**2E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**6E-03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**1.5E-05**
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	--
	--
	--
	--
	--
	--
TOTAL KIDNEY HI =	**2.0E-03**
	--
	--
TOTAL NERVOUS SYSTEM HI =	**8.3E-04**
TOTAL NOAEL HI =	**2.4E-06**
	--
TOTAL SKIN HI =	**2.8E-03**
TOTAL RESPIRATORY HI =	**4.2E-04**

TABLE H-35
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-35
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - OUTDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: OUTDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.3E-03	NA	1.1E-03	2.5E-03
			BENZO(A)PYRENE	6.7E-08	NA	5.8E-08	NA	1.2E-07	Kidney	4.3E-07	NA	3.7E-07	8.0E-07
			BENZO(B)FLUORANTHENE	8.0E-09	NA	6.8E-09	NA	1.5E-08	Kidney	5.1E-07	NA	4.4E-07	9.5E-07
			Biphenyl	NC	NA	NC	NA		Kidney	5.8E-06	NA	3.8E-06	9.7E-06
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	4.6E-05	NA	4.0E-05	8.6E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	4.0E-03	NA	--	4.0E-03
			ARSENIC	1.8E-06	NA	6.0E-07	NA	2.4E-06	Skin	1.1E-02	NA	3.8E-03	1.5E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.2E-05	NA	--	1.2E-05
			VANADIUM	NC	NA	NC	NA		Kidney	9.5E-03	NA	--	9.5E-03
												--	
			CHEMICAL TOTAL	1.9E-06	--	6.7E-07	--	3E-06		2.6E-02	--	4.9E-03	3E-02
		EXPOSURE POINT TOTAL						3E-06					3E-02
	EXPOSURE MEDIUM TOTAL							3E-06					3E-02
SOIL	AIR	DUST AT SITE	CYCLOHEXANE, METHYL-	NA	NC	NA	NA			NA	3.0E-11	NA	3.0E-11
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)PYRENE	NA	1.7E-12	NA	NA	1.7E-12		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	2.1E-13	NA	NA	2.1E-13		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	5.3E-08	NA	5.3E-08
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	1.4E-04	NA	1.4E-04
			ARSENIC	NA	1.5E-09	NA	NA	1.5E-09	Cardiovascular / Nervous	NA	6.5E-05	NA	6.5E-05
			CHROMIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	8.1E-05	NA	8.1E-05
			CHEMICAL TOTAL	--	1.5E-09	--	--	2E-09		--	2.8E-04	--	3E-04
		EXPOSURE POINT TOTAL						2E-09					3E-04
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
TOTAL CARDIOVASCULAR HI =	**6.5E-05**
TOTAL DEVELOPMENTAL HI =	**6.5E-05**
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**1.1E-02**

TABLE H-36
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	1.8E-06	NA	0.0E+00	NA	1.8E-06	Respiratory	1.3E-03	NA	0.0E+00	1.3E-03
			1,1,2-TRICHLOROETHANE	1.2E-07	NA	0.0E+00	NA	1.2E-07	Hematological	1.5E-03	NA	0.0E+00	1.5E-03
			1,1-DICHLOROETHANE	4.3E-08	NA	0.0E+00	NA	4.3E-08	Undetermined	1.1E-04	NA	0.0E+00	1.1E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			3.8E+00	NA	--	3.8E+00
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	5.0E-01	NA	0.0E+00	5.0E-01
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	1.1E+00	NA	--	1.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.5E-02	NA	0.0E+00	5.5E-02
			1,2-DICHLOROETHANE	7.3E-06	NA	0.0E+00	NA	7.3E-06		3.8E-02	NA	0.0E+00	3.8E-02
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	7.8E-02	NA	0.0E+00	7.8E-02
			1,2-DICHLOROPROPANE	2.6E-06	NA	0.0E+00	NA	2.6E-06	Liver	2.2E-03	NA	0.0E+00	2.2E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	1.3E-02	NA	--	1.3E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	9.3E-03	NA	--	9.3E-03
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.1E-01	NA	0.0E+00	1.1E-01
			1,4-DICHLOROBENZENE	5.0E-06	NA	0.0E+00	NA	5.0E-06	Endocrine	3.7E-02	NA	0.0E+00	3.7E-02
			1-CHLOROBUTANE	NC	NA	NC	NA			7.1E-02	NA	--	7.1E-02
			2-CHLOROTOLUENE	NC	NA	NC	NA			5.2E-02	NA	--	5.2E-02
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	7.0E-05	NA	0.0E+00	NA	7.0E-05	Immune system /	8.9E-01	NA	0.0E+00	8.9E-01
			CHLOROBENZENE	NC	NA	NC	NA		Liver	7.4E-01	NA	0.0E+00	7.4E-01
			CHLOROFORM	6.3E-08	NA	0.0E+00	NA	6.3E-08	Liver	5.7E-04	NA	0.0E+00	5.7E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	4.1E-02	NA	0.0E+00	4.1E-02
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	8.6E-04	NA	--	8.6E-04
			METHYLENE CHLORIDE	2.4E-06	NA	0.0E+00	NA	2.4E-06	Liver	5.6E-01	NA	0.0E+00	5.6E-01
			METHYL-T-BUTYL ETHER	8.6E-08	NA	--	NA	8.6E-08		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	5.0E-03	NA	0.0E+00	5.0E-03
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.6E-02	NA	--	1.6E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			8.7E-02	NA	--	8.7E-02
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	4.2E-09	NA	0.0E+00	NA	4.2E-09	Liver	9.3E-04	NA	0.0E+00	9.3E-04
			TOLUENE	NC	NA	NC	NA		Kidney	4.5E-01	NA	0.0E+00	4.5E-01
			TRICHLOROETHYLENE	1.0E-06	NA	--	NA	1.0E-06	Liver / Kidney	1.3E-01	NA	0.0E+00	1.3E-01
			VINYL CHLORIDE	1.2E-04	NA	--	NA	1.2E-04	Liver	1.5E-01	NA	--	1.5E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.7E-02	NA	--	1.7E-02
			1,4-DIOXANE	3.5E-06	NA	0.0E+00	NA	3.5E-06	Liver	3.2E-03	NA	0.0E+00	3.2E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	8.0E-03	NA	0.0E+00	8.0E-03
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.2E-03	NA	--	2.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	9.4E-06	NA	--	NA	9.4E-06		6.6E-01	NA	--	6.6E-01
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	--	1.1E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	2.5E-07	NA	0.0E+00	NA	2.5E-07	Liver	2.5E-03	NA	0.0E+00	2.5E-03
			ALDRIN	4.7E-07	NA	0.0E+00	NA	4.7E-07	Liver	2.6E-03	NA	0.0E+00	2.6E-03
			HEPTACHLOR EPOXIDE	3.2E-07	NA	--	NA	3.2E-07	Liver	7.5E-03	NA	--	7.5E-03
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.4E-01	NA	--	5.4E-01
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /	2.0E-01	NA	0.0E+00	2.0E-01
			ARSENIC	1.3E-04	NA	0.0E+00	NA	1.3E-04	Skin	8.2E-01	NA	0.0E+00	8.2E-01
			BARIUM	NC	NA	NC	NA		Kidney	1.8E-02	NA	0.0E+00	1.8E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	1.8E-02	NA	0.0E+00	1.8E-02
			CADMIUM	NC	NA	NC	NA		Kidney	7.9E-01	NA	0.0E+00	7.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	3.0E-03	NA	0.0E+00	3.0E-03
			COBALT	NC	NA	NC	NA		Endocrine	2.4E+00	NA	--	2.4E+00
			COPPER	NC	NA	NC	NA		Undetermined	1.3E+01	NA	0.0E+00	1.3E+01
			IRON	NC	NA	NC	NA			4.8E+00	NA	--	4.8E+00
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	5.3E-02	NA	0.0E+00	5.3E-02
			MERCURY	NC	NA	NC	NA		Immune system	2.8E-02	NA	0.0E+00	2.8E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	1.2E-01	NA	0.0E+00	1.2E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	1.5E-02	NA	0.0E+00	1.5E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	5.1E-03	NA	0.0E+00	5.1E-03
			THALLIUM	NC	NA	NC	NA		NOAEL	7.7E+00	NA	0.0E+00	7.7E+00
			VANADIUM	NC	NA	NC	NA		Kidney	7.8E-01	NA	0.0E+00	7.8E-01
			ZINC	NC	NA	NC	NA		Liver	7.3E+00	NA	0.0E+00	7.3E+00
			CHEMICAL TOTAL	3.5E-04	--	--	--	4E-04		4.8E+01	--	--	5E+01
		EXPOSURE POINT TOTAL						4E-04					5E+01
	EXPOSURE MEDIUM TOTAL							4E-04					5E+01

TABLE H-36
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - CURRENT/FUTURE - INDOOR WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: CURRENT/FUTURE
RECEPTOR POPULATION: INDOOR WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	7.4E-04	NA	4.4E-04	1.2E-03
			BENZO(A)PYRENE	3.7E-08	NA	2.2E-08	NA	6.0E-08	Kidney	2.4E-07	NA	1.4E-07	3.8E-07
			BENZO(B)FLUORANTHENE	4.4E-09	NA	2.7E-09	NA	7.1E-09	Kidney	2.8E-07	NA	1.7E-07	4.5E-07
			Biphenyl	NC	NA	NC	NA		Kidney	3.2E-06	NA	1.5E-06	4.7E-06
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	2.6E-05	NA	1.5E-05	4.1E-05
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.2E-03	NA	--	2.2E-03
			ARSENIC	1.0E-06	NA	2.3E-07	NA	1.3E-06	Skin	6.3E-03	NA	1.5E-03	7.8E-03
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.5E-06	NA	--	6.5E-06
			VANADIUM	NC	NA	NC	NA		Kidney	5.3E-03	NA	--	5.3E-03
												--	
			CHEMICAL TOTAL	1.1E-06	--	2.6E-07	--	1E-06		1.5E-02	--	1.9E-03	2E-02
		EXPOSURE POINT TOTAL						1E-06					2E-02
	EXPOSURE MEDIUM TOTAL							1E-06					2E-02
RECEPTOR TOTAL								**4E-04**					**5E+01**
							TOTAL RISK ACROSS ALL MEDIA	**4E-04**	**TOTAL HAZARD ACROSS ALL MEDIA**				**5E+01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**3.6E-01**
	--
	--
TOTAL ENDOCRINE HI =	**3.0E+00**
TOTAL EYE HI =	**5.1E-03**
TOTAL GI SYSTEM HI =	**1.8E-02**
TOTAL HEMATOLOGICAL HI =	**1.1E+00**
TOTAL IMMUNE SYSTEM HI =	**9.2E-01**
TOTAL KIDNEY HI =	**2.2E+00**
TOTAL LIVER HI =	**9.2E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**6.0E-01**
TOTAL NOAEL HI =	**3.1E+01**
	--
TOTAL SKIN HI =	**8.5E-01**
TOTAL RESPIRATORY HI =	**9.8E-03**

TABLE H-37
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	2.9E-06	NA	3.5E-07	NA	3.2E-06	Respiratory	8.4E-03	NA	1.0E-03	9.4E-03
			1,1,2-TRICHLOROETHANE	1.9E-07	NA	1.7E-08	NA	2.0E-07	Hematological	9.5E-03	NA	8.6E-04	1.0E-02
			1,1-DICHLOROETHANE	6.8E-08	NA	5.3E-09	NA	7.3E-08	Undetermined	7.0E-04	NA	5.5E-05	7.5E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			2.5E+01	NA	--	2.5E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	3.3E+00	NA	4.1E+00	7.4E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	7.1E+00	NA	--	7.1E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.6E-01	NA	2.3E-01	5.8E-01
			1,2-DICHLOROETHANE	1.2E-05	NA	5.6E-07	NA	1.2E-05		2.5E-01	NA	1.2E-02	2.6E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	5.1E-01	NA	4.5E-02	5.5E-01
			1,2-DICHLOROPROPANE	4.0E-06	NA	3.9E-07	NA	4.4E-06	Liver	1.5E-02	NA	1.4E-03	1.6E-02
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	8.5E-02	NA	--	8.5E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	6.1E-02	NA	--	6.1E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	6.9E-01	NA	6.2E-01	1.3E+00
			1,4-DICHLOROBENZENE	7.8E-06	NA	5.0E-06	NA	1.3E-05	Endocrine	2.4E-01	NA	1.6E-01	4.0E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			4.7E-01	NA	--	4.7E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			3.4E-01	NA	--	3.4E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.1E-04	NA	1.7E-05	NA	1.3E-04	Immune system /	5.8E+00	NA	8.9E-01	6.7E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	4.8E+00	NA	1.7E+00	6.5E+00
			CHLOROFORM	9.9E-08	NA	8.7E-09	NA	1.1E-07	Liver	3.7E-03	NA	3.3E-04	4.1E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	2.7E-01	NA	1.6E-01	4.2E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	5.6E-03	NA	--	5.6E-03
			METHYLENE CHLORIDE	2.0E-05	NA	7.6E-07	NA	2.1E-05	Liver	3.6E+00	NA	1.4E-01	3.8E+00
			METHYL-T-BUTYL ETHER	1.4E-07	NA	--	NA	1.4E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	3.3E-02	NA	2.1E-02	5.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	1.0E-01	NA	--	1.0E-01
			P-CHLOROTOLUENE	NC	NA	NC	NA			5.7E-01	NA	--	5.7E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	6.6E-09	NA	9.8E-07	NA	9.9E-07	Liver	6.1E-03	NA	3.5E-03	9.6E-03
			TOLUENE	NC	NA	NC	NA		Kidney	2.9E+00	NA	1.0E+00	3.9E+00
			TRICHLOROETHYLENE	1.7E-06	NA	--	NA	1.7E-06		--	NA	--	
			TRICHLOROETHYLENE	1.3E-06	NA	--	NA	1.3E-06	Liver / Kidney	8.2E-01	NA	--	8.2E-01
			VINYL CHLORIDE	3.6E-04	NA	1.9E-05	NA	3.8E-04	Liver	9.9E-01	NA	5.4E-02	1.0E+00
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	1.1E-01	NA	--	1.1E-01
			1,4-DIOXANE	5.4E-06	NA	2.0E-08	NA	5.4E-06	Liver	2.1E-02	NA	7.7E-05	2.1E-02
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	5.2E-02	NA	7.4E-03	6.0E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.4E-02	NA	--	1.4E-02
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	1.5E-05	NA	--	NA	1.5E-05		4.3E+00	NA	--	4.3E+00
			Biphenyl	NC	NA	NC	NA		Kidney	6.9E-04	NA	--	6.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	3.9E-07	NA	5.8E-07	NA	9.8E-07	Liver	1.6E-02	NA	2.4E-02	4.1E-02
			ALDRIN	7.4E-07	NA	6.5E-08	NA	8.0E-07	Liver	1.7E-02	NA	1.5E-03	1.8E-02
			HEPTACHLOR EPOXIDE	5.0E-07	NA	--	NA	5.0E-07	Liver	4.9E-02	NA	--	4.9E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	3.5E+00	NA	--	3.5E+00
			ARSENIC	2.1E-04	NA	1.4E-06	NA	2.1E-04	Skin	5.3E+00	NA	3.5E-02	5.4E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	1.3E+00	NA	5.9E-02	1.4E+00
			BARIUM	NC	NA	NC	NA		Kidney	1.2E-01	NA	1.1E-02	1.3E-01
			BERYLLIUM	NC	NA	NC	NA		GI system	1.2E-01	NA	1.1E-01	2.3E-01
			CADMIUM	NC	NA	NC	NA		Kidney	5.2E+00	NA	1.4E+00	6.5E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	2.0E-02	NA	2.0E-02	4.0E-02
			COBALT	NC	NA	NC	NA		Endocrine	1.6E+01	NA	--	1.6E+01
			COPPER	NC	NA	NC	NA		Undetermined	8.5E+01	NA	5.6E-01	8.5E+01
			IRON	NC	NA	NC	NA			3.1E+01	NA	--	3.1E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	3.5E-01	NA	5.7E-02	4.1E-01
			MERCURY	NC	NA	NC	NA		Immune system	1.9E-01	NA	1.7E-02	2.0E-01
			NICKEL	NC	NA	NC	NA		General Toxicity	7.7E-01	NA	2.5E-02	7.9E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	9.5E-02	NA	6.3E-04	9.6E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	3.3E-02	NA	3.3E-03	3.7E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	5.0E+01	NA	3.3E-01	5.1E+01
			VANADIUM	NC	NA	NC	NA		Kidney	5.1E+00	NA	1.3E+00	6.4E+00
			CHEMICAL TOTAL	7.4E-04	--	4.6E-05	--	8E-04		3.1E+02	--	1.3E+01	3E+02
		EXPOSURE POINT TOTAL						8E-04					3E+02
	EXPOSURE MEDIUM TOTAL							8E-04					3E+02

TABLE H-37
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.7E-05	NA	NA	2.7E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.8E-06	NA	NA	1.8E-06		NA	6.7E+00	NA	6.7E+00
			1,1-DICHLOROETHANE	NA	7.2E-07	NA	NA	7.2E-07	Kidney	NA	1.1E-02	NA	1.1E-02
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	5.2E+02	NA	5.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	8.6E+00	NA	8.6E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	5.4E+00	NA	5.4E+00
			1,2-DICHLOROETHANE	NA	1.3E-04	NA	NA	1.3E-04	Nervous System	NA	8.1E+00	NA	8.1E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	1.2E+01	NA	1.2E+01
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	1.1E+00	NA	1.1E+00
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	5.2E-04	NA	NA	5.2E-04	Developmental	NA	6.9E-01	NA	6.9E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.8E-04	NA	NA	5.8E-04	Immune system	NA	2.9E+01	NA	2.9E+01
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	6.7E+01	NA	6.7E+01
			CHLOROFORM	NA	2.8E-06	NA	NA	2.8E-06	Liver	NA	1.5E-02	NA	1.5E-02
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	8.7E-01	NA	8.7E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	4.2E-06	NA	NA	4.2E-06	Liver	NA	1.5E+00	NA	1.5E+00
			METHYL-T-BUTYL ETHER	NA	6.2E-07	NA	NA	6.2E-07	Liver / Kidney	NA	9.3E-03	NA	9.3E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	6.7E+00	NA	6.7E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	6.7E+00	NA	6.7E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.9E-08	NA	NA	2.9E-08	Nervous System	NA	3.2E-02	NA	3.2E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	1.6E+00	NA	1.6E+00
			TRICHLOROETHYLENE	NA	6.9E-06	NA	NA	6.9E-06		NA	--	NA	
			TRICHLOROETHYLENE	NA	4.0E-06	NA	NA	4.0E-06	Nervous System	NA	7.6E+00	NA	7.6E+00
			VINYL CHLORIDE	NA	9.3E-05	NA	NA	9.3E-05	Liver	NA	1.2E+00	NA	1.2E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	8.2E+00	NA	8.2E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system /				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	5.0E+00	NA	5.0E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.4E-03	--	--	1E-03		--	6.9E+02	--	7E+02
		EXPOSURE POINT TOTAL						1E-03					7E+02

TABLE H-37
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - CHILD
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: CHILD

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	1.9E-02	NA	7.0E-03	2.6E-02
			BENZO(A)PYRENE	1.2E-06	NA	4.5E-07	NA	1.7E-06	Kidney	6.2E-06	NA	2.3E-06	8.5E-06
			BENZO(B)FLUORANTHENE	1.5E-07	NA	5.4E-08	NA	2.0E-07	Kidney	7.4E-06	NA	2.7E-06	1.0E-05
			Biphenyl	NC	NA	NC	NA		Kidney	8.5E-05	NA	2.4E-05	1.1E-04
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	6.7E-04	NA	2.4E-04	9.2E-04
			ALUMINUM	NC	NA	NC	NA		Nervous System	5.8E-02	NA	--	5.8E-02
			ARSENIC	6.4E-06	NA	8.9E-07	NA	7.3E-06	Skin	1.7E-01	NA	2.3E-02	1.9E-01
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.7E-04	NA	--	1.7E-04
			VANADIUM	NC	NA	NC	NA		Kidney	1.4E-01	NA	--	1.4E-01
												--	
			CHEMICAL TOTAL	7.8E-06	--	1.4E-06	--	9E-06		3.8E-01	--	3.0E-02	4E-01
		EXPOSURE POINT TOTAL						9E-06					4E-01
	EXPOSURE MEDIUM TOTAL							9E-06					4E-01
RECEPTOR TOTAL								**2E-03**					**1E+03**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**1E+03**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**7.8E+00**
	--
TOTAL DEVELOPMENTAL HI =	**1.6E+00**
TOTAL ENDOCRINE HI =	**2.4E+01**
TOTAL EYE HI =	**3.7E-02**
TOTAL GI SYSTEM HI =	**2.3E-01**
TOTAL HEMATOLOGICAL HI =	**8.2E+00**
TOTAL IMMUNE SYSTEM HI =	**3.6E+01**
TOTAL KIDNEY HI =	**1.8E+01**
TOTAL LIVER HI =	**6.6E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**3.6E+01**
TOTAL NOAEL HI =	**8.1E+02**
	--
TOTAL SKIN HI =	**5.7E+00**
TOTAL RESPIRATORY HI =	**1.8E+01**

TABLE H-38
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	AQUIFER USED AS TAP WATER	1,1,2,2-TETRACHLOROETHANE	4.9E-06	NA	6.3E-07	NA	5.6E-06	Respiratory	3.6E-03	NA	4.6E-04	4.1E-03
			1,1,2-TRICHLOROETHANE	3.2E-07	NA	3.0E-08	NA	3.5E-07	Hematological	4.1E-03	NA	3.8E-04	4.4E-03
			1,1-DICHLOROETHANE	1.2E-07	NA	9.2E-09	NA	1.3E-07	Undetermined	3.0E-04	NA	2.4E-05	3.2E-04
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA			1.1E+01	NA	--	1.1E+01
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.4E+00	NA	1.8E+00	3.2E+00
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	--	NA	--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Undetermined	3.0E+00	NA	--	3.0E+00
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.5E-01	NA	1.0E-01	2.5E-01
			1,2-DICHLOROETHANE	2.0E-05	NA	9.7E-07	NA	2.1E-05		1.1E-01	NA	5.2E-03	1.1E-01
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.2E-01	NA	1.9E-02	2.4E-01
			1,2-DICHLOROPROPANE	6.9E-06	NA	6.9E-07	NA	7.6E-06	Liver	6.2E-03	NA	6.2E-04	6.9E-03
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	3.6E-02	NA	--	3.6E-02
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined	2.6E-02	NA	--	2.6E-02
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.0E-01	NA	2.7E-01	5.7E-01
			1,4-DICHLOROBENZENE	1.3E-05	NA	9.0E-06	NA	2.2E-05	Endocrine	1.0E-01	NA	6.9E-02	1.7E-01
			1-CHLOROBUTANE	NC	NA	NC	NA			2.0E-01	NA	--	2.0E-01
			2-CHLOROTOLUENE	NC	NA	NC	NA			1.5E-01	NA	--	1.5E-01
			3-METHYL HEXANE	NC	NA	NC	NA			--	NA	--	
			BENZENE	1.9E-04	NA	2.9E-05	NA	2.2E-04	Immune system /	2.5E+00	NA	3.8E-01	2.9E+00
			CHLOROBENZENE	NC	NA	NC	NA		Liver	2.1E+00	NA	7.4E-01	2.8E+00
			CHLOROFORM	1.7E-07	NA	1.5E-08	NA	1.9E-07	Liver	1.6E-03	NA	1.5E-04	1.7E-03
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			DIMETHYLSULFIDE	NC	NA	NC	NA			--	NA	--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver / Kidney	1.1E-01	NA	6.9E-02	1.8E-01
			M+P-XYLENE	NC	NA	NC	NA		General Toxicity	2.4E-03	NA	--	2.4E-03
			METHYLENE CHLORIDE	6.4E-06	NA	2.4E-07	NA	6.6E-06	Liver	1.6E+00	NA	5.9E-02	1.6E+00
			METHYL-T-BUTYL ETHER	2.3E-07	NA	--	NA	2.3E-07		--	NA	--	
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	1.4E-02	NA	9.2E-03	2.3E-02
			O-XYLENE	NC	NA	NC	NA		General Toxicity	4.4E-02	NA	--	4.4E-02
			P-CHLOROTOLUENE	NC	NA	NC	NA			2.4E-01	NA	--	2.4E-01
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA			--	NA	--	
			SULFUR DIOXIDE	NC	NA	NC	NA			--	NA	--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	1.1E-08	NA	1.7E-06	NA	1.8E-06	Liver	2.6E-03	NA	1.6E-03	4.2E-03
			TOLUENE	NC	NA	NC	NA		Kidney	1.3E+00	NA	4.4E-01	1.7E+00
			TRICHLOROETHYLENE	2.8E-06	NA	--	NA	2.8E-06	Liver / Kidney	3.5E-01	NA	5.9E-02	4.1E-01
			VINYL CHLORIDE	3.2E-04	NA	--	NA	3.2E-04	Liver	4.3E-01	NA	--	4.3E-01
			XYLENES,TOTAL	NC	NA	NC	NA		General Toxicity	4.8E-02	NA	--	4.8E-02
			1,4-DIOXANE	9.3E-06	NA	3.4E-08	NA	9.3E-06	Liver	9.1E-03	NA	3.3E-05	9.1E-03
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	2.2E-02	NA	3.3E-03	2.6E-02
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	6.2E-03	NA	--	6.2E-03
			3-NITROANILINE	NC	NA	NC	NA			--	NA	--	
			ANILINE	2.5E-05	NA	--	NA	2.5E-05		1.8E+00	NA	--	1.8E+00
			Biphenyl	NC	NA	NC	NA		Kidney	2.9E-04	NA	--	2.9E-04
			BIS(2-ETHYLHEXYL)PHTHALATE	6.7E-07	NA	1.0E-06	NA	1.7E-06	Liver	7.0E-03	NA	1.1E-02	1.8E-02
			ALDRIN	1.3E-06	NA	1.2E-07	NA	1.4E-06	Liver	7.2E-03	NA	6.6E-04	7.9E-03
			HEPTACHLOR EPOXIDE	8.5E-07	NA	--	NA	8.5E-07	Liver	2.1E-02	NA	--	2.1E-02
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E+00	NA	--	1.5E+00
			ARSENIC	3.5E-04	NA	1.8E-06	NA	3.6E-04	Skin	2.3E+00	NA	1.2E-02	2.3E+00
			ANTIMONY	NC	NA	NC	NA		General Toxicity /	5.7E-01	NA	2.0E-02	5.9E-01
			BARIUM	NC	NA	NC	NA		Kidney	5.0E-02	NA	3.7E-03	5.3E-02
			BERYLLIUM	NC	NA	NC	NA		GI system	5.1E-02	NA	3.8E-02	8.9E-02
			CADMIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.6E-01	2.7E+00
			CHROMIUM	NC	NA	NC	NA		NOAEL	8.5E-03	NA	6.8E-03	1.5E-02
			COBALT	NC	NA	NC	NA		Endocrine	6.8E+00	NA	--	6.8E+00
			COPPER	NC	NA	NC	NA		Undetermined	3.6E+01	NA	1.9E-01	3.6E+01
			IRON	NC	NA	NC	NA			1.3E+01	NA	--	1.3E+01
			LEAD	--	NA	--	NA			--	NA	--	
			MANGANESE	NC	NA	NC	NA		Nervous System	1.5E-01	NA	1.9E-02	1.7E-01
			MERCURY	NC	NA	NC	NA		Immune system	7.9E-02	NA	5.9E-03	8.5E-02
			NICKEL	NC	NA	NC	NA		General Toxicity	3.3E-01	NA	8.6E-03	3.4E-01
			SELENIUM	NC	NA	NC	NA		Skin / Liver	4.1E-02	NA	2.1E-04	4.1E-02
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory	1.4E-02	NA	1.1E-03	1.5E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	2.2E+01	NA	1.1E-01	2.2E+01
			VANADIUM	NC	NA	NC	NA		Kidney	2.2E+00	NA	4.4E-01	2.6E+00
			ZINC	NC	NA	NC	NA		Liver	2.0E+01	NA	6.4E-02	2.0E+01
			CHEMICAL TOTAL	9.5E-04	--	4.5E-05	--	1E-03		1.3E+02	--	5.5E+00	1E+02
		EXPOSURE POINT TOTAL						1E-03					1E+02
	EXPOSURE MEDIUM TOTAL							1E-03					1E+02

TABLE H-38
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - SHOWER AIR	1,1,2,2-TETRACHLOROETHANE	NA	2.5E-05	NA	NA	2.5E-05		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	1.6E+00	NA	1.6E+00
			1,1-DICHLOROETHANE	NA	6.7E-07	NA	NA	6.7E-07	Kidney	NA	2.4E-03	NA	2.4E-03
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA			NA	--	NA	
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.2E+02	NA	1.2E+02
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	2.0E+00	NA	2.0E+00
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	1.2E+00	NA	1.2E+00
			1,2-DICHLOROETHANE	NA	1.2E-04	NA	NA	1.2E-04	Nervous System	NA	1.9E+00	NA	1.9E+00
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory	NA	2.7E+00	NA	2.7E+00
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Undetermined	NA	2.6E-01	NA	2.6E-01
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined	NA	--	NA	
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.8E-04	NA	NA	4.8E-04	Developmental	NA	1.6E-01	NA	1.6E-01
			1-CHLOROBUTANE	NA	NC	NA	NA			NA	--	NA	
			2-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	5.3E-04	NA	NA	5.3E-04	Immune system	NA	6.6E+00	NA	6.6E+00
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	1.6E+01	NA	1.6E+01
			CHLOROFORM	NA	2.6E-06	NA	NA	2.6E-06	Liver	NA	3.4E-03	NA	3.4E-03
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		Developmental	NA	2.0E-01	NA	2.0E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	7.3E-07	NA	NA	7.3E-07	Liver	NA	3.5E-01	NA	3.5E-01
			METHYL-T-BUTYL ETHER	NA	5.7E-07	NA	NA	5.7E-07	Liver / Kidney	NA	2.1E-03	NA	2.1E-03
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	1.5E+00	NA	1.5E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	1.5E+00	NA	1.5E+00
			P-CHLOROTOLUENE	NA	NC	NA	NA			NA	--	NA	
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	2.6E-08	NA	NA	2.6E-08	Nervous System	NA	7.4E-03	NA	7.4E-03
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	3.7E-01	NA	3.7E-01
			TRICHLOROETHYLENE	NA	4.9E-06	NA	NA	4.9E-06	Nervous System	NA	1.8E+00	NA	1.8E+00
			VINYL CHLORIDE	NA	4.3E-05	NA	NA	4.3E-05	Liver	NA	2.8E-01	NA	2.8E-01
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.9E+00	NA	1.9E+00
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA						
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA			NA	1.1E+00	NA	1.1E+00
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.2E-03	--	--	1E-03		--	1.6E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02

TABLE H-38
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - RESIDENT - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: RESIDENT
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	2.1E-03	NA	1.1E-03	3.1E-03
			BENZO(A)PYRENE	1.0E-07	NA	5.2E-08	NA	1.5E-07	Kidney	6.7E-07	NA	3.5E-07	1.0E-06
			BENZO(B)FLUORANTHENE	1.2E-08	NA	6.2E-09	NA	1.8E-08	Kidney	7.9E-07	NA	4.1E-07	1.2E-06
			Biphenyl	NC	NA	NC	NA		Kidney	9.1E-06	NA	3.6E-06	1.3E-05
			NAPHTHALENE	NC	NA	NC	NA		General Toxicity	7.2E-05	NA	3.7E-05	1.1E-04
			ALUMINUM	NC	NA	NC	NA		Nervous System	6.2E-03	NA	--	6.2E-03
			ARSENIC	2.7E-06	NA	5.5E-07	NA	3.3E-06	Skin	1.8E-02	NA	3.5E-03	2.1E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	1.8E-05	NA	--	1.8E-05
			VANADIUM	NC	NA	NC	NA		Kidney	1.5E-02	NA	--	1.5E-02
												--	
			CHEMICAL TOTAL	2.8E-06	--	6.0E-07	--	3E-06		4.1E-02	--	4.7E-03	5E-02
		EXPOSURE POINT TOTAL						3E-06					5E-02
	EXPOSURE MEDIUM TOTAL							3E-06					5E-02
RECEPTOR TOTAL								**2E-03**					**3E+02**
							TOTAL RISK ACROSS ALL MEDIA	**2E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**2.3E+00**
	--
TOTAL DEVELOPMENTAL HI =	**3.6E-01**
TOTAL ENDOCRINE HI =	**1.0E+01**
TOTAL EYE HI =	**1.5E-02**
TOTAL GI SYSTEM HI =	**8.9E-02**
TOTAL HEMATOLOGICAL HI =	**3.5E+00**
TOTAL IMMUNE SYSTEM HI =	**9.6E+00**
TOTAL KIDNEY HI =	**7.6E+00**
TOTAL LIVER HI =	**2.8E+01**
	--
TOTAL NERVOUS SYSTEM HI =	**9.1E+00**
TOTAL NOAEL HI =	**2.3E+02**
	--
TOTAL SKIN HI =	**2.4E+00**
TOTAL RESPIRATORY HI =	**4.3E+00**

TABLE H-39
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	1,1,2,2-TETRACHLOROETHANE	--	NA	--	NA		General Toxicity				
			1,1,2-TRICHLOROETHANE	--	NA	--	NA		Liver				
			1,1-DICHLOROETHANE	--	NA	--	NA		NOAEL				
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine				
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological			--	
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROETHANE	--	NA	--	NA		Kidney				
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver				
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver			--	
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver				
			1,4-DICHLOROBENZENE	--	NA	--	NA		Endocrine				
			1-CHLOROBUTANE	NC	NA	NC	NA					--	
			2-CHLOROTOLUENE	NC	NA	NC	NA					--	
			3-METHYL HEXANE	NC	NA	NC	NA					--	
			BENZENE	--	NA	--	NA		Immune system /				
			CHLOROBENZENE	NC	NA	NC	NA		Liver				
			CHLOROFORM	--	NA	--	NA		Liver				
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			DIMETHYLSULFIDE	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver				
			M+P-XYLENE	NC	NA	NC	NA		Nervous System			--	
			METHYLENE CHLORIDE	--	NA	--	NA		Liver				
			METHYL-T-BUTYL ETHER	4.5E-14	NA	--	NA	4.5E-14	Liver	5.9E-09	NA	--	5.9E-09
			NAPHTHALENE	NC	NA	NC	NA		Nervous System				
			O-XYLENE	NC	NA	NC	NA		Nervous System			--	
			P-CHLOROTOLUENE	NC	NA	NC	NA					--	
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			SULFUR DIOXIDE	NC	NA	NC	NA					--	
			t-Butyl Alcohol	NC	NA	NC	NA					--	
			TETRACHLOROETHYLENE	--	NA	--	NA		Liver				
			TOLUENE	NC	NA	NC	NA		Liver / Kidney				
			TRICHLOROETHYLENE	--	NA	--	NA		Liver / Kidney				
			VINYL CHLORIDE	--	NA	--	NA		Liver			--	
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System			--	
			1,4-DIOXANE	--	NA	--	NA		Liver				
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological				
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory			--	
			3-NITROANILINE	NC	NA	NC	NA					--	
			ANILINE	--	NA	--	NA						
			Biphenyl	NC	NA	NC	NA		Kidney			--	
			BIS(2-ETHYLHEXYL)PHTHALATE	--	NA	--	NA		Reproductive				
			ALDRIN	--	NA	--	NA		Liver				
			HEPTACHLOR EPOXIDE	--	NA	--	NA		Liver			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System			--	
			ARSENIC	--	NA	--	NA		Skin				
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /				
			BARIUM	NC	NA	NC	NA		Kidney				
			BERYLLIUM	NC	NA	NC	NA		GI system				
			CADMIUM	NC	NA	NC	NA						
			CHROMIUM	NC	NA	NC	NA		NOAEL				
			COBALT	NC	NA	NC	NA		Endocrine			--	
			COPPER	NC	NA	NC	NA		Undetermined				
			IRON	NC	NA	NC	NA					--	
			LEAD	--	NA	--	NA					--	
			MANGANESE	NC	NA	NC	NA		Nervous System				
			MERCURY	NC	NA	NC	NA		Kidney				
			NICKEL	NC	NA	NC	NA		General Toxicity				
			SELENIUM	NC	NA	NC	NA		Skin / Liver				
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory				
			THALLIUM	NC	NA	NC	NA		NOAEL				
			VANADIUM	NC	NA	NC	NA		Kidney				
			ZINC	NC	NA	NC	NA		Hematological				
			CHEMICAL TOTAL	4.5E-14	--	--	--	5E-14		5.9E-09	--	--	6E-09
		EXPOSURE POINT TOTAL						5E-14					6E-09
	EXPOSURE MEDIUM TOTAL							5E-14					6E-09
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-39
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - TRENCH AIR	1,1,2,2-TETRACHLOROETHANE	NA	--	NA	NA						
			1,1,2-TRICHLOROETHANE	NA	--	NA	NA						
			1,1-DICHLOROETHANE	NA	--	NA	NA		Kidney				
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity				
			1,2-DICHLOROETHANE	NA	--	NA	NA		Nervous System				
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Liver				
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	--	NA	NA		Developmental				
			1-CHLOROBUTANE	NA	NC	NA	NA						
			2-CHLOROTOLUENE	NA	NC	NA	NA						
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	--	NA	NA		Immune system				
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined				
			CHLOROFORM	NA	--	NA	NA		Liver				
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear				
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	--	NA	NA		Liver				
			METHYL-T-BUTYL ETHER	NA	6.3E-10	NA	NA	6.3E-10	Liver / Kidney	NA	6.8E-05	NA	6.8E-05
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			O-XYLENE	NA	NC	NA	NA		Nervous System				
			P-CHLOROTOLUENE	NA	NC	NA	NA						
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	--	NA	NA		Nervous System				
			TOLUENE	NA	NC	NA	NA		Nervous System				
			TRICHLOROETHYLENE	NA	--	NA	NA		Nervous System				
			VINYL CHLORIDE	NA	--	NA	NA		Liver				
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System				
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA						
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA						
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY (5)	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA		Respiratory				
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA						
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	6.3E-10	--	--	6E-10		--	6.8E-05	--	7E-05
		EXPOSURE POINT TOTAL						6E-10					7E-05
	EXPOSURE MEDIUM TOTAL							6E-10					7E-05
GROUNDWATER TOTAL								**6E-10**					**7E-05**

TABLE H-39
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	CYCLOHEXANE, METHYL-	NC	NA	NC	NA			--	NA	--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	4.9E-03	NA	1.9E-03	6.8E-03
			BENZO(A)PYRENE	9.9E-09	NA	3.8E-09	NA	1.4E-08	Kidney	4.7E-07	NA	1.8E-07	6.6E-07
			BENZO(B)FLUORANTHENE	1.2E-09	NA	4.6E-10	NA	1.6E-09	Kidney	5.6E-07	NA	2.2E-07	7.8E-07
			Biphenyl	NC	NA	NC	NA		Kidney	1.1E-04	NA	3.2E-05	1.4E-04
			NAPHTHALENE	NC	NA	NC	NA		Nervous System	5.7E-06	NA	2.2E-06	7.9E-06
			ALUMINUM	NC	NA	NC	NA		Nervous System	1.5E-02	NA	--	1.5E-02
			ARSENIC	2.7E-07	NA	4.0E-08	NA	3.1E-07	Skin	4.2E-02	NA	6.3E-03	4.8E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.4E-05	NA	--	6.4E-05
			VANADIUM	NC	NA	NC	NA		Kidney	2.5E-01	NA	--	2.5E-01
												--	
			CHEMICAL TOTAL	2.8E-07	--	4.5E-08	--	3E-07		3.1E-01	--	8.2E-03	3E-01
		EXPOSURE POINT TOTAL						3E-07					3E-01
	EXPOSURE MEDIUM TOTAL							3E-07					3E-01
SOIL	AIR	DUST AT SITE	CYCLOHEXANE, METHYL-	NA	NC	NA	NA			NA	3.3E-10	NA	3.3E-10
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)PYRENE	NA	7.7E-13	NA	NA	7.7E-13		NA	--	NA	
			BENZO(B)FLUORANTHENE	NA	9.2E-14	NA	NA	9.2E-14		NA	--	NA	
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	5.9E-07	NA	5.9E-07
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	1.5E-03	NA	1.5E-03
			ARSENIC	NA	6.7E-10	NA	NA	6.7E-10	Cardiovascular / Nervous	NA	7.2E-04	NA	7.2E-04
			CHROMIUM	NA	NC	NA	NA		Respiratory	NA	6.7E-06	NA	6.7E-06
			VANADIUM	NA	NC	NA	NA			NA	9.0E-04	NA	9.0E-04
			CHEMICAL TOTAL	--	6.7E-10	--	--	7E-10		--	3.1E-03	--	3E-03
			RADIONUCLIDE TOTAL										
		EXPOSURE POINT TOTAL						7E-10					3E-03
RECEPTOR TOTAL								**3E-07**					**3E-01**
							TOTAL RISK ACROSS ALL MEDIA	**3E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**				**3E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 4/09/15
Checked by: BJR 4/10/2015

	--
TOTAL CARDIOVASCULAR HI =	**7.2E-04**
TOTAL DEVELOPMENTAL HI =	**7.2E-04**
	--
	--
	--
	--
	--
TOTAL KIDNEY HI =	**2.5E-01**
TOTAL LIVER HI =	**6.8E-05**
	--
TOTAL NERVOUS SYSTEM HI =	**1.7E-02**
TOTAL NOAEL HI =	**9.7E-04**
	--
TOTAL SKIN HI =	**4.8E-02**
TOTAL RESPIRATORY HI =	**6.8E-03**

TABLE H-40
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	1,1,2,2-TETRACHLOROETHANE	1.3E-10	NA	5.9E-09	NA	6.1E-09	General Toxicity	9.4E-08	NA	4.2E-06	4.2E-06
			1,1,2-TRICHLOROETHANE	--	NA	--	NA		Liver				
			1,1-DICHLOROETHANE	2.4E-13	NA	9.1E-12	NA	9.4E-12	NOAEL	1.5E-09	NA	5.6E-08	5.8E-08
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.0E-05	NA	7.6E-03	7.6E-03
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	2.2E-05	NA	--	2.2E-05
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	5.8E-06	NA	1.3E-03	1.3E-03
			1,2-DICHLOROETHANE	2.7E-10	NA	6.6E-09	NA	6.9E-09	Kidney	1.1E-05	NA	2.5E-04	2.6E-04
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver				
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver	2.3E-07	NA	--	2.3E-07
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.9E-05	NA	5.9E-03	5.9E-03
			1,4-DICHLOROBENZENE	8.2E-11	NA	1.9E-08	NA	1.9E-08	Endocrine	1.5E-05	NA	3.5E-03	3.5E-03
			1-CHLOROBUTANE	NC	NA	NC	NA					--	
			2-CHLOROTOLUENE	NC	NA	NC	NA					--	
			3-METHYL HEXANE	NC	NA	NC	NA					--	
			BENZENE	8.3E-09	NA	6.7E-07	NA	6.8E-07	Immune system /	1.1E-03	NA	8.5E-02	8.6E-02
			CHLOROBENZENE	NC	NA	NC	NA		Liver	6.8E-04	NA	1.0E-01	1.0E-01
			CHLOROFORM	5.2E-12	NA	2.1E-10	NA	2.1E-10	Liver	1.2E-07	NA	4.7E-06	4.8E-06
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			DIMETHYLSULFIDE	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver	3.3E-05	NA	8.2E-03	8.3E-03
			M+P-XYLENE	NC	NA	NC	NA		Nervous System			--	
			METHYLENE CHLORIDE	5.0E-13	NA	1.0E-11	NA	1.1E-11	Liver	2.9E-07	NA	5.9E-06	6.2E-06
			METHYL-T-BUTYL ETHER	2.1E-13	NA	--	NA	2.1E-13	Liver	2.7E-08	NA	--	2.7E-08
			NAPHTHALENE	NC	NA	NC	NA		Nervous System	3.5E-07	NA	8.7E-05	8.7E-05
			O-XYLENE	NC	NA	NC	NA		Nervous System			--	
			P-CHLOROTOLUENE	NC	NA	NC	NA					--	
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			SULFUR DIOXIDE	NC	NA	NC	NA					--	
			t-Butyl Alcohol	NC	NA	NC	NA			--	NA	--	
			TETRACHLOROETHYLENE	5.3E-13	NA	2.7E-08	NA	2.7E-08	Liver	1.8E-07	NA	3.5E-05	3.5E-05
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	2.9E-05	NA	4.8E-03	4.8E-03
			TRICHLOROETHYLENE	2.7E-11	NA	--	NA	2.7E-11	Liver / Kidney	1.4E-04	NA	9.3E-03	9.4E-03
			VINYL CHLORIDE	9.1E-10	NA	--	NA	9.1E-10	Liver	2.9E-05	NA	--	2.9E-05
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System	1.8E-05	NA	--	1.8E-05
			1,4-DIOXANE	1.2E-09	NA	2.2E-09	NA	3.4E-09	Liver	1.6E-06	NA	3.1E-06	4.8E-06
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological	1.2E-05	NA	7.4E-04	7.5E-04
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	7.3E-06	NA	--	7.3E-06
			3-NITROANILINE	NC	NA	NC	NA					--	
			ANILINE	--	NA	--	NA						
			Biphenyl	NC	NA	NC	NA		Kidney	1.4E-06	NA	--	1.4E-06
			BIS(2-ETHYLHEXYL)PHTHALATE	--	NA	--	NA		Reproductive				
			ALDRIN	--	NA	--	NA		Liver				
			HEPTACHLOR EPOXIDE	--	NA	--	NA		Liver			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System			--	
			ARSENIC	--	NA	--	NA		Skin				
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /				
			BARIUM	NC	NA	NC	NA		Kidney				
			BERYLLIUM	NC	NA	NC	NA		GI system				
			CADMIUM	NC	NA	NC	NA						
			CHROMIUM	NC	NA	NC	NA		NOAEL				
			COBALT	NC	NA	NC	NA		Endocrine			--	
			COPPER	NC	NA	NC	NA		Undetermined				
			IRON	NC	NA	NC	NA					--	
			LEAD	--	NA	--	NA					--	
			MANGANESE	NC	NA	NC	NA		Nervous System				
			MERCURY	NC	NA	NC	NA		Kidney				
			NICKEL	NC	NA	NC	NA		General Toxicity				
			SELENIUM	NC	NA	NC	NA		Skin / Liver				
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory				
			THALLIUM	NC	NA	NC	NA		NOAEL				
			VANADIUM	NC	NA	NC	NA		Kidney				
			ZINC	NC	NA	NC	NA		Hematological				
			CHEMICAL TOTAL	1.1E-08	--	7.3E-07	--	7E-07		2.1E-03	--	2.3E-01	2E-01
		EXPOSURE POINT TOTAL						7E-07					2E-01
	EXPOSURE MEDIUM TOTAL							7E-07					2E-01
		EXPOSURE POINT TOTAL						0E+00					0E+00

TABLE H-40
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	AIR	PLUME - TRENCH AIR	1,1,2,2-TETRACHLOROETHANE	NA	1.7E-06	NA	NA	1.7E-06		NA	--	NA	
			1,1,2-TRICHLOROETHANE	NA	--	NA	NA						
			1,1-DICHLOROETHANE	NA	6.6E-08	NA	NA	6.6E-08	Kidney	NA	5.8E-04	NA	5.8E-04
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	1.1E+01	NA	1.1E+01
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	4.0E-01	NA	4.0E-01
			1,2-DICHLOROETHANE	NA	1.7E-05	NA	NA	1.7E-05	Nervous System	NA	6.5E-01	NA	6.5E-01
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Liver	NA	4.4E-02	NA	4.4E-02
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	4.7E-05	NA	NA	4.7E-05	Developmental	NA	1.5E+00	NA	1.5E+00
			1-CHLOROBUTANE	NA	NC	NA	NA						
			2-CHLOROTOLUENE	NA	NC	NA	NA						
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	1.2E-03	NA	NA	1.2E-03	Immune system	NA	1.4E+02	NA	1.4E+02
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	4.5E+01	NA	4.5E+01
			CHLOROFORM	NA	2.3E-06	NA	NA	2.3E-06	Liver	NA	2.9E-02	NA	2.9E-02
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear	NA	2.1E-01	NA	2.1E-01
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	1.7E-09	NA	NA	1.7E-09	Liver	NA	1.2E-02	NA	1.2E-02
			METHYL-T-BUTYL ETHER	NA	3.0E-09	NA	NA	3.0E-09	Liver / Kidney	NA	3.2E-04	NA	3.2E-04
			NAPHTHALENE	NA	NC	NA	NA		Respiratory	NA	4.2E+00	NA	4.2E+00
			O-XYLENE	NA	NC	NA	NA		Nervous System				
			P-CHLOROTOLUENE	NA	NC	NA	NA						
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	1.2E-07	NA	NA	1.2E-07	Nervous System	NA	8.2E-01	NA	8.2E-01
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	5.1E+00	NA	5.1E+00
			TRICHLOROETHYLENE	NA	3.4E-06	NA	NA	3.4E-06	Nervous System	NA	1.1E-01	NA	1.1E-01
			VINYL CHLORIDE	NA	3.4E-05	NA	NA	3.4E-05	Liver	NA	7.1E+00	NA	7.1E+00
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	1.6E+01	NA	1.6E+01
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA						
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA						
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY (5)	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA		Respiratory				
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA						
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	1.3E-03	--	--	1E-03		--	2.3E+02	--	2E+02
		EXPOSURE POINT TOTAL						1E-03					2E+02
	EXPOSURE MEDIUM TOTAL							1E-03					2E+02
GROUNDWATER TOTAL								**1E-03**					**2E+02**

TABLE H-40
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 1 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	--	NA	--	NA		General Toxicity			--	
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.8E-06	NA	8.4E-07	3.6E-06
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	2.1E-04	NA	--	2.1E-04
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.4E-04	NA	4.2E-05	1.8E-04
			1,2-DICHLOROETHANE	1.7E-08	NA	--	NA	1.7E-08	Kidney	6.6E-04	NA	--	6.6E-04
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver			--	
			1,4-DICHLOROBENZENE	2.2E-10	NA	6.7E-11	NA	2.9E-10	Endocrine	4.1E-05	NA	1.2E-05	5.3E-05
			BENZENE	3.0E-08	NA	--	NA	3.0E-08	Immune system /	3.9E-03	NA	--	3.9E-03
			CHLOROBENZENE	NC	NA	NC	NA		Liver	3.1E-04	NA	--	3.1E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver	2.5E-03	NA	--	2.5E-03
			METHYLENE CHLORIDE	3.0E-09	NA	--	NA	3.0E-09	Liver	1.7E-03	NA	--	1.7E-03
			O-XYLENE	NC	NA	NC	NA		Nervous System	4.4E-04	NA	--	4.4E-04
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			TETRACHLOROETHYLENE	--	NA	--	NA		Liver			--	
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	1.1E-03	NA	--	1.1E-03
			TRICHLOROETHYLENE	5.7E-09	NA	--	NA	5.7E-09	Liver / Kidney	2.9E-02	NA	--	2.9E-02
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System	1.4E-03	NA	--	1.4E-03
			1,2,4,5 -TETRACHLOROBENZENE	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	3.0E-04	NA	1.2E-04	4.2E-04
			BENZO(A)ANTHRACENE	--	NA	--	NA		Kidney			--	
			BENZO(A)PYRENE	--	NA	--	NA		Kidney			--	
			BENZO(B)FLUORANTHENE	--	NA	--	NA		Kidney			--	
			Biphenyl	NC	NA	NC	NA		Kidney	2.7E-05	NA	8.0E-06	3.5E-05
			DIBENZO(A,H)ANTHRACENE	--	NA	--	NA		Kidney			--	
			INDENO(1,2,3-CD)PYRENE	--	NA	--	NA		Kidney			--	
			NAPHTHALENE	NC	NA	NC	NA		Nervous System			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.5E-02	NA	--	2.5E-02
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological			--	
			ARSENIC	3.1E-07	NA	4.6E-08	NA	3.5E-07	Skin	4.8E-02	NA	7.2E-03	5.5E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.7E-05	NA	--	6.7E-05
			COBALT	NC	NA	NC	NA		Endocrine	2.3E-03	NA	--	2.3E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.0E-02	NA	--	3.0E-02
			MANGANESE	NC	NA	NC	NA		Nervous System	1.6E-03	NA	--	1.6E-03
			IRON	NC	NA	NC	NA			9.4E-02	NA	--	9.4E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	6.8E-03	NA	--	6.8E-03
			VANADIUM	NC	NA	NC	NA		Kidney	1.3E-01	NA	--	1.3E-01
			CHEMICAL TOTAL	3.6E-07	--	4.6E-08	--	4E-07		3.8E-01	--	7.3E-03	4E-01
		EXPOSURE POINT TOTAL						4E-07					4E-01
	EXPOSURE MEDIUM TOTAL							4E-07					4E-01
SOIL	AIR	DUST AT SITE	1,1,2,2-TETRACHLOROETHANE	NA	--	NA	NA						
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	6.5E-09	NA	6.5E-09
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	2.2E-08	NA	2.2E-08
			1,2-DICHLOROETHANE	NA	2.6E-12	NA	NA	2.6E-12	Nervous System	NA	9.8E-08	NA	9.8E-08
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	2.3E-13	NA	NA	2.3E-13	Developmental	NA	7.5E-09	NA	7.5E-09
			BENZENE	NA	2.2E-12	NA	NA	2.2E-12	Immune system	NA	2.5E-07	NA	2.5E-07
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	2.2E-08	NA	2.2E-08
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear	NA	7.3E-09	NA	7.3E-09
			METHYLENE CHLORIDE	NA	7.7E-15	NA	NA	7.7E-15	Liver	NA	5.4E-08	NA	5.4E-08
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	2.3E-07	NA	2.3E-07
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	--	NA	NA		Nervous System				
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	9.1E-08	NA	9.1E-08
			TRICHLOROETHYLENE	NA	2.7E-13	NA	NA	2.7E-13	Nervous System	NA	8.4E-09	NA	8.4E-09
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	7.1E-07	NA	7.1E-07
			1,2,4,5 -TETRACHLOROBENZENE	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)ANTHRACENE	NA	--	NA	NA						
			BENZO(A)PYRENE	NA	--	NA	NA						

TABLE H-40
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 1

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			BENZO(B)FLUORANTHENE	NA	--	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			DIBENZO(A,H)ANTHRACENE	NA	--	NA	NA						
			INDENO(1,2,3-CD)PYRENE	NA	--	NA	NA						
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	2.6E-03	NA	2.6E-03
			ANTIMONY	NA	NC	NA	NA						
			ARSENIC	NA	7.6E-10	NA	NA	7.6E-10	Developmental / Cardiovascular / Nervous system	NA	8.3E-04	NA	8.3E-04
			CHROMIUM	NA	NC	NA	NA		Respiratory	NA	7.0E-06	NA	7.0E-06
			COBALT	NA	4.7E-10	NA	NA	4.7E-10	Respiratory	NA	1.8E-04	NA	1.8E-04
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MANGANESE	NA	NC	NA	NA		Nervous System	NA	2.3E-03	NA	2.3E-03
			IRON	NA	NC	NA	NA			NA	--	NA	
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	4.9E-04	NA	4.9E-04
			CHEMICAL TOTAL	--	1.2E-09	--	--	1E-09		--	6.5E-03	--	6E-03
		EXPOSURE POINT TOTAL						1E-09					6E-03
RECEPTOR TOTAL								**1E-03**					**2E+02**
							TOTAL RISK ACROSS ALL MEDIA	**1E-03**	**TOTAL HAZARD ACROSS ALL MEDIA**				**2E+02**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**4.0E-01**
TOTAL CARDIOVASCULAR HI =	**8.3E-04**
TOTAL DEVELOPMENTAL HI =	**1.5E+00**
TOTAL ENDOCRINE HI =	**1.4E-02**
	--
	--
TOTAL HEMATOLOGICAL HI =	**9.1E-02**
TOTAL IMMUNE SYSTEM HI =	**1.4E+02**
TOTAL KIDNEY HI =	**1.8E-01**
TOTAL LIVER HI =	**7.4E+00**
	--
TOTAL NERVOUS SYSTEM HI =	**2.3E+01**
TOTAL NOAEL HI =	**5.6E+01**
	--
TOTAL SKIN HI =	**5.5E-02**
TOTAL RESPIRATORY HI =	**4.2E+00**

TABLE H-41
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	1,1,2,2-TETRACHLOROETHANE	--	NA	--	NA		General Toxicity				
			1,1,2-TRICHLOROETHANE	--	NA	--	NA		Liver				
			1,1-DICHLOROETHANE	--	NA	--	NA		NOAEL				
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	1.3E-08	NA	5.1E-06	5.1E-06
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	2.9E-07	NA	--	2.9E-07
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	3.9E-09	NA	9.0E-07	9.0E-07
			1,2-DICHLOROETHANE	3.1E-12	NA	7.3E-11	NA	7.6E-11	Kidney	1.2E-07	NA	2.8E-06	2.9E-06
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver				
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver			--	
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver				
			1,4-DICHLOROBENZENE	--	NA	--	NA		Endocrine				
			1-CHLOROBUTANE	NC	NA	NC	NA					--	
			2-CHLOROTOLUENE	NC	NA	NC	NA					--	
			3-METHYL HEXANE	NC	NA	NC	NA					--	
			BENZENE	--	NA	--	NA		Immune system /				
			CHLOROBENZENE	NC	NA	NC	NA		Liver	3.4E-08	NA	5.1E-06	5.1E-06
			CHLOROFORM	5.2E-13	NA	2.1E-11	NA	2.1E-11	Liver	1.2E-08	NA	4.7E-07	4.8E-07
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			DIMETHYLSULFIDE	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver				
			M+P-XYLENE	NC	NA	NC	NA		Nervous System			--	
			METHYLENE CHLORIDE	--	NA	--	NA		Liver				
			METHYL-T-BUTYL ETHER	1.4E-13	NA	--	NA	1.4E-13	Liver	1.8E-08	NA	--	1.8E-08
			NAPHTHALENE	NC	NA	NC	NA		Nervous System				
			O-XYLENE	NC	NA	NC	NA		Nervous System			--	
			P-CHLOROTOLUENE	NC	NA	NC	NA					--	
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			SULFUR DIOXIDE	NC	NA	NC	NA					--	
			t-Butyl Alcohol	NC	NA	NC	NA					--	
			TETRACHLOROETHYLENE	3.5E-14	NA	1.8E-09	NA	1.8E-09	Liver	1.2E-08	NA	2.3E-06	2.3E-06
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	1.5E-09	NA	2.4E-07	2.4E-07
			TRICHLOROETHYLENE	1.2E-12	NA	--	NA	1.2E-12	Liver / Kidney	5.9E-06	NA	4.0E-04	4.0E-04
			VINYL CHLORIDE	--	NA	--	NA		Liver			--	
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System			--	
			1,4-DIOXANE	--	NA	--	NA		Liver				
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological				
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory			--	
			3-NITROANILINE	NC	NA	NC	NA					--	
			ANILINE	--	NA	--	NA						
			Biphenyl	NC	NA	NC	NA		Kidney			--	
			BIS(2-ETHYLHEXYL)PHTHALATE	--	NA	--	NA		Reproductive				
			ALDRIN	--	NA	--	NA		Liver				
			HEPTACHLOR EPOXIDE	--	NA	--	NA		Liver			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System			--	
			ARSENIC	--	NA	--	NA		Skin				
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /				
			BARIUM	NC	NA	NC	NA		Kidney				
			BERYLLIUM	NC	NA	NC	NA		GI system				
			CADMIUM	NC	NA	NC	NA						
			CHROMIUM	NC	NA	NC	NA		NOAEL				
			COBALT	NC	NA	NC	NA		Endocrine			--	
			COPPER	NC	NA	NC	NA		Undetermined				
			IRON	NC	NA	NC	NA					--	
			LEAD	--	NA	--	NA					--	
			MANGANESE	NC	NA	NC	NA		Nervous System				
			MERCURY	NC	NA	NC	NA		Kidney				
			NICKEL	NC	NA	NC	NA		General Toxicity				
			SELENIUM	NC	NA	NC	NA		Skin / Liver				
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory				
			THALLIUM	NC	NA	NC	NA		NOAEL				
			VANADIUM	NC	NA	NC	NA		Kidney				
			ZINC	NC	NA	NC	NA		Hematological				
			CHEMICAL TOTAL	4.9E-12	--	1.9E-09	--	2E-09		6.4E-06	--	4.2E-04	4E-04
		EXPOSURE POINT TOTAL						2E-09					4E-04
	EXPOSURE MEDIUM TOTAL							2E-09					4E-04

TABLE H-41
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
		EXPOSURE POINT TOTAL						0E+00					0E+00
GROUND WATER	AIR	PLUME - TRENCH AIR	1,1,2,2-TETRACHLOROETHANE	NA	--	NA	NA						
			1,1,2-TRICHLOROETHANE	NA	--	NA	NA						
			1,1-DICHLOROETHANE	NA	--	NA	NA		Kidney				
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	7.2E-03	NA	7.2E-03
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	2.7E-04	NA	2.7E-04
			1,2-DICHLOROETHANE	NA	1.9E-07	NA	NA	1.9E-07	Nervous System	NA	7.3E-03	NA	7.3E-03
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Liver				
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	--	NA	NA		Developmental				
			1-CHLOROBUTANE	NA	NC	NA	NA						
			2-CHLOROTOLUENE	NA	NC	NA	NA						
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	--	NA	NA		Immune system				
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	2.2E-03	NA	2.2E-03
			CHLOROFORM	NA	2.3E-07	NA	NA	2.3E-07	Liver	NA	2.9E-03	NA	2.9E-03
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear				
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	--	NA	NA		Liver				
			METHYL-T-BUTYL ETHER	NA	1.9E-09	NA	NA	1.9E-09	Liver / Kidney	NA	2.0E-04	NA	2.0E-04
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			O-XYLENE	NA	NC	NA	NA		Nervous System				
			P-CHLOROTOLUENE	NA	NC	NA	NA						
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	8.1E-09	NA	NA	8.1E-09	Nervous System	NA	5.5E-02	NA	5.5E-02
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	2.5E-04	NA	2.5E-04
			TRICHLOROETHYLENE	NA	1.5E-07	NA	NA	1.5E-07	Nervous System	NA	4.6E-03	NA	4.6E-03
			VINYL CHLORIDE	NA	--	NA	NA		Liver				
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System				
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA						
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA						
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY (5)	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA		Respiratory				
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA						
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	5.7E-07	--	--	6E-07		--	8.0E-02	--	8E-02
		EXPOSURE POINT TOTAL						6E-07					8E-02
	EXPOSURE MEDIUM TOTAL							6E-07					8E-02
GROUNDWATER TOTAL								**6E-07**					**8E-02**

TABLE H-41
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 2 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	--	NA	--	NA		General Toxicity			--	
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.8E-06	NA	8.4E-07	3.6E-06
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	2.1E-04	NA	--	2.1E-04
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.4E-04	NA	4.2E-05	1.8E-04
			1,2-DICHLOROETHANE	1.7E-08	NA	--	NA	1.7E-08	Kidney	6.6E-04	NA	--	6.6E-04
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver			--	
			1,4-DICHLOROBENZENE	2.2E-10	NA	6.7E-11	NA	2.9E-10	Endocrine	4.1E-05	NA	1.2E-05	5.3E-05
			BENZENE	3.0E-08	NA	--	NA	3.0E-08	Immune system /	3.9E-03	NA	--	3.9E-03
			CHLOROBENZENE	NC	NA	NC	NA		Liver	3.1E-04	NA	--	3.1E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver	2.5E-03	NA	--	2.5E-03
			METHYLENE CHLORIDE	3.0E-09	NA	--	NA	3.0E-09	Liver	1.7E-03	NA	--	1.7E-03
			O-XYLENE	NC	NA	NC	NA		Nervous System	4.4E-04	NA	--	4.4E-04
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			TETRACHLOROETHYLENE	--	NA	--	NA		Liver			--	
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	1.1E-03	NA	--	1.1E-03
			TRICHLOROETHYLENE	5.7E-09	NA	--	NA	5.7E-09	Liver / Kidney	2.9E-02	NA	--	2.9E-02
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System	1.4E-03	NA	--	1.4E-03
			1,2,4,5 -TETRACHLOROBENZENE	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	3.0E-04	NA	1.2E-04	4.2E-04
			BENZO(A)ANTHRACENE	--	NA	--	NA		Kidney			--	
			BENZO(A)PYRENE	--	NA	--	NA		Kidney			--	
			BENZO(B)FLUORANTHENE	--	NA	--	NA		Kidney			--	
			Biphenyl	NC	NA	NC	NA		Kidney	2.7E-05	NA	8.0E-06	3.5E-05
			DIBENZO(A,H)ANTHRACENE	--	NA	--	NA		Kidney			--	
			INDENO(1,2,3-CD)PYRENE	--	NA	--	NA		Kidney			--	
			NAPHTHALENE	NC	NA	NC	NA		Nervous System			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.5E-02	NA	--	2.5E-02
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological			--	
			ARSENIC	3.1E-07	NA	4.6E-08	NA	3.5E-07	Skin	4.8E-02	NA	7.2E-03	5.5E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.7E-05	NA	--	6.7E-05
			COBALT	NC	NA	NC	NA		Endocrine	2.3E-03	NA	--	2.3E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.0E-02	NA	--	3.0E-02
			MANGANESE	NC	NA	NC	NA		Nervous System	1.6E-03	NA	--	1.6E-03
			IRON	NC	NA	NC	NA			9.4E-02	NA	--	9.4E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	6.8E-03	NA	--	6.8E-03
			VANADIUM	NC	NA	NC	NA		Kidney	1.3E-01	NA	--	1.3E-01
			CHEMICAL TOTAL	3.6E-07	--	4.6E-08	--	4E-07		3.8E-01	--	7.3E-03	4E-01
		EXPOSURE POINT TOTAL						4E-07					4E-01
	EXPOSURE MEDIUM TOTAL							4E-07					4E-01
SOIL	AIR	DUST AT SITE	1,1,2,2-TETRACHLOROETHANE	NA	--	NA	NA						
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	6.5E-09	NA	6.5E-09
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	2.2E-08	NA	2.2E-08
			1,2-DICHLOROETHANE	NA	2.6E-12	NA	NA	2.6E-12	Nervous System	NA	9.8E-08	NA	9.8E-08
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	2.3E-13	NA	NA	2.3E-13	Developmental	NA	7.5E-09	NA	7.5E-09
			BENZENE	NA	2.2E-12	NA	NA	2.2E-12	Immune system	NA	2.5E-07	NA	2.5E-07
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	2.2E-08	NA	2.2E-08
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear	NA	7.3E-09	NA	7.3E-09
			METHYLENE CHLORIDE	NA	7.7E-15	NA	NA	7.7E-15	Liver	NA	5.4E-08	NA	5.4E-08
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	2.3E-07	NA	2.3E-07
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	--	NA	NA		Nervous System				
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	9.1E-08	NA	9.1E-08
			TRICHLOROETHYLENE	NA	2.7E-13	NA	NA	2.7E-13	Nervous System	NA	8.4E-09	NA	8.4E-09
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	7.1E-07	NA	7.1E-07
			1,2,4,5 -TETRACHLOROBENZENE	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)ANTHRACENE	NA	--	NA	NA						
			BENZO(A)PYRENE	NA	--	NA	NA						
			BENZO(B)FLUORANTHENE	NA	--	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	

TABLE H-41
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 2

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			DIBENZO(A,H)ANTHRACENE	NA	--	NA	NA						
			INDENO(1,2,3-CD)PYRENE	NA	--	NA	NA						
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	2.6E-03	NA	2.6E-03
			ANTIMONY	NA	NC	NA	NA						
			ARSENIC	NA	7.6E-10	NA	NA	7.6E-10	Developmental / Cardiovascular / Nervous system	NA	8.3E-04	NA	8.3E-04
			CHROMIUM	NA	NC	NA	NA		Respiratory	NA	7.0E-06	NA	7.0E-06
			COBALT	NA	4.7E-10	NA	NA	4.7E-10	Respiratory	NA	1.8E-04	NA	1.8E-04
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MANGANESE	NA	NC	NA	NA		Nervous System	NA	2.3E-03	NA	2.3E-03
			IRON	NA	NC	NA	NA			NA	--	NA	
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	4.9E-04	NA	4.9E-04
			CHEMICAL TOTAL	--	1.2E-09	--	--	1E-09		--	6.5E-03	--	6E-03
		EXPOSURE POINT TOTAL						1E-09					6E-03
RECEPTOR TOTAL								**1E-06**					**5E-01**
							TOTAL RISK ACROSS ALL MEDIA	**1E-06**				**TOTAL HAZARD ACROSS ALL MEDIA**	**5E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 04/09/15

TOTAL GENERAL TOXICITY HI =	**2.7E-04**
TOTAL CARDIOVASCULAR HI =	**8.3E-04**
TOTAL DEVELOPMENTAL HI =	**8.3E-04**
TOTAL ENDOCRINE HI =	**2.4E-03**
	--
	--
TOTAL HEMATOLOGICAL HI =	**4.1E-03**
TOTAL IMMUNE SYSTEM HI =	**3.9E-03**
TOTAL KIDNEY HI =	**1.7E-01**
TOTAL LIVER HI =	**3.8E-02**
	--
TOTAL NERVOUS SYSTEM HI =	**1.0E-01**
TOTAL NOAEL HI =	**1.4E-01**
	--
TOTAL SKIN HI =	**5.5E-02**
TOTAL RESPIRATORY HI =	**6.1E-04**

TABLE H-42
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
GROUND WATER	GROUND WATER	GROUNDWATER IN A TRENCH	1,1,2,2-TETRACHLOROETHANE	--	NA	--	NA		General Toxicity				
			1,1,2-TRICHLOROETHANE	--	NA	--	NA		Liver				
			1,1-DICHLOROETHANE	--	NA	--	NA		NOAEL				
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine				
			1,2,4-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological			--	
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROETHANE	--	NA	--	NA		Kidney				
			1,2-DICHLOROETHYLENE	NC	NA	NC	NA		Liver				
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver				
			1,2-TRANS-DICHLOROETHYLENE	NC	NA	NC	NA		Liver			--	
			1,3,5-TRIMETHYLBENZENE	NC	NA	NC	NA		Undetermined			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver				
			1,4-DICHLOROBENZENE	--	NA	--	NA		Endocrine				
			1-CHLOROBUTANE	NC	NA	NC	NA					--	
			2-CHLOROTOLUENE	NC	NA	NC	NA					--	
			3-METHYL HEXANE	NC	NA	NC	NA					--	
			BENZENE	--	NA	--	NA		Immune system /				
			CHLOROBENZENE	NC	NA	NC	NA		Liver				
			CHLOROFORM	--	NA	--	NA		Liver				
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			DIMETHYLSULFIDE	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver				
			M+P-XYLENE	NC	NA	NC	NA		Nervous System			--	
			METHYLENE CHLORIDE	--	NA	--	NA		Liver				
			METHYL-T-BUTYL ETHER	4.5E-14	NA	--	NA	4.5E-14	Liver	5.9E-09	NA	--	5.9E-09
			NAPHTHALENE	NC	NA	NC	NA		Nervous System				
			O-XYLENE	NC	NA	NC	NA		Nervous System			--	
			P-CHLOROTOLUENE	NC	NA	NC	NA					--	
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			SULFUR DIOXIDE	NC	NA	NC	NA					--	
			t-Butyl Alcohol	NC	NA	NC	NA					--	
			TETRACHLOROETHYLENE	--	NA	--	NA		Liver				
			TOLUENE	NC	NA	NC	NA		Liver / Kidney				
			TRICHLOROETHYLENE	--	NA	--	NA		Liver / Kidney				
			VINYL CHLORIDE	--	NA	--	NA		Liver			--	
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System			--	
			1,4-DIOXANE	--	NA	--	NA		Liver				
			2,4-DIMETHYLPHENOL	NC	NA	NC	NA		Hematological				
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory			--	
			3-NITROANILINE	NC	NA	NC	NA					--	
			ANILINE	--	NA	--	NA						
			Biphenyl	NC	NA	NC	NA		Kidney			--	
			BIS(2-ETHYLHEXYL)PHTHALATE	--	NA	--	NA		Reproductive				
			ALDRIN	--	NA	--	NA		Liver				
			HEPTACHLOR EPOXIDE	--	NA	--	NA		Liver			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System			--	
			ARSENIC	--	NA	--	NA		Skin				
			ANTIMONY (5)	NC	NA	NC	NA		General Toxicity /				
			BARIUM	NC	NA	NC	NA		Kidney				
			BERYLLIUM	NC	NA	NC	NA		GI system				
			CADMIUM	NC	NA	NC	NA						
			CHROMIUM	NC	NA	NC	NA		NOAEL				
			COBALT	NC	NA	NC	NA		Endocrine			--	
			COPPER	NC	NA	NC	NA		Undetermined				
			IRON	NC	NA	NC	NA					--	
			LEAD	--	NA	--	NA					--	
			MANGANESE	NC	NA	NC	NA		Nervous System				
			MERCURY	NC	NA	NC	NA		Kidney				
			NICKEL	NC	NA	NC	NA		General Toxicity				
			SELENIUM	NC	NA	NC	NA		Skin / Liver				
			SILVER	NC	NA	NC	NA		Skin / Eye / Respiratory				
			THALLIUM	NC	NA	NC	NA		NOAEL				
			VANADIUM	NC	NA	NC	NA		Kidney				
			ZINC	NC	NA	NC	NA		Hematological				
			CHEMICAL TOTAL	4.5E-14	--	--	--	5E-14		5.9E-09	--	--	6E-09
		EXPOSURE POINT TOTAL						5E-14					6E-09
	EXPOSURE MEDIUM TOTAL							5E-14					6E-09

TABLE H-42
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
		EXPOSURE POINT TOTAL						0E+00					0E+00
GROUND WATER	AIR	PLUME - TRENCH AIR	1,1,2,2-TETRACHLOROETHANE	NA	--	NA	NA						
			1,1,2-TRICHLOROETHANE	NA	--	NA	NA						
			1,1-DICHLOROETHANE	NA	--	NA	NA		Kidney				
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity				
			1,2-DICHLOROETHANE	NA	--	NA	NA		Nervous System				
			1,2-DICHLOROETHYLENE	NA	NC	NA	NA						
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,2-TRANS-DICHLOROETHYLENE	NA	NC	NA	NA		Liver				
			1,3,5-TRIMETHYLBENZENE	NA	NC	NA	NA		Undetermined				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	--	NA	NA		Developmental				
			1-CHLOROBUTANE	NA	NC	NA	NA						
			2-CHLOROTOLUENE	NA	NC	NA	NA						
			3-METHYL HEXANE	NA	NC	NA	NA						
			BENZENE	NA	--	NA	NA		Immune system				
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined				
			CHLOROFORM	NA	--	NA	NA		Liver				
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			DIMETHYLSULFIDE	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear				
			M+P-XYLENE	NA	NC	NA	NA		Nervous System				
			METHYLENE CHLORIDE	NA	--	NA	NA		Liver				
			METHYL-T-BUTYL ETHER	NA	6.3E-10	NA	NA	6.3E-10	Liver / Kidney	NA	6.8E-05	NA	6.8E-05
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			O-XYLENE	NA	NC	NA	NA		Nervous System				
			P-CHLOROTOLUENE	NA	NC	NA	NA						
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			SULFUR DIOXIDE	NA	NC	NA	NA						
			t-Butyl Alcohol	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	--	NA	NA		Nervous System				
			TOLUENE	NA	NC	NA	NA		Nervous System				
			TRICHLOROETHYLENE	NA	--	NA	NA		Nervous System				
			VINYL CHLORIDE	NA	--	NA	NA		Liver				
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System				
			1,4-DIOXANE	NA	--	NA	NA		Liver				
			2,4-DIMETHYLPHENOL	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA						
			3-NITROANILINE	NA	NC	NA	NA						
			ANILINE	NA	NC	NA	NA						
			Biphenyl	NA	NC	NA	NA						
			BIS(2-ETHYLHEXYL)PHTHALATE	NA	--	NA	NA						
			ALDRIN	NA	--	NA	NA						
			HEPTACHLOR EPOXIDE	NA	--	NA	NA						
			ALUMINUM	NA	NC	NA	NA		Nervous System				
			ARSENIC	NA	--	NA	NA		Developmental /				
			ANTIMONY (5)	NA	NC	NA	NA						
			BARIUM	NA	NC	NA	NA		Developmental				
			BERYLLIUM	NA	--	NA	NA		Immune system / Respiratory				
			CADMIUM	NA	--	NA	NA		Kidney / Respiratory				
			CHROMIUM	NA	NC	NA	NA		Respiratory				
			COBALT	NA	--	NA	NA		Respiratory				
			COPPER	NA	NC	NA	NA						
			IRON	NA	NC	NA	NA						
			LEAD	NA	--	NA	NA						
			MANGANESE	NA	NC	NA	NA		Nervous System				
			MERCURY	NA	NC	NA	NA						
			NICKEL	NA	NC	NA	NA		Respiratory				
			SELENIUM	NA	NC	NA	NA		Liver / Nervous System /				
			SILVER	NA	NC	NA	NA						
			THALLIUM	NA	NC	NA	NA						
			VANADIUM	NA	NC	NA	NA						
			ZINC	NA	NC	NA	NA						
			CHEMICAL TOTAL	--	6.3E-10	--	--	6E-10		--	6.8E-05	--	7E-05
		EXPOSURE POINT TOTAL						6E-10					7E-05
	EXPOSURE MEDIUM TOTAL							6E-10					7E-05
GROUNDWATER TOTAL								**6E-10**					**7E-05**

TABLE H-42
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
SOIL	SOIL	AREA 3 (0-10 FT)	1,1,2,2-TETRACHLOROETHANE	--	NA	--	NA		General Toxicity			--	
			1,2,3-TRICHLOROBENZENE	NC	NA	NC	NA					--	
			1,2,4-TRICHLOROBENZENE	NC	NA	NC	NA		Endocrine	2.8E-06	NA	8.4E-07	3.6E-06
			1,2-CIS-DICHLOROETHYLENE	NC	NA	NC	NA		Hematological	2.1E-04	NA	--	2.1E-04
			1,2-DICHLOROBENZENE	NC	NA	NC	NA		Liver	1.4E-04	NA	4.2E-05	1.8E-04
			1,2-DICHLOROETHANE	1.7E-08	NA	--	NA	1.7E-08	Kidney	6.6E-04	NA	--	6.6E-04
			1,2-DICHLOROPROPANE	--	NA	--	NA		Liver			--	
			1,3-DICHLOROBENZENE	NC	NA	NC	NA		Liver			--	
			1,4-DICHLOROBENZENE	2.2E-10	NA	6.7E-11	NA	2.9E-10	Endocrine	4.1E-05	NA	1.2E-05	5.3E-05
			BENZENE	3.0E-08	NA	--	NA	3.0E-08	Immune system /	3.9E-03	NA	--	3.9E-03
			CHLOROBENZENE	NC	NA	NC	NA		Liver	3.1E-04	NA	--	3.1E-04
			CYCLOHEXANE, METHYL-	NC	NA	NC	NA					--	
			ETHYLBENZENE	NC	NA	NC	NA		Liver	2.5E-03	NA	--	2.5E-03
			METHYLENE CHLORIDE	3.0E-09	NA	--	NA	3.0E-09	Liver	1.7E-03	NA	--	1.7E-03
			O-XYLENE	NC	NA	NC	NA		Nervous System	4.4E-04	NA	--	4.4E-04
			P-ISOPROPYLTOLUENE	NC	NA	NC	NA					--	
			TETRACHLOROETHYLENE	--	NA	--	NA		Liver			--	
			TOLUENE	NC	NA	NC	NA		Liver / Kidney	1.1E-03	NA	--	1.1E-03
			TRICHLOROETHYLENE	5.7E-09	NA	--	NA	5.7E-09	Liver / Kidney	2.9E-02	NA	--	2.9E-02
			XYLENES,TOTAL	NC	NA	NC	NA		Nervous System	1.4E-03	NA	--	1.4E-03
			1,2,4,5 -TETRACHLOROBENZENE	NC	NA	NC	NA					--	
			2-METHYLNAPHTHALENE	NC	NA	NC	NA		Respiratory	3.0E-04	NA	1.2E-04	4.2E-04
			BENZO(A)ANTHRACENE	--	NA	--	NA		Kidney			--	
			BENZO(A)PYRENE	--	NA	--	NA		Kidney			--	
			BENZO(B)FLUORANTHENE	--	NA	--	NA		Kidney			--	
			Biphenyl	NC	NA	NC	NA		Kidney	2.7E-05	NA	8.0E-06	3.5E-05
			DIBENZO(A,H)ANTHRACENE	--	NA	--	NA		Kidney			--	
			INDENO(1,2,3-CD)PYRENE	--	NA	--	NA		Kidney			--	
			NAPHTHALENE	NC	NA	NC	NA		Nervous System			--	
			ALUMINUM	NC	NA	NC	NA		Nervous System	2.5E-02	NA	--	2.5E-02
			ANTIMONY	NC	NA	NC	NA		General Toxicity / Hematological			--	
			ARSENIC	3.1E-07	NA	4.6E-08	NA	3.5E-07	Skin	4.8E-02	NA	7.2E-03	5.5E-02
			CHROMIUM	NC	NA	NC	NA		NOAEL	6.7E-05	NA	--	6.7E-05
			COBALT	NC	NA	NC	NA		Endocrine	2.3E-03	NA	--	2.3E-03
			COPPER	NC	NA	NC	NA		Undetermined	3.0E-02	NA	--	3.0E-02
			MANGANESE	NC	NA	NC	NA		Nervous System	1.6E-03	NA	--	1.6E-03
			IRON	NC	NA	NC	NA			9.4E-02	NA	--	9.4E-02
			THALLIUM	NC	NA	NC	NA		NOAEL	6.8E-03	NA	--	6.8E-03
			VANADIUM	NC	NA	NC	NA		Kidney	1.3E-01	NA	--	1.3E-01
			CHEMICAL TOTAL	3.6E-07	--	4.6E-08	--	4E-07		3.8E-01	--	7.3E-03	4E-01
		EXPOSURE POINT TOTAL						4E-07					4E-01
	EXPOSURE MEDIUM TOTAL							4E-07					4E-01
SOIL	AIR	DUST AT SITE	1,1,2,2-TETRACHLOROETHANE	NA	--	NA	NA						
			1,2,3-TRICHLOROBENZENE	NA	NC	NA	NA						
			1,2,4-TRICHLOROBENZENE	NA	NC	NA	NA			NA	6.5E-09	NA	6.5E-09
			1,2-CIS-DICHLOROETHYLENE	NA	NC	NA	NA			NA	--	NA	
			1,2-DICHLOROBENZENE	NA	NC	NA	NA		General Toxicity	NA	2.2E-08	NA	2.2E-08
			1,2-DICHLOROETHANE	NA	2.6E-12	NA	NA	2.6E-12	Nervous System	NA	9.8E-08	NA	9.8E-08
			1,2-DICHLOROPROPANE	NA	NC	NA	NA		Respiratory				
			1,3-DICHLOROBENZENE	NA	NC	NA	NA						
			1,4-DICHLOROBENZENE	NA	2.3E-13	NA	NA	2.3E-13	Developmental	NA	7.5E-09	NA	7.5E-09
			BENZENE	NA	2.2E-12	NA	NA	2.2E-12	Immune system	NA	2.5E-07	NA	2.5E-07
			CHLOROBENZENE	NA	NC	NA	NA		Undetermined	NA	2.2E-08	NA	2.2E-08
			CYCLOHEXANE, METHYL-	NA	NC	NA	NA						
			ETHYLBENZENE	NA	NC	NA	NA		ear	NA	7.3E-09	NA	7.3E-09
			METHYLENE CHLORIDE	NA	7.7E-15	NA	NA	7.7E-15	Liver	NA	5.4E-08	NA	5.4E-08
			O-XYLENE	NA	NC	NA	NA		Nervous System	NA	2.3E-07	NA	2.3E-07
			P-ISOPROPYLTOLUENE	NA	NC	NA	NA						
			TETRACHLOROETHYLENE	NA	--	NA	NA		Nervous System				
			TOLUENE	NA	NC	NA	NA		Nervous System	NA	9.1E-08	NA	9.1E-08
			TRICHLOROETHYLENE	NA	2.7E-13	NA	NA	2.7E-13	Nervous System	NA	8.4E-09	NA	8.4E-09
			XYLENES,TOTAL	NA	NC	NA	NA		Nervous System	NA	7.1E-07	NA	7.1E-07
			1,2,4,5 -TETRACHLOROBENZENE	NA	NC	NA	NA						
			2-METHYLNAPHTHALENE	NA	NC	NA	NA			NA	--	NA	
			BENZO(A)ANTHRACENE	NA	--	NA	NA						
			BENZO(A)PYRENE	NA	--	NA	NA						
			BENZO(B)FLUORANTHENE	NA	--	NA	NA						
			Biphenyl	NA	NC	NA	NA			NA	--	NA	
			DIBENZO(A,H)ANTHRACENE	NA	--	NA	NA						
			INDENO(1,2,3-CD)PYRENE	NA	--	NA	NA						

TABLE H-42
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - REASONABLE MAXIMUM EXPOSURE - FUTURE - CONSTRUCTION WORKER - ADULT
BASELINE HUMAN HEALTH RISK ASSESSMENT
CPS/MADISON
OLD BRIDGE, NEW JERSEY

SCENARIO TIMEFRAME: FUTURE
RECEPTOR POPULATION: CONSTRUCTION WORKER
RECEPTOR AGE: ADULT

SEWER LINE AREA 3

MEDIUM	EXPOSURE MEDIUM	EXPOSURE POINT	CHEMICAL	CARCINOGENIC RISK (1)					NON-CARCINOGENIC HAZARD QUOTIENT (1)				
				INGESTION	INHALATION	DERMAL	EXTERNAL (RADIATION)	EXPOSURE ROUTES TOTAL	PRIMARY TARGET ORGAN	INGESTION	INHALATION	DERMAL	EXPOSURE ROUTES TOTAL
			NAPHTHALENE	NA	NC	NA	NA		Respiratory				
			ALUMINUM	NA	NC	NA	NA		Nervous System	NA	2.6E-03	NA	2.6E-03
			ANTIMONY	NA	NC	NA	NA						
			ARSENIC	NA	7.6E-10	NA	NA	7.6E-10	Developmental / Cardiovascular / Nervous system	NA	8.3E-04	NA	8.3E-04
			CHROMIUM	NA	NC	NA	NA		Respiratory	NA	7.0E-06	NA	7.0E-06
			COBALT	NA	4.7E-10	NA	NA	4.7E-10	Respiratory	NA	1.8E-04	NA	1.8E-04
			COPPER	NA	NC	NA	NA			NA	--	NA	
			MANGANESE	NA	NC	NA	NA		Nervous System	NA	2.3E-03	NA	2.3E-03
			IRON	NA	NC	NA	NA			NA	--	NA	
			THALLIUM	NA	NC	NA	NA			NA	--	NA	
			VANADIUM	NA	NC	NA	NA			NA	4.9E-04	NA	4.9E-04
			CHEMICAL TOTAL	--	1.2E-09	--	--	1E-09		--	6.5E-03	--	6E-03
		EXPOSURE POINT TOTAL						1E-09					6E-03

RECEPTOR TOTAL	**4E-07**		**4E-01**
TOTAL RISK ACROSS ALL MEDIA	**4E-07**	**TOTAL HAZARD ACROSS ALL MEDIA**	**4E-01**

NOTES:
NC - Not carcinogenic by this exposure route.
NA - Not applicable; exposure route not applicable for this chemical/exposure medium.
-- - Not calculated; dose-response data and/or dermal absorption values are not available.

Prepared by: LCG 04/09/15
Checked by: BJR 4/10/2015

TOTAL GENERAL TOXICITY HI =	**2.2E-08**
TOTAL CARDIOVASCULAR HI =	**8.3E-04**
TOTAL DEVELOPMENTAL HI =	**8.3E-04**
TOTAL ENDOCRINE HI =	**2.4E-03**
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TOTAL HEMATOLOGICAL HI =	**4.1E-03**
TOTAL IMMUNE SYSTEM HI =	**3.9E-03**
TOTAL KIDNEY HI =	**1.7E-01**
TOTAL LIVER HI =	**3.5E-02**
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TOTAL NERVOUS SYSTEM HI =	**3.4E-02**
TOTAL NOAEL HI =	**1.3E-01**
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TOTAL SKIN HI =	**5.5E-02**
TOTAL RESPIRATORY HI =	**6.1E-04**